

**PENNSYLVANIA-AMERICAN WATER COMPANY**

**2017 GENERAL BASE RATE CASE**

**R-2017-2595853**

**EXHIBITS NO. 11-D, 11-E, 11-F**

**DEPRECIATION STUDY**

**WASTEWATER OPERATIONS**

**(EXCLUDING SCRANTON WASTEWATER)**

**AS OF DECEMBER 31, 2016, 2017, 2018**

PENNSYLVANIA-AMERICAN WATER COMPANY

HERSHEY, PENNSYLVANIA

WASTEWATER OPERATIONS

(Excluding Scranton Wastewater)

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WASTEWATER PLANT

AS OF DECEMBER 31, 2016

*Prepared by:*



***Gannett Fleming***

*Excellence Delivered As Promised*

Exhibit No. 11-D  
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY  
Hershey, Pennsylvania

WASTEWATER OPERATIONS  
(Excluding Scranton Wastewater)

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS  
RELATED TO WASTEWATER PLANT  
AS OF DECEMBER 31, 2016

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC  
Camp Hill, Pennsylvania



*Excellence Delivered As Promised*

April 21, 2017

Pennsylvania-American Water Company  
800 West Hersheypark Drive  
Hershey, PA 17033

Attention Mr. John R. Cox  
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2016. Summaries of the original cost, annual accruals and the book depreciation reserve are presented in Tables 1 through 3, beginning on page I-3 of the attached report.

A description of the methods and procedures upon which the study was based, as well as support for the service life estimates, is set forth in a companion report "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2017".

Respectfully submitted,

GANNETT FLEMING VALUATION  
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink that reads "John J. Spanos".

JOHN J. SPANOS  
Sr. Vice President

JJS:mlw

062027.100

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**PART I. RESULTS OF STUDY**

**PENNSYLVANIA-AMERICAN WATER COMPANY**

**WASTEWATER OPERATIONS  
(Excluding Scranton Wastewater)**

**DEPRECIATION STUDY**

**PART I. RESULTS OF STUDY**

**SUMMARY OF RESULTS**

Table 1 presents the development of net original cost used in the study. The net original cost is the original cost of wastewater plant less advances and contributions. The results of the depreciation study are summarized in Table 2, which sets forth the book reserve and the calculated annual depreciation related to net original cost as of December 31, 2016, and the annual amortization of net negative salvage. Table 3 presents the calculation of the amortization of experienced net salvage, by account, based on the five-year period, 2012-2016.

**DETAILED TABULATIONS OF DEPRECIATION CALCULATIONS**

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-2. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage, and cost of removal are set forth by account for the years 2012 through 2016, on pages III-2 through III-6.

**PENNSYLVANIA-AMERICAN WATER COMPANY**  
**WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2016

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2016 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2016 (6)
<b>DEPRECIABLE PLANT</b>					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	479,296.86				479,296.86
354.30 STRUCTURES AND IMPROVEMENTS - SPP	18,169,291.90		2,734,528.70		15,434,763.20
354.40 STRUCTURES AND IMPROVEMENTS - TDP	50,958,423.67		1,853,012.73		49,105,410.94
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	2,130,769.53				2,130,769.53
355.00 POWER GENERATING EQUIPMENT	4,881,040.73		144,517.16		4,736,523.57
360.10 COLLECTION SEWERS - FORCE MAINS	30,666,434.21	157,753.14	11,251,126.61		19,257,554.46
361.10 COLLECTION SEWERS - GRAVITY MAINS	73,305,655.63	143,423.53	9,166,636.12		63,995,595.98
361.20 MANHOLES	13,045,669.35		4,387,312.76		8,658,356.59
363.00 SERVICES	15,575,965.95	70,197.45	3,737,893.58		11,767,874.92
364.00 FLOW MEASURING DEVICES	533,521.59		14,726.81		518,794.78
365.00 FLOW MEASURING INSTALLATIONS	20,918.30				20,918.30
370.00 RECEIVING WELLS	103,531.95				103,531.95
371.00 PUMPING EQUIPMENT	7,114,659.39		66,626.22		7,048,033.17
380.00 TREATMENT EQUIPMENT	52,675,840.17		2,200,080.47		50,475,759.70
381.00 PLANT SEWERS	6,450,916.81		30,192.33		6,420,724.48
382.00 OUTFALL SEWER LINES	674,274.67				674,274.67
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	273,149.74				273,149.74
390.00 OFFICE FURNITURE AND EQUIPMENT	199,675.37				199,675.37
391.00 TRANSPORTATION EQUIPMENT	440,469.70				440,469.70
392.00 STORES EQUIPMENT	64,249.97				64,249.97
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	536,841.71				536,841.71
394.00 LABORATORY EQUIPMENT	342,757.97				342,757.97
395.00 POWER OPERATED EQUIPMENT	532,736.59		10,000.00		522,736.59
396.00 COMMUNICATION EQUIPMENT	1,522,349.38				1,522,349.38
397.00 MISCELLANEOUS EQUIPMENT	3,256,051.56		29,000.00		3,227,051.56
<b>TOTAL DEPRECIABLE PLANT</b>	<b>283,954,492.70</b>	<b>371,374.12</b>	<b>35,625,653.49</b>	<b>0.00</b>	<b>247,957,465.09</b>
<b>NONDEPRECIABLE PLANT</b>					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,677,525.60		125,000.00		1,552,525.60
<b>TOTAL NONDEPRECIABLE PLANT</b>	<b>3,077,708.65</b>	<b>0.00</b>	<b>125,000.00</b>	<b>0.00</b>	<b>2,952,708.65</b>
<b>TOTAL WASTEWATER PLANT IN SERVICE</b>	<b>287,032,201.35</b>	<b>371,374.12</b>	<b>35,750,653.49</b>	<b>0.00</b>	<b>250,910,173.74</b>



PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

 TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND  
 CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2016

	DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2016 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL		COMPOSITE REMAINING LIFE (8)
						ACCRUAL AMOUNT (6)	ACCRUAL RATE (7)=(6)/(3)	
<b>DEPRECIABLE PLANT</b>								
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	479,296.86	49,350	429,947	11,001	2.30	39.1
354.30	STRUCTURES AND IMPROVEMENTS - SPP	50-R2.5	15,434,763.20	4,146,488	11,288,276	249,925	1.62	45.2
354.40	STRUCTURES AND IMPROVEMENTS - TDP	65-R2	49,105,410.94	9,948,199	39,157,212	691,430	1.41	56.6
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	2,130,769.53	1,306,466	824,304	24,748	1.16	33.3
355.00	POWER GENERATING EQUIPMENT	35-R2.5	4,736,523.57	2,652,039	2,084,484	70,197	1.48	29.7
360.10	COLLECTION SEWERS - FORCE MAINS	70-S2	19,257,554.46	175,918	19,081,636	359,040	1.86	53.1
361.10	COLLECTION SEWERS - GRAVITY MAINS	70-R2.5	63,995,595.98	11,371,594	52,624,002	925,253	1.45	56.9
361.20	MANHOLES	50-S1.5	8,658,356.59	1,103,203	7,555,154	183,051	2.11	41.3
363.00	SERVICES	38-R3	11,767,874.92	3,048,755	8,719,120	380,797	3.24	22.9
364.00	FLOW MEASURING DEVICES	20-L3	518,794.78	(3,852)	522,647	39,167	7.55	13.3
365.00	FLOW MEASURING INSTALLATIONS	30-S1.5	20,918.30	4,022	16,896	733	3.50	23.1
370.00	RECEIVING WELLS	50-R3	103,531.95	16,346	87,186	2,042	1.97	42.7
371.00	PUMPING EQUIPMENT	40-S0	7,048,033.17	1,267,841	5,780,192	162,743	2.31	35.5
380.00	TREATMENT EQUIPMENT	45-R2	50,475,759.70	10,681,481	39,794,279	1,072,308	2.12	37.1
381.00	PLANT SEWERS	50-R3	6,420,724.48	831,789	5,588,936	129,614	2.02	43.1
382.00	OUTFALL SEWER LINES	50-R3	674,274.67	157,760	516,515	13,675	2.03	37.8
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT	20-S2.5	273,149.74	72,881	200,268	14,747	5.40	13.6
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	199,675.37	53,384	146,291	11,861	5.94	12.3
391.00	TRANSPORTATION EQUIPMENT	15-L4	440,469.70	245,469	195,000	20,435	4.64	9.5
392.00	STORES EQUIPMENT	25-SQ	64,249.97	18,187	46,063	2,310	3.60	19.9
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	536,841.71	241,652	295,190	18,017	3.36	16.4
394.00	LABORATORY EQUIPMENT	15-SQ	342,757.97	193,677	149,081	13,157	3.84	11.3
395.00	POWER OPERATED EQUIPMENT	16-L2.5	522,736.59	242,424	280,312	32,263	6.17	8.7
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,522,349.38	854,060	668,289	65,055	4.27	10.3
397.00	MISCELLANEOUS EQUIPMENT	15-SQ	3,227,051.56	467,686	2,759,366	288,902	8.95	9.6
<b>TOTAL DEPRECIABLE PLANT</b>			<b>247,957,465.09</b>	<b>49,146,818</b>	<b>198,810,646</b>	<b>4,782,472</b>	<b>1.93</b>	
<b>AMORTIZATION OF NET SALVAGE</b>						<b>65,222</b>		
<b>NONDEPRECIABLE PLANT</b>								
352.10	FRANCHISES		221,139.78					
353.20	LAND AND LAND RIGHTS - COLLECTION		1,093,483.20					
353.30	LAND AND LAND RIGHTS - SPP		85,560.07					
353.40	LAND AND LAND RIGHTS - TDP		1,552,525.60					
<b>TOTAL NONDEPRECIABLE PLANT</b>			<b>2,952,708.65</b>					
<b>TOTAL WASTEWATER PLANT IN SERVICE</b>			<b>250,910,173.74</b>	<b>49,146,818</b>	<b>198,810,646</b>	<b>4,847,694</b>		

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 3. AMORTIZATION OF EXPERIENCED NET SALVAGE

Account (1)	EXPERIENCED NET SALVAGE					5 - YEAR AMORT. (7)
	2012 (2)	2013 (3)	2014 (4)	2015 (5)	2016 (5)	
354.20	0	0	(17,282)	(1,398)	(42)	3,744
354.30	(3,707)	(1,424)	(0)	(4,141)	0	1,854
354.40	(159,227)	(27,581)	(10,305)	(1,027)	(4,581)	40,544
354.70	0	0	0	(480)	0	96
355.00	(3,170)	(963)	(510)	(1,666)	(4,934)	2,248
360.10	(461)	(8,182)	(1,577)	(3,256)	(12,703)	5,236
361.10	(14,158)	(34,624)	(16,027)	(65,334)	(6,970)	27,423
361.20	0	0	0	(7,497)	(53,000)	12,099
363.00	(2,580)	(15,735)	(26,515)	(27,377)	(11,694)	16,780
364.00	0	0	(816)	0	0	163
371.00	(2,645)	(2,291)	(4,325)	(4,902)	(11,515)	5,136
380.00	(120,523)	(6,028)	(21,655)	(1,623)	(23,917)	34,749
381.00	0	0	0	0	(2,110)	422
382.00	(1)	0	0	0	0	0
390.00	0	0	0	0	(276)	55
393.00	0	(240)	(240)	0	171,552	(34,214)
394.00	0	(6)	0	0	(566)	115
395.00	0	0	0	0	44,960	(8,992)
396.00	(1,192)	(2,027)	0	(4,190)	131,476	(24,813)
397.00	0	0	0	0	87,116	(17,423)
TOTAL	(307,663)	(99,101)	(99,252)	(122,889)	302,795	65,222

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**PART II. DETAILED DEPRECIATION CALCULATIONS**

**CUMULATIVE DEPRECIATED ORIGINAL COST**

**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016**

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT (2)-(3) (4)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
1915	96,405	83,672	12,733	12,733	0.01
1920	170,170	145,019	25,151	37,884	0.02
1929	19,474	16,116	3,358	41,242	0.02
1930	227,025	185,489	41,536	82,778	0.04
1932	602	602	0	82,778	0.04
1935	44,011	35,043	8,968	91,746	0.04
1939	249,402	193,128	56,274	148,020	0.06
1945	46,353	34,478	11,875	159,895	0.07
1955	47,296	31,855	15,441	175,336	0.08
1957	1,920,120	1,331,452	588,668	764,003	0.33
1961	403,060	367,639	35,421	799,425	0.35
1962	33,707	21,201	12,506	811,930	0.35
1965	868,851	576,587	292,264	1,104,195	0.48
1967	266,652	234,802	31,850	1,136,045	0.49
1968	82,616	48,174	34,442	1,170,486	0.51
1969	525,032	292,276	232,756	1,403,242	0.61
1970	492	349	143	1,403,385	0.61
1971	554	389	165	1,403,550	0.61
1972	1,048	866	182	1,403,732	0.61
1973	241,375	36,905	204,470	1,608,202	0.70
1974	1,648,485	113,674	1,534,811	3,143,014	1.37
1975	2,885,027	1,159,815	1,725,212	4,868,225	2.12
1976	1,453,114	294,980	1,158,134	6,026,359	2.62
1977	1,054,007	400,904	653,103	6,679,462	2.91
1978	402,919	82,938	319,981	6,999,443	3.05
1979	148,571	43,293	105,278	7,104,721	3.09
1980	443,365	233,733	209,632	7,314,352	3.18
1981	237,764	51,262	186,502	7,500,855	3.26
1982	195,575	91,395	104,180	7,605,034	3.31
1983	885,028	375,070	509,958	8,114,993	3.53
1984	3,085,860	1,607,505	1,478,355	9,593,347	4.17
1985	2,234,981	1,022,400	1,212,581	10,805,929	4.70
1986	2,979,672	1,780,818	1,198,854	12,004,783	5.22
1987	1,583,194	760,173	823,021	12,827,804	5.58
1988	3,132,515	1,357,604	1,774,911	14,602,715	6.35
1989	3,311,648	1,317,098	1,994,550	16,597,265	7.22
1990	303,095	113,074	190,021	16,787,286	7.30
1991	571,977	345,088	226,889	17,014,175	7.40
1992	4,176,431	2,108,977	2,067,454	19,081,629	8.30
1993	11,878,434	4,651,086	7,227,348	26,308,977	11.45
1994	900,400	264,581	635,819	26,944,796	11.72
1995	940,710	310,782	629,928	27,574,724	12.00
1996	1,218,826	407,805	811,021	28,385,745	12.35
1997	6,509,457	1,469,919	5,039,538	33,425,283	14.54
1998	3,608,644	989,503	2,619,141	36,044,424	15.68
1999	514,852	126,139	388,713	36,433,136	15.85
2000	8,735,597	2,513,939	6,221,658	42,654,794	18.56
2001	2,873,131	619,173	2,253,958	44,908,752	19.54
2002	2,905,240	674,418	2,230,822	47,139,574	20.51
2003	1,661,825	439,568	1,222,257	48,361,831	21.04
2004	4,063,640	536,172	3,527,468	51,889,299	22.58
2005	6,783,501	1,508,344	5,275,157	57,164,455	24.87
2006	5,698,824	1,047,629	4,651,195	61,815,650	26.90
2007	8,075,917	1,083,411	6,992,506	68,808,156	29.94
2008	10,613,582	1,584,654	9,028,928	77,837,083	33.87
2009	58,527,590	10,608,083	47,919,507	125,756,591	54.72

**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016**

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT (2)-(3) (4)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
2010	23,332,915	3,315,440	20,017,475	145,774,066	63.43
2011	1,584,419	316,309	1,268,110	147,042,176	63.98
2012	2,780,969	305,031	2,475,938	149,518,114	65.06
2013	9,491,102	666,545	8,824,557	158,342,671	68.90
2014	45,321,210	2,902,184	42,419,026	200,761,697	87.36
2015	18,362,721	804,765	17,557,956	218,319,654	94.99
2016	11,593,516	90,777	11,502,739	229,822,393	100.00
SUBTOTAL	283,954,493	54,132,099	229,822,393		
UNDATED	(35,997,028)	(4,985,281)	(31,011,747)		
NONDEPRECIABLE	2,952,709	0	2,952,709		
TOTAL	250,910,174	49,146,818	201,763,355		

**NET UTILITY PLANT IN SERVICE**

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R3						
NET SALVAGE PERCENT.. 0						
2007	20,658.88	4,219	3,330	17,329	35.81	484
2008	113,755.87	20,855	16,459	97,297	36.75	2,648
2009	178,514.40	28,919	22,824	155,690	37.71	4,129
2011	8,586.64	1,025	809	7,778	39.63	196
2013	64,846.18	4,943	3,901	60,945	41.57	1,466
2014	14,766.25	804	635	14,131	42.55	332
2015	41,897.14	1,369	1,080	40,817	43.53	938
2016	36,271.50	395	312	35,960	44.51	808
	479,296.86	62,529	49,350	429,947		11,001
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						39.1 2.30



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
1965	48,454.85	37,523	48,455			
1967	12,500.00	9,455	12,500			
1976	26,258.22	17,294	26,258			
1977	29,073.11	18,787	29,073			
1978	11,146.44	7,062	11,146			
1980	3,250.10	1,974	3,250			
1982	29,509.52	17,121	29,510			
1983	86,589.73	49,044	86,590			
1984	49,026.42	27,072	49,026			
1985	143,067.69	76,942	143,068			
1986	476,340.48	249,221	473,847	2,493	23.84	105
1987	29,681.60	15,090	28,691	991	24.58	40
1988	100,408.08	49,541	94,193	6,215	25.33	245
1989	54,460.32	26,043	49,516	4,944	26.09	189
1991	285,470.50	127,720	242,835	42,636	27.63	1,543
1992	325,698.08	140,571	267,269	58,429	28.42	2,056
1993	487,292.90	202,519	385,052	102,241	29.22	3,499
1994	49,085.00	19,614	37,292	11,793	30.02	393
1996	24,175.73	8,868	16,861	7,315	31.66	231
1997	104,486.00	36,591	69,571	34,915	32.49	1,075
1998	224,083.37	74,709	142,045	82,038	33.33	2,461
1999	11,157.00	3,530	6,712	4,445	34.18	130
2000	7,035.93	2,107	4,006	3,030	35.03	86
2001	179,000.00	50,514	96,043	82,957	35.89	2,311
2002	9,723.14	2,575	4,896	4,827	36.76	131
2003	271,071.10	67,009	127,405	143,666	37.64	3,817
2004	101,407.82	23,283	44,268	57,140	38.52	1,483
2005	9,114.78	1,931	3,671	5,444	39.41	138
2006	928,740.33	180,176	342,571	586,169	40.30	14,545
2007	516,608.48	90,923	172,873	343,735	41.20	8,343
2008	50,243.32	7,928	15,074	35,169	42.11	835
2009	2,933,040.76	409,452	778,495	2,154,546	43.02	50,082
2010	1,290,300.82	156,643	297,827	992,474	43.93	22,592
2011	14,574.94	1,498	2,848	11,727	44.86	261
2013	181,693.78	11,955	22,730	158,964	46.71	3,403
2014	6,967,587.64	327,477	622,636	6,344,952	47.65	133,157

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
2015	1,552,991.78	43,794	83,266	1,469,726	48.59	30,247
2016	544,942.14	5,122	9,738	535,204	49.53	10,806
9999	2,734,528.70-	391,108-	734,619-	1,999,909-		44,279-
	15,434,763.20	2,207,570	4,146,488	11,288,276		249,925
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						45.2 1.62

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2						
NET SALVAGE PERCENT.. 0						
1932	602.40	507	602			
1957	140,486.42	95,660	135,992	4,494	20.74	217
1961	391,131.16	253,273	360,057	31,074	22.91	1,356
1965	53,961.55	33,016	46,936	7,026	25.23	278
1967	67,934.06	40,301	57,292	10,642	26.44	402
1973	38,481.00	20,561	29,230	9,251	30.27	306
1975	419,410.21	215,447	306,283	113,127	31.61	3,579
1976	50,336.60	25,331	36,011	14,326	32.29	444
1977	8,681.00	4,276	6,079	2,602	32.98	79
1984	693,417.71	288,143	409,628	283,790	37.99	7,470
1985	133,860.33	54,080	76,881	56,979	38.74	1,471
1986	246,413.42	96,707	137,480	108,933	39.49	2,758
1987	821,866.00	313,065	445,058	376,808	40.24	9,364
1988	1,266,453.86	467,423	664,495	601,959	41.01	14,678
1989	17,260.28	6,168	8,769	8,491	41.77	203
1991	123,376.00	41,131	58,472	64,904	43.33	1,498
1992	1,496,329.14	480,666	683,322	813,007	44.12	18,427
1993	319,290.14	98,686	140,293	178,997	44.91	3,986
1994	16,680.06	4,950	7,037	9,643	45.71	211
1995	11,077.00	3,151	4,480	6,597	46.51	142
1996	602,783.45	163,957	233,084	369,699	47.32	7,813
1997	69,732.72	18,087	25,713	44,020	48.14	914
1998	600,489.64	148,183	210,659	389,831	48.96	7,962
2000	6,605,956.92	1,462,427	2,079,007	4,526,950	50.61	89,448
2001	461,562.96	96,217	136,783	324,780	51.45	6,313
2002	162,693.43	31,813	45,226	117,467	52.29	2,246
2004	15,555.13	2,635	3,746	11,809	53.99	219
2005	537,200.04	83,970	119,373	417,827	54.84	7,619
2006	451,068.80	64,539	91,750	359,319	55.70	6,451
2007	24,985.47	3,240	4,606	20,379	56.57	360
2008	163,724.12	19,043	27,072	136,652	57.44	2,379
2009	16,500,764.39	1,698,259	2,414,269	14,086,495	58.31	241,579
2010	5,022,247.56	448,888	638,146	4,384,102	59.19	74,068
2011	293,205.72	22,240	31,617	261,589	60.07	4,355
2012	9,700.00	603	857	8,843	60.96	145
2013	162,285.83	7,864	11,180	151,106	61.85	2,443
2014	12,894,243.39	446,399	634,606	12,259,637	62.75	195,373

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2						
NET SALVAGE PERCENT.. 0						
2015	44,549.99	932	1,325	43,225	63.64	679
2016	18,625.77	129	183	18,443	64.55	286
9999	1,853,012.73-	264,069-	375,400-	1,477,613-		26,091-
	49,105,410.94	6,997,898	9,948,199	39,157,212		691,430
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						56.6 1.41

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-S1						
NET SALVAGE PERCENT.. 0						
1939	3,519.17	3,519	3,519			
1972	450.26	352	450			
1984	11,260.27	7,300	11,260			
1992	14,967.00	8,048	14,967			
1993	16,986.00	8,872	16,986			
1994	29,220.00	14,794	29,220			
1997	5,855.00	2,670	5,855			
2002	1,066.29	386	1,066			
2003	42,889.48	14,631	42,889			
2007	16,193.86	4,081	16,194			
2008	362,898.26	82,846	362,898			
2009	80,918.35	16,461	80,918			
2010	38,934.54	6,942	38,935			
2011	7,105.08	1,082	7,105			
2012	28,465.52	3,578	28,466			
2013	25,257.86	2,490	21,314	3,944	31.55	125
2014	413,665.01	29,312	250,910	162,755	32.52	5,005
2015	1,021,939.89	43,504	372,392	649,548	33.51	19,384
2016	9,177.69	131	1,122	8,056	34.50	234
	2,130,769.53	250,999	1,306,466	824,304		24,748

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 33.3 1.16

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-R2.5						
NET SALVAGE PERCENT.. 0						
1983	18,550.00	13,738	18,550			
1987	19,246.40	13,055	19,246			
1989	49,338.78	31,746	49,339			
1992	88,422.86	51,917	88,423			
1993	201,611.77	114,401	201,612			
1994	20,325.00	11,121	20,325			
1997	30,447.00	14,728	30,447			
1998	12,580.62	5,809	12,581			
2001	38,477.83	15,149	38,478			
2002	67,744.00	25,085	67,744			
2005	70,231.14	20,949	62,715	7,516	24.56	306
2007	16,704.08	4,152	12,430	4,274	26.30	163
2008	230,613.39	51,526	154,254	76,359	27.18	2,809
2009	2,921,665.47	577,642	1,729,297	1,192,368	28.08	42,463
2010	20,681.36	3,557	10,649	10,032	28.98	346
2011	14,376.97	2,103	6,296	8,081	29.88	270
2012	27,649.83	3,318	9,933	17,717	30.80	575
2013	26,762.41	2,508	7,508	19,254	31.72	607
2014	904,180.09	60,707	181,739	722,441	32.65	22,127
2015	90,933.42	3,664	10,969	79,964	33.59	2,381
2016	10,498.31	141	422	10,076	34.53	292
9999	144,517.16-	30,408-	80,918-	63,600-		2,142-
	4,736,523.57	996,608	2,652,039	2,084,484		70,197
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						29.7 1.48

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-S2						
NET SALVAGE PERCENT.. 0						
1957	19,260.35	13,116	620	18,640	22.33	835
1965	13,337.78	8,288	392	12,946	26.50	489
1973	199,477.92	110,084	5,202	194,276	31.37	6,193
1974	1,503,776.46	815,483	38,539	1,465,237	32.04	45,731
1975	849,779.52	452,686	21,394	828,386	32.71	25,325
1976	1,013,708.88	530,028	25,049	988,660	33.40	29,601
1977	458,850.00	235,257	11,118	447,732	34.11	13,126
1978	270,355.19	135,872	6,421	263,934	34.82	7,580
1979	73,749.33	36,295	1,715	72,034	35.55	2,026
1980	75,105.93	36,169	1,709	73,397	36.29	2,023
1981	160,944.25	75,758	3,580	157,364	37.05	4,247
1982	53,478.41	24,593	1,162	52,316	37.81	1,384
1983	192,381.70	86,324	4,080	188,302	38.59	4,880
1985	309,939.29	131,991	6,238	303,701	40.19	7,557
1986	93,600.62	38,764	1,832	91,769	41.01	2,238
1987	225,949.78	90,897	4,296	221,654	41.84	5,298
1988	404,167.30	157,682	7,452	396,715	42.69	9,293
1989	92,110.83	34,818	1,645	90,466	43.54	2,078
1991	75,459.60	26,637	1,259	74,201	45.29	1,638
1992	34,682.29	11,802	558	34,124	46.18	739
1993	542,846.21	177,744	8,400	534,446	47.08	11,352
1994	316,329.79	99,464	4,701	311,629	47.99	6,494
1996	132,298.94	38,102	1,801	130,498	49.84	2,618
1997	1,385,627.69	380,452	17,980	1,367,648	50.78	26,933
1998	466,886.30	121,857	5,759	461,127	51.73	8,914
1999	210,238.89	52,019	2,458	207,781	52.68	3,944
2000	489,230.36	114,338	5,404	483,826	53.64	9,020
2001	874,316.30	192,227	9,084	865,232	54.61	15,844
2002	556,204.52	114,578	5,415	550,790	55.58	9,910
2003	385,945.70	74,102	3,502	382,444	56.56	6,762
2004	2,024,605.33	360,096	17,018	2,007,587	57.55	34,884
2005	181,427.72	29,729	1,405	180,023	58.53	3,076
2006	1,574,938.13	235,784	11,143	1,563,795	59.52	26,273
2007	1,291,675.57	175,112	8,276	1,283,400	60.51	21,210
2008	3,009,439.71	365,015	17,250	2,992,190	61.51	48,646
2009	605,043.84	64,824	3,063	601,981	62.50	9,632
2010	416,803.74	38,704	1,829	414,975	63.50	6,535
2013	259,083.62	12,954	612	258,472	66.50	3,887
2014	4,335,920.72	154,836	7,318	4,328,603	67.50	64,127

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-S2						
NET SALVAGE PERCENT.. 0						
2015	2,381,716.21	51,040	2,412	2,379,304	68.50	34,734
2016	3,105,739.49	22,175	1,048	3,104,691	69.50	44,672
9999	11,408,879.75-	2,205,290-	104,221-	11,304,659-		212,708-
	19,257,554.46	3,722,406	175,918	19,081,636		359,040
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						53.1 1.86



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. 0						
1915	96,404.65	86,696	83,672	12,733	7.05	1,806
1920	170,170.27	150,260	145,019	25,151	8.19	3,071
1929	18,757.43	15,955	15,399	3,358	10.46	321
1930	227,024.64	192,192	185,489	41,536	10.74	3,867
1935	44,011.06	36,309	35,043	8,968	12.25	732
1939	194,100.14	156,307	150,856	43,244	13.63	3,173
1945	46,352.51	35,724	34,478	11,875	16.05	740
1955	38,593.37	26,977	26,036	12,557	21.07	596
1957	1,538,771.30	1,050,319	1,013,688	525,083	22.22	23,631
1961	11,023.25	7,143	6,894	4,129	24.64	168
1962	30,703.85	19,620	18,936	11,768	25.27	466
1965	557,193.54	340,523	328,647	228,547	27.22	8,396
1968	34,858.52	20,298	19,590	15,269	29.24	522
1969	424,751.80	243,081	234,603	190,149	29.94	6,351
1974	114,645.58	59,746	57,662	56,984	33.52	1,700
1975	1,425,030.10	727,578	702,203	722,827	34.26	21,098
1976	248,103.94	124,017	119,692	128,412	35.01	3,668
1977	181,273.32	88,668	85,576	95,697	35.76	2,676
1978	79,828.73	38,181	36,849	42,980	36.52	1,177
1979	32,791.52	15,323	14,789	18,003	37.29	483
1982	45,891.00	19,910	19,216	26,675	39.63	673
1983	444,855.74	187,920	181,366	263,490	40.43	6,517
1984	1,350,082.93	554,884	535,532	814,551	41.23	19,756
1985	807,537.09	322,668	311,414	496,123	42.03	11,804
1986	628,794.11	243,884	235,378	393,416	42.85	9,181
1987	70,622.50	26,564	25,638	44,984	43.67	1,030
1988	809,084.36	294,855	284,571	524,513	44.49	11,789
1989	2,347,848.24	827,781	798,911	1,548,937	45.32	34,178
1990	221,853.01	75,556	72,921	148,932	46.16	3,226
1992	365,315.20	115,597	111,565	253,750	47.85	5,303
1993	5,861,736.07	1,783,668	1,721,460	4,140,276	48.70	85,016
1994	240,774.66	70,306	67,854	172,921	49.56	3,489
1995	735,183.21	205,638	198,466	536,717	50.42	10,645
1996	238,455.39	63,737	61,514	176,941	51.29	3,450
1997	3,386,375.93	863,052	832,952	2,553,424	52.16	48,954
1998	1,682,880.89	407,745	393,524	1,289,357	53.04	24,309
1999	46,555.52	10,688	10,315	36,241	53.93	672
2000	960,003.60	208,321	201,056	758,948	54.81	13,847
2001	647,094.06	132,195	127,584	519,510	55.70	9,327
2002	1,109,880.61	212,464	205,054	904,827	56.60	15,986
2003	367,159.15	65,564	63,277	303,882	57.50	5,285

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. 0						
2004	368,807.66	61,063	58,933	309,875	58.41	5,305
2005	2,935,640.34	448,302	432,667	2,502,973	59.31	42,202
2006	1,128,499.84	157,505	152,012	976,488	60.23	16,213
2007	3,988,155.27	504,781	487,176	3,500,979	61.14	57,262
2008	3,797,446.90	430,744	415,721	3,381,726	62.06	54,491
2009	7,903,537.55	792,646	765,002	7,138,536	62.98	113,346
2010	3,790,797.97	329,799	318,297	3,472,501	63.91	54,334
2011	418,097.78	30,818	29,743	388,355	64.84	5,989
2012	1,446,814.51	87,431	84,382	1,362,433	65.77	20,715
2013	5,269,222.33	247,653	239,016	5,030,206	66.71	75,404
2014	4,595,281.79	154,907	149,504	4,445,778	67.64	65,727
2015	4,230,544.27	85,838	82,844	4,147,700	68.58	60,480
2016	5,550,436.63	37,243	35,944	5,514,493	69.53	79,311
9999	9,310,059.65-	1,714,118-	1,654,336-	7,655,724-		134,605-
	63,995,595.98	11,782,526	11,371,594	52,624,002		925,253
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 56.9						1.45

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-S1.5						
NET SALVAGE PERCENT.. 0						
1939	43,633.20	38,589	30,604	13,029	5.78	2,254
1955	6,600.80	5,242	4,157	2,444	10.29	238
1965	50,344.20	36,469	28,923	21,421	13.78	1,554
1968	35,388.05	24,793	19,663	15,725	14.97	1,050
1969	84,594.90	58,574	46,454	38,141	15.38	2,480
1974	17,998.20	11,659	9,247	8,751	17.61	497
1977	42,780.69	26,464	20,988	21,793	19.07	1,143
1984	95,924.37	51,953	41,203	54,721	22.92	2,387
1985	181,796.72	96,243	76,329	105,468	23.53	4,482
1986	107,241.42	55,444	43,972	63,269	24.15	2,620
1990	2,819.50	1,309	1,038	1,782	26.78	67
1992	101,561.86	44,301	35,134	66,428	28.19	2,356
1993	107,373.12	45,269	35,902	71,471	28.92	2,471
1994	55,144.27	22,433	17,791	37,353	29.66	1,259
1995	20,065.49	7,858	6,232	13,833	30.42	455
1996	39,652.88	14,909	11,824	27,829	31.20	892
1997	1,036,369.93	373,300	296,059	740,311	31.99	23,142
1998	214,395.83	73,752	58,492	155,904	32.80	4,753
1999	9,528.59	3,122	2,476	7,053	33.62	210
2000	166,165.33	51,644	40,958	125,207	34.46	3,633
2001	232,497.65	68,308	54,174	178,324	35.31	5,050
2002	199,963.03	55,270	43,834	156,129	36.18	4,315
2003	115,563.29	29,908	23,720	91,843	37.06	2,478
2004	241,065.00	58,048	46,037	195,028	37.96	5,138
2005	876,000.07	194,998	154,650	721,350	38.87	18,558
2006	3,648.90	745	591	3,058	39.79	77
2007	1,566,281.98	290,702	230,551	1,335,731	40.72	32,803
2008	677,760.00	113,050	89,658	588,102	41.66	14,117
2009	121,512.79	17,960	14,244	107,269	42.61	2,517
2010	212,804.58	27,324	21,670	191,135	43.58	4,386
2011	37,447.34	4,082	3,237	34,210	44.55	768
2012	21,649.82	1,935	1,535	20,115	45.53	442
2013	15,585.84	1,088	863	14,723	46.51	317
2015	6,304,509.71	189,135	150,001	6,154,509	48.50	126,897
9999	4,387,312.76-	704,853-	559,008-	3,828,304-		92,755-
	8,658,356.59	1,391,027	1,103,203	7,555,154		183,051

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 41.3 2.11

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 38-R3						
NET SALVAGE PERCENT.. 0						
1929	717.00	717	717			
1939	6,255.19	6,255	6,255			
1955	2,101.59	2,066	1,662	440	0.65	440
1957	173,464.98	168,353	135,462	38,003	1.12	33,931
1961	905.88	855	688	218	2.13	102
1962	3,003.00	2,815	2,265	738	2.38	310
1965	54,222.81	49,728	40,013	14,210	3.15	4,511
1968	12,368.97	11,087	8,921	3,448	3.94	875
1969	15,685.09	13,943	11,219	4,466	4.22	1,058
1970	491.96	434	349	143	4.50	32
1971	554.24	484	389	165	4.80	34
1972	597.84	517	416	182	5.12	36
1973	2,464.62	2,111	1,699	766	5.45	141
1974	12,064.87	10,223	8,226	3,839	5.80	662
1975	181,886.69	152,354	122,588	59,299	6.17	9,611
1976	57,815.01	47,819	38,477	19,338	6.57	2,943
1977	56,778.47	46,334	37,282	19,496	6.99	2,789
1978	33,180.60	26,693	21,478	11,703	7.43	1,575
1979	42,030.26	33,293	26,789	15,241	7.90	1,929
1980	365,008.55	284,323	228,774	136,235	8.40	16,218
1981	72,360.52	55,375	44,556	27,805	8.92	3,117
1982	59,525.72	44,707	35,973	23,553	9.46	2,490
1983	142,651.31	104,998	84,484	58,167	10.03	5,799
1984	250,999.93	180,853	145,520	105,480	10.62	9,932
1985	169,092.97	119,077	95,813	73,280	11.24	6,520
1986	175,607.24	120,753	97,161	78,446	11.87	6,609
1987	214,058.21	143,475	115,444	98,614	12.53	7,870
1988	211,220.01	137,794	110,873	100,347	13.21	7,596
1989	309,308.81	196,167	157,842	151,467	13.90	10,897
1990	73,517.78	45,252	36,411	37,107	14.61	2,540
1991	79,126.91	47,185	37,966	41,161	15.34	2,683
1992	87,924.09	50,718	40,809	47,115	16.08	2,930
1993	587,608.94	327,204	263,278	324,331	16.84	19,260
1994	92,616.32	49,672	39,968	52,648	17.62	2,988
1995	89,151.44	45,960	36,981	52,170	18.41	2,834
1996	94,520.19	46,737	37,606	56,914	19.21	2,963
1997	437,673.46	206,971	166,535	271,138	20.03	13,537
1998	358,768.83	161,823	130,207	228,562	20.86	10,957
1999	151,713.07	65,077	52,363	99,350	21.70	4,578
2000	479,846.43	194,971	156,879	322,967	22.56	14,316
2001	171,775.29	65,907	53,031	118,744	23.42	5,070

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 38-R3						
NET SALVAGE PERCENT.. 0						
2002	285,859.32	103,061	82,926	202,933	24.30	8,351
2003	197,099.36	66,444	53,463	143,636	25.19	5,702
2004	736,372.72	230,794	185,703	550,670	26.09	21,107
2005	332,506.60	96,251	77,446	255,061	27.00	9,447
2006	875,127.02	232,136	186,783	688,344	27.92	24,654
2007	497,195.61	119,720	96,330	400,866	28.85	13,895
2008	516,896.27	111,675	89,857	427,039	29.79	14,335
2009	2,535,512.29	485,094	390,321	2,145,191	30.73	69,808
2010	474,849.72	78,977	63,547	411,303	31.68	12,983
2011	172,262.57	24,298	19,551	152,712	32.64	4,679
2012	216,720.64	25,094	20,191	196,530	33.60	5,849
2013	570,437.46	51,488	41,429	529,008	34.57	15,303
2014	978,645.74	63,093	50,766	927,880	35.55	26,101
2015	1,176,017.52	45,488	36,601	1,139,417	36.53	31,191
2016	679,798.02	8,763	7,051	672,747	37.51	17,935
9999	3,808,091.03-	1,225,715-	986,579-	2,821,512-		123,226-
	11,767,874.92	3,787,741	3,048,755	8,719,120		380,797
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.9						3.24

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 20-L3						
NET SALVAGE PERCENT.. 0						
1988	4,249.82	3,370	93-	4,343	4.14	1,049
1992	8,806.29	6,539	181-	8,987	5.15	1,745
2002	10,523.98	6,556	181-	10,705	7.54	1,420
2003	7,550.27	4,508	125-	7,675	8.06	952
2004	1,498.38	849	23-	1,521	8.67	175
2005	38,651.31	20,562	568-	39,219	9.36	4,190
2006	17,284.31	8,538	236-	17,520	10.12	1,731
2007	9,030.61	4,091	113-	9,144	10.94	836
2008	29,418.95	12,062	333-	29,752	11.80	2,521
2009	92,082.61	33,656	931-	93,014	12.69	7,330
2010	19,205.24	6,136	170-	19,375	13.61	1,424
2013	12,166.10	2,123	59-	12,225	16.51	740
2014	270,185.46	33,773	933-	271,118	17.50	15,492
2015	4,972.70	373	10-	4,983	18.50	269
2016	7,895.56	197	5-	7,901	19.50	405
9999	14,726.81-	3,956-	109	14,836-		1,112-
	518,794.78	139,377	3,852-	522,647		39,167

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.3 7.55

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 30-S1.5						
NET SALVAGE PERCENT.. 0						
2009	14,938.00	3,600	2,980	11,958	22.77	525
2010	5,980.30	1,258	1,042	4,938	23.69	208
	20,918.30	4,858	4,022	16,896		733

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.1 3.50

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 370.00 RECEIVING WELLS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
2007	7,369.99	1,359	1,471	5,899	40.78	145
2009	92,112.20	13,467	14,574	77,538	42.69	1,816
2013	4,049.76	278	301	3,749	46.57	81
	103,531.95	15,104	16,346	87,186		2,042
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						42.7 1.97



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 40-S0						
NET SALVAGE PERCENT.. 0						
1957	12,038.26	9,706	12,038			
1967	5,140.50	3,624	5,140			
1976	56,891.00	34,590	49,493	7,398	15.68	472
1977	7,043.00	4,203	6,014	1,029	16.13	64
1978	8,408.00	4,923	7,044	1,364	16.58	82
1982	7,169.88	3,868	5,534	1,636	18.42	89
1984	1,371.62	707	1,012	360	19.37	19
1985	6,476.79	3,263	4,669	1,808	19.85	91
1986	150,338.52	73,891	105,726	44,613	20.34	2,193
1988	17,594.81	8,212	11,750	5,845	21.33	274
1992	140,883.19	58,537	83,757	57,126	23.38	2,443
1993	24,770.06	9,964	14,257	10,513	23.91	440
1994	19,130.99	7,437	10,641	8,490	24.45	347
1996	56,678.77	20,475	29,296	27,383	25.55	1,072
1997	32,695.30	11,353	16,244	16,451	26.11	630
1999	41,804.10	13,315	19,052	22,752	27.26	835
2001	19,670.79	5,680	8,127	11,544	28.45	406
2003	129,284.98	33,323	47,680	81,605	29.69	2,749
2004	170,436.90	41,203	58,954	111,483	30.33	3,676
2005	94,833.67	21,385	30,598	64,236	30.98	2,073
2006	55,301.96	11,558	16,538	38,764	31.64	1,225
2007	33,125.48	6,352	9,089	24,036	32.33	743
2008	393,641.83	68,592	98,144	295,498	33.03	8,946
2009	1,122,432.97	175,380	250,939	871,494	33.75	25,822
2010	540,134.69	74,404	106,459	433,676	34.49	12,574
2011	42,064.06	4,995	7,147	34,917	35.25	991
2012	39,573.39	3,918	5,606	33,967	36.04	942
2013	47,427.88	3,735	5,344	42,084	36.85	1,142
2014	2,707,612.58	155,688	222,763	2,484,850	37.70	65,911
2015	329,257.18	11,689	16,725	312,532	38.58	8,101
2016	801,426.24	9,817	14,047	787,379	39.51	19,929
9999	66,626.22-	8,389-	11,986-	54,640-		1,538-
	7,048,033.17	887,398	1,267,841	5,780,192		162,743
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						35.5 2.31

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2						
NET SALVAGE PERCENT.. 0						
1939	1,894.10	1,828	1,894			
1957	23,320.74	19,786	22,746	575	6.82	84
1965	84,176.50	66,163	76,060	8,116	9.63	843
1967	181,077.35	139,067	159,870	21,207	10.44	2,031
1973	951.59	673	774	178	13.18	14
1977	269,527.36	178,128	204,774	64,753	15.26	4,243
1981	4,459.50	2,719	3,126	1,334	17.56	76
1984	633,776.63	360,410	414,324	219,453	19.41	11,306
1985	483,210.35	267,911	307,988	175,222	20.05	8,739
1986	1,093,811.32	590,658	679,014	414,797	20.70	20,039
1987	201,769.29	105,951	121,800	79,969	21.37	3,742
1988	289,144.58	147,527	169,595	119,550	22.04	5,424
1989	441,320.73	218,405	251,076	190,245	22.73	8,370
1990	4,905.00	2,352	2,704	2,201	23.42	94
1991	8,543.94	3,963	4,556	3,988	24.13	165
1992	1,497,538.15	670,897	771,256	726,282	24.84	29,238
1993	3,428,248.89	1,480,249	1,701,679	1,726,570	25.57	67,523
1994	60,009.60	24,938	28,668	31,342	26.30	1,192
1995	38,064.78	15,184	17,455	20,610	27.05	762
1996	25,760.46	9,846	11,319	14,441	27.80	519
1997	20,044.11	7,318	8,413	11,631	28.57	407
1998	20,538.29	7,147	8,216	12,322	29.34	420
1999	17,201.00	5,688	6,539	10,662	30.12	354
2001	221,627.05	65,453	75,244	146,383	31.71	4,616
2002	357,657.72	99,271	114,121	243,537	32.51	7,491
2004	356,480.59	85,951	98,808	257,673	34.15	7,545
2005	1,410,237.38	314,018	360,992	1,049,245	34.98	29,996
2006	281,602.66	57,509	66,112	215,491	35.81	6,018
2007	33,806.68	6,265	7,202	26,605	36.66	726
2008	848,963.22	141,301	162,438	686,525	37.51	18,302
2009	18,282,339.31	2,697,742	3,101,296	15,181,043	38.36	395,752
2010	9,707,714.87	1,244,723	1,430,921	8,276,794	39.23	210,981
2011	18,164.37	1,978	2,274	15,890	40.10	396
2012	746,760.06	66,708	76,687	670,073	40.98	16,351
2013	2,460,303.40	171,680	197,361	2,262,942	41.86	54,060
2014	7,604,671.03	380,234	437,113	7,167,558	42.75	167,662

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2						
NET SALVAGE PERCENT.. 0						
2015	1,096,388.93	32,892	37,812	1,058,577	43.65	24,251
2016	419,828.64	4,198	4,826	415,003	44.55	9,315
9999	2,200,080.47-	404,998-	465,572-	1,734,508-		46,739-
	50,475,759.70	9,291,733	10,681,481	39,794,279		1,072,308
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						37.1 2.12

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 381.00 PLANT SEWERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
1988	30,192.33	15,670	14,768	15,424	24.05	641
2008	294,411.86	48,637	45,838	248,574	41.74	5,955
2009	4,434,866.70	648,378	611,060	3,823,807	42.69	89,571
2010	1,187,964.50	150,634	141,964	1,046,000	43.66	23,958
2011	8,717.46	938	884	7,833	44.62	176
2012	1,684.33	149	140	1,544	45.59	34
2014	440,381.98	21,667	20,420	419,962	47.54	8,834
2015	7,458.23	221	208	7,250	48.52	149
2016	45,239.42	443	418	44,821	49.51	905
9999	30,192.33-	4,150-	3,911-	26,281-		609-
	6,420,724.48	882,587	831,789	5,588,936		129,614
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						43.1 2.02

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 382.00 OUTFALL SEWER LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
1957	12,139.53	10,578	10,268	1,872	6.43	291
1975	4,984.00	3,514	3,411	1,573	14.75	107
1993	202,475.94	88,482	85,886	116,590	28.15	4,142
2004	1,695.94	408	396	1,300	37.96	34
2005	9,240.93	2,053	1,993	7,248	38.89	186
2006	201,123.34	40,868	39,669	161,454	39.84	4,053
2009	26,051.26	3,809	3,697	22,354	42.69	524
2010	27,827.93	3,529	3,426	24,402	43.66	559
2014	188,735.80	9,286	9,014	179,722	47.54	3,780
	674,274.67	162,527	157,760	516,515		13,676

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 37.8 2.03

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 20-S2.5						
NET SALVAGE PERCENT.. 0						
2010	273,149.74	87,681	72,881	200,268	13.58	14,747
	273,149.74	87,681	72,881	200,268		14,747
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					13.6	5.40

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1994	676.00	676	676			
1995	430.00	430	430			
1996	2,094.00	2,094	2,094			
1999	1,200.00	1,050	770	430	2.50	172
2000	1,847.00	1,524	1,118	729	3.50	208
2001	15,016.00	11,637	8,533	6,483	4.50	1,441
2008	3,929.23	1,670	1,225	2,704	11.50	235
2009	107,117.95	40,169	29,455	77,663	12.50	6,213
2010	20,831.92	6,770	4,965	15,867	13.50	1,175
2012	7,908.11	1,779	1,304	6,604	15.50	426
2013	18,309.85	3,204	2,350	15,960	16.50	967
2015	2,488.32	187	137	2,351	18.50	127
2016	17,826.99	446	327	17,500	19.50	897
	199,675.37	71,636	53,384	146,291		11,861
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.3 5.94

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 15-L4						
NET SALVAGE PERCENT.. 0						
1998	23,700.00	19,955	23,700			
2000	20,700.00	16,919	20,700			
2002	22,872.16	18,222	22,554	318	3.05	104
2006	73,113.90	48,401	59,907	13,207	5.07	2,605
2011	161,067.57	58,951	72,965	88,103	9.51	9,264
2012	73,865.31	22,160	27,428	46,437	10.50	4,423
2013	62,726.96	14,636	18,115	44,612	11.50	3,879
2016	2,423.80	81	100	2,323	14.50	160
	440,469.70	199,325	245,469	195,000		20,435
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.5 4.64



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 392.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
2003	5,858.64	3,164	4,208	1,651	11.50	144
2012	58,391.33	10,510	13,979	44,413	20.50	2,166
	64,249.97	13,674	18,187	46,063		2,310
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.9 3.60

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1957	638.18	638	638			
1965	2,152.54	2,153	2,153			
1975	369.03	369	369			
1992	4,302.42	4,302	4,302			
1995	39,399.49	39,399	39,399			
1998	1,699.00	1,572	1,699			
1999	18,877.58	16,518	18,878			
2001	1,716.33	1,330	1,716			
2002	14,591.33	10,579	14,591			
2005	8,276.87	4,759	7,256	1,021	8.50	120
2006	75,526.99	39,652	60,460	15,067	9.50	1,586
2007	8,466.61	4,022	6,133	2,334	10.50	222
2008	8,976.47	3,815	5,817	3,159	11.50	275
2009	378.54	142	217	162	12.50	13
2010	61,467.53	19,977	30,460	31,008	13.50	2,297
2011	7,372.47	2,027	3,091	4,281	14.50	295
2012	65,999.81	14,850	22,642	43,358	15.50	2,797
2013	16,093.74	2,816	4,294	11,800	16.50	715
2014	36,417.63	4,552	6,940	29,478	17.50	1,684
2015	56,943.11	4,271	6,512	50,431	18.50	2,726
2016	107,176.04	2,679	4,085	103,091	19.50	5,287
	536,841.71	180,422	241,652	295,190		18,017

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.4 3.36

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
1965	5,007.53	5,008	5,008			
1975	3,567.00	3,567	3,567			
1993	4,660.82	4,661	4,661			
1998	2,621.00	2,621	2,621			
1999	2,938.00	2,938	2,938			
2000	2,905.46	2,905	2,905			
2001	1,969.36	1,969	1,969			
2002	2,928.85	2,831	2,929			
2005	2,348.43	1,800	2,348			
2006	7,401.23	5,181	7,401			
2007	17,398.19	11,019	16,811	587	5.50	107
2008	62,811.98	35,594	54,303	8,509	6.50	1,309
2009	41,773.44	20,887	31,865	9,908	7.50	1,321
2010	31,269.93	13,550	20,672	10,598	8.50	1,247
2011	16,488.52	6,046	9,224	7,265	9.50	765
2012	17,016.66	5,105	7,788	9,229	10.50	879
2013	5,917.50	1,381	2,107	3,810	11.50	331
2014	36,775.07	6,129	9,350	27,425	12.50	2,194
2015	12,751.71	1,275	1,945	10,807	13.50	801
2016	64,207.29	2,140	3,265	60,942	14.50	4,203
	342,757.97	136,607	193,677	149,081		13,157

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 11.3 3.84

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 16-L2.5						
NET SALVAGE PERCENT.. 0						
1986	7,525.00	6,344	6,408	1,117	2.51	445
1992	10,000.00	7,719	7,796	2,204	3.65	604
1993	93,533.45	70,910	71,620	21,913	3.87	5,662
2002	72,784.90	46,355	46,819	25,966	5.81	4,469
2011	345,636.00	112,981	114,113	231,523	10.77	21,497
2015	3,257.24	303	306	2,951	14.51	203
9999	10,000.00-	4,592-	4,638-	5,362-		617-
	522,736.59	240,020	242,424	280,312		32,263
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.7 6.17

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	234,211.01	179,563	234,211			
2006	4,491.50	3,144	4,329	162	4.50	36
2007	1,116.47	707	974	142	5.50	26
2008	28,601.90	16,208	22,319	6,283	6.50	967
2009	526,717.63	263,359	362,660	164,058	7.50	21,874
2010	185,786.54	80,507	110,863	74,924	8.50	8,815
2011	4,370.98	1,603	2,207	2,164	9.50	228
2012	3,344.78	1,003	1,381	1,964	10.50	187
2013	263,689.84	61,527	84,726	178,964	11.50	15,562
2014	98,016.16	16,336	22,496	75,520	12.50	6,042
2016	172,002.57	5,733	7,894	164,108	14.50	11,318
	1,522,349.38	629,690	854,060	668,289		65,055
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.3 4.27

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 397.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
1994	408.00	408	408			
1995	7,339.00	7,339	7,339			
1996	2,406.00	2,406	2,406			
1997	150.00	150	150			
1999	3,638.00	3,638	3,638			
2000	1,906.00	1,906	1,906			
2001	8,406.99	8,407	8,407			
2002	30,746.63	29,722	17,424	13,323	0.50	13,323
2003	139,402.93	125,463	73,549	65,854	1.50	43,903
2004	45,714.26	38,095	22,332	23,382	2.50	9,353
2005	43,580.31	33,412	19,587	23,993	3.50	6,855
2006	20,954.98	14,668	8,599	12,356	4.50	2,746
2007	27,143.48	17,191	10,078	17,065	5.50	3,103
2008	20,048.36	11,361	6,660	13,388	6.50	2,060
2009	6,270.00	3,135	1,838	4,432	7.50	591
2010	4,161.94	1,803	1,057	3,105	8.50	365
2011	14,880.36	5,456	3,198	11,682	9.50	1,230
2012	15,424.61	4,627	2,712	12,713	10.50	1,211
2013	25,242.12	5,890	3,453	21,789	11.50	1,895
2014	2,834,123.45	472,363	276,907	2,557,216	12.50	204,577
2015	4,104.14	410	240	3,864	13.50	286
9999	29,000.00-	7,017-	4,202-	24,798-		2,596-
	3,227,051.56	780,833	467,686	2,759,366		288,902

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.6 8.95

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**PART III. EXPERIENCED NET SALVAGE**

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2012 TRANSACTION YEAR				
354.30		3,706.86		3,706.86-
354.40	88,280.55	159,226.69		159,226.69-
355.00	15,833.82	3,169.53		3,169.53-
360.10	2,352.08	460.92		460.92-
361.10	16,547.13	14,158.02		14,158.02-
363.00	18,234.63	2,579.80		2,579.80-
371.00	59,843.62	2,644.79		2,644.79-
380.00	11,121.96	120,523.16		120,523.16-
382.00		1.13		1.13-
390.00	2,359.64			
396.00	1,191.88	1,191.88		1,191.88-
397.00	519.31			
	216,284.62	307,662.78		307,662.78-



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2013 TRANSACTION YEAR				
354.30	4,675.41	1,423.61		1,423.61-
354.40	38,397.83	27,581.17		27,581.17-
355.00	11,547.79	962.70		962.70-
360.10	22,896.78	8,181.50		8,181.50-
361.10	17,050.92	34,623.98		34,623.98-
363.00	8,491.73	15,735.19		15,735.19-
364.00	5,452.35			
371.00	2,396.03	2,291.30		2,291.30-
380.00	57,064.10	6,028.22		6,028.22-
390.00	12,016.29			
391.00		.05		.05-
392.00		.10		.10-
393.00	4,791.77	240.15		240.15-
394.00	1,006.79	6.38		6.38-
396.00	185.66	2,027.27		2,027.27-
	185,973.45	99,101.62		99,101.62-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2014 TRANSACTION YEAR				
354.20		17,281.50		17,281.50-
354.30	8,419.83	.04		.04-
354.40	279,496.09	10,304.75		10,304.75-
354.70	142,282.00			
355.00	57,994.23	509.91		509.91-
360.10	12,882.20	1,577.22		1,577.22-
361.10	15,832.47	16,027.16		16,027.16-
363.00	47,729.22	26,515.13		26,515.13-
364.00	197,628.45	815.62		815.62-
371.00	81,694.15	4,325.21		4,325.21-
380.00	611,695.18	21,655.33		21,655.33-
389.10	8,491.79			
390.00	50,807.41			
391.00	14,522.98			
392.00	920.00			
393.00	39,015.82	240.08		240.08-
394.00	36,678.40			
395.00	24,152.00			
396.00	19,639.00			
397.00	16,720.00			
	1,666,601.22	99,251.95		99,251.95-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2015 TRANSACTION YEAR				
354.20		1,397.69		1,397.69-
354.30	43,759.87	4,140.75		4,140.75-
354.40	62,674.33	1,026.52		1,026.52-
354.70	2,111.56	480.36		480.36-
355.00		1,665.75		1,665.75-
360.10	19.02	3,255.59		3,255.59-
361.10	41,514.63	65,334.39		65,334.39-
361.20	12,188.26	7,496.94		7,496.94-
363.00	182,967.14	27,377.40		27,377.40-
371.00	19,187.25	4,901.57		4,901.57-
380.00	17,199.80	1,622.52		1,622.52-
390.00	5,416.12			
395.00	55,927.14			
396.00	22,514.95	4,189.54		4,189.54-
397.00	1,573.00			
	467,053.07	122,889.02		122,889.02-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2016 TRANSACTION YEAR				
354.20	.01	41.70		41.70-
354.30	571.02			
354.40	34,034.72	4,580.92		4,580.92-
355.00	57,572.55	4,933.68		4,933.68-
360.10	1,368.17	12,703.29		12,703.29-
361.10	245,871.29	7,077.34	106.90	6,970.44-
361.20		53,436.99	437.10	52,999.89-
363.00	34,819.43	11,693.51		11,693.51-
371.00	54,772.73	11,514.65		11,514.65-
380.00	147,475.80	23,916.89		23,916.89-
381.00	13,300.05	2,109.73		2,109.73-
390.00	3,416.69	276.48		276.48-
393.00	15,451.56	4,963.98	176,515.74	171,551.76
394.00	1,377.94	566.37		566.37-
395.00		830.86-	44,128.93	44,959.79
396.00	6,233.38	911.22	132,386.80	131,475.58
397.00	25,065.55	1,142.09	88,257.87	87,115.78
	641,330.89	139,037.98	441,833.34	302,795.36
TOTAL	3,177,243.25	767,943.35	441,833.34	326,110.01-

Exhibit No. 11-E  
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

HERSHEY, PENNSYLVANIA

WASTEWATER OPERATIONS  
(EXCLUDING SCRANTON WASTEWATER)

2017 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS  
RELATED TO WASTEWATER PLANT  
AS OF DECEMBER 31, 2017

*Prepared by:*



***Gannett Fleming***

*Excellence Delivered As Promised*

PENNSYLVANIA-AMERICAN WATER COMPANY

Hershey, Pennsylvania

WASTEWATER OPERATIONS  
(EXCLUDING SCRANTON WASTEWATER)

2017 DEPRECIATION STUDY  
CALCULATED ANNUAL DEPRECIATION ACCRUALS  
RELATED TO WASTEWATER PLANT  
AS OF DECEMBER 31, 2017

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC  
Camp Hill, Pennsylvania



**Gannett Fleming**

*Excellence Delivered As Promised*

April 25, 2017

Pennsylvania-American Water Company  
800 West Hersheypark Drive  
Hershey, PA 17033

Attention Mr. John R. Cox  
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant. The results of our study as of December 31, 2017, are presented in the attached report. The results of our study as of December 31, 2016, are presented in our report, "2016 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2016." The same methods, procedures and estimates are used in both studies.

The attached report sets forth a description of the methods and procedures upon which the studies were based, the estimates of survivor curves, and the calculated annual depreciation as of December 31, 2017.

Respectfully submitted,

GANNETT FLEMING VALUATION  
AND RATE CONSULTANTS, LLC

JOHN J. SPANOS  
Senior Vice President

JJS:mlw

062027.100



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**PART I. INTRODUCTION**

# **PENNSYLVANIA-AMERICAN WATER COMPANY**

## **DEPRECIATION STUDY**

### **PART I. INTRODUCTION**

#### **SCOPE**

This report sets forth the results of the depreciation study for Pennsylvania-American Water Company to determine the annual depreciation accrual rates and amounts applicable to the original cost of wastewater plant as of December 31, 2017. The rates and amounts are based on the straight line remaining life method of depreciation. This report also describes the concepts, methods and judgments which underlie the recommended annual depreciation accrual rates related to wastewater plant in service as of December 31, 2017.

Part I, Introduction, contains statements with respect to the basis of the study and the development of net original cost. Part II, Estimation of Survivor Curves, presents descriptions of the considerations and methods used in the service life study. Part III, Service Life Considerations, presents the results of the average service life analysis. Part IV, Calculation of Annual and Accrued Depreciation, describes the procedures used in the calculation of group depreciation. Part V, Results of Study, presents summaries by depreciable group of annual depreciation accrual rates and amounts, as well as composite remaining lives. Part VI, Service Life Statistics presents the statistical analysis of service life estimates, Part VII, Detailed Depreciation Calculations presents the detailed tabulations of annual depreciation and Part VIII, Experienced and Estimated Net Salvage presents the cost of removal and gross salvage recorded for the period 2013-2017.

## **BASIS OF THE STUDY**

The purpose of the depreciation study was to determine the annual depreciation accruals applicable to the original cost of wastewater plant in service as of December 31, 2017. For most accounts, the straight line remaining life method using attained ages, the book depreciation reserve and estimated survivor curves, was the basis for the calculation of annual depreciation. For certain accounts, the annual and accrued amortization amounts were based on the age of the property and the selected amortization period.

The survivor curve estimates were based on judgment which incorporated (1) analyses of historical data related to wastewater property for all wastewater systems; (2) consideration of the character, use and location of the property; (3) probable future events and management plans; and (4) a general knowledge of wastewater property lives. The use of lowa type survivor curves is a generally-accepted method of estimating average service life when the actual lives of individual property units are dispersed.

## **DEVELOPMENT OF NET ORIGINAL COST**

The original cost data used in this study were obtained from the Company's continuing property records and work order system which show in detail the original cost of the property including descriptions, locations and years of installation of property units. The net original cost was developed from the original cost data by deducting contributions in aid of construction. The development of net original cost by plant account is set forth in Table 1 on page V-4.

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## **PART II. ESTIMATION OF SURVIVOR CURVES**

## PART II. ESTIMATION OF SURVIVOR CURVES

The calculation of annual depreciation based on the straight line method requires the estimation of survivor curves and the selection of group depreciation procedures. The estimation of survivor curves is discussed below and the development of net salvage is discussed in later sections of this report.

### SURVIVOR CURVES

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages.

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life, and the frequency curve can be calculated. In Figure 1, a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 1, the remaining life at age 30 is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval. It is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

This study has incorporated the use of Iowa curves developed from a retirement rate analysis of historical retirement history. A discussion of the concepts of survivor curves and of the development of survivor curves using the retirement rate method is presented below.

### **Iowa Type Curves**

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type curves. There are four families in the Iowa system, labeled in accordance with the location of the modes of the retirements (or the portion of the frequency curve with the highest level of retirements) in relationship to the average life and the relative height of the modes. The left moded curves, presented in Figure 2, are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical moded curves, presented in Figure 3, are those in which the greatest frequency of retirement occurs at average service life. The right moded curves, presented in Figure 4, are those in which the greatest frequency occurs to the right of, or after, average service life. The origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs at the origin, or immediately after age zero. The letter designation of each family of curves (L, S, R or O) represents the location of the mode of the associated frequency curve with respect to the average service life. The numbers represent the relative heights of the modes of the frequency curves within each family. A higher number designates a higher mode curve.

The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves, which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125. These curve types have also been presented in subsequent

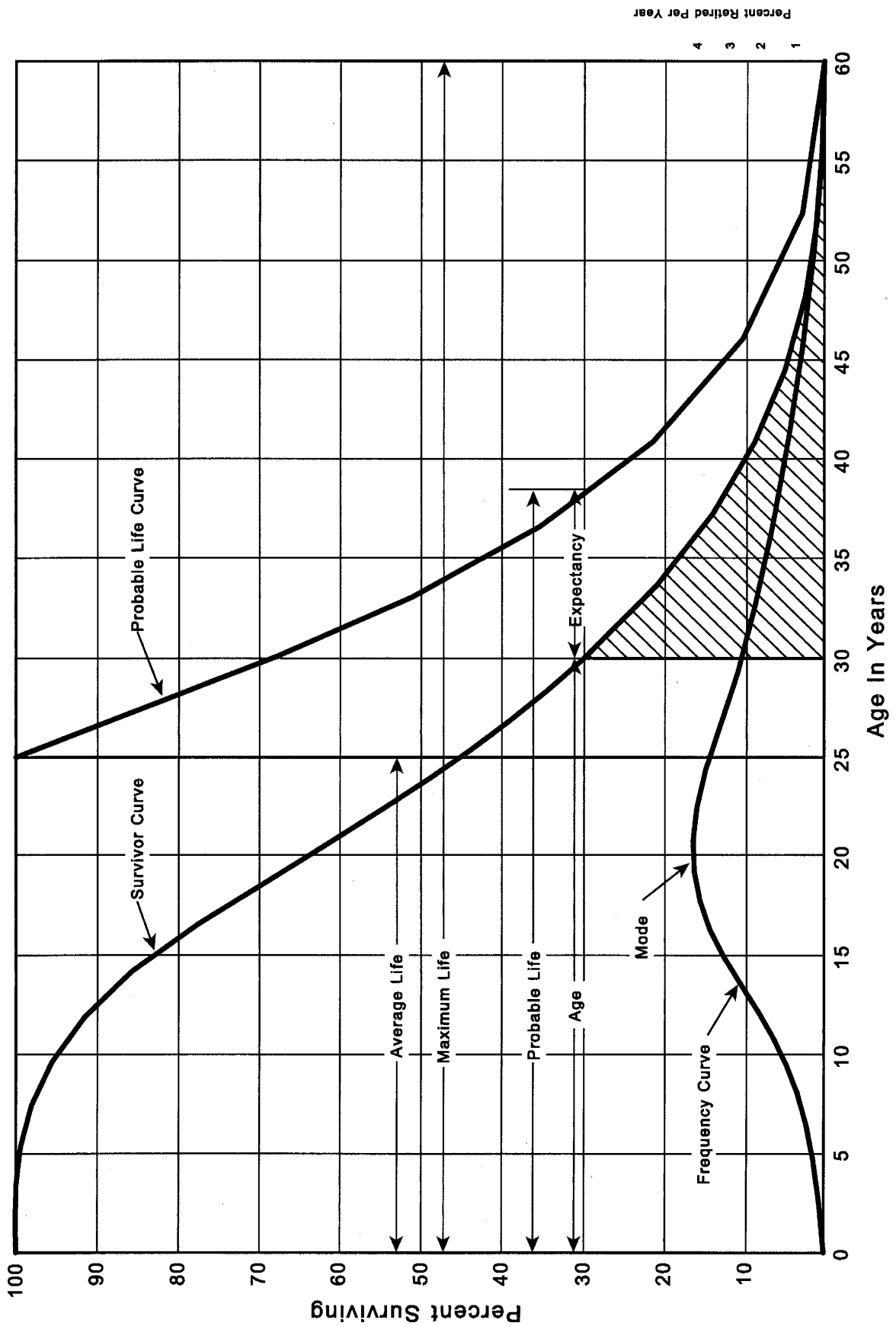


Figure 1. A Typical Survivor Curve and Derived Curves



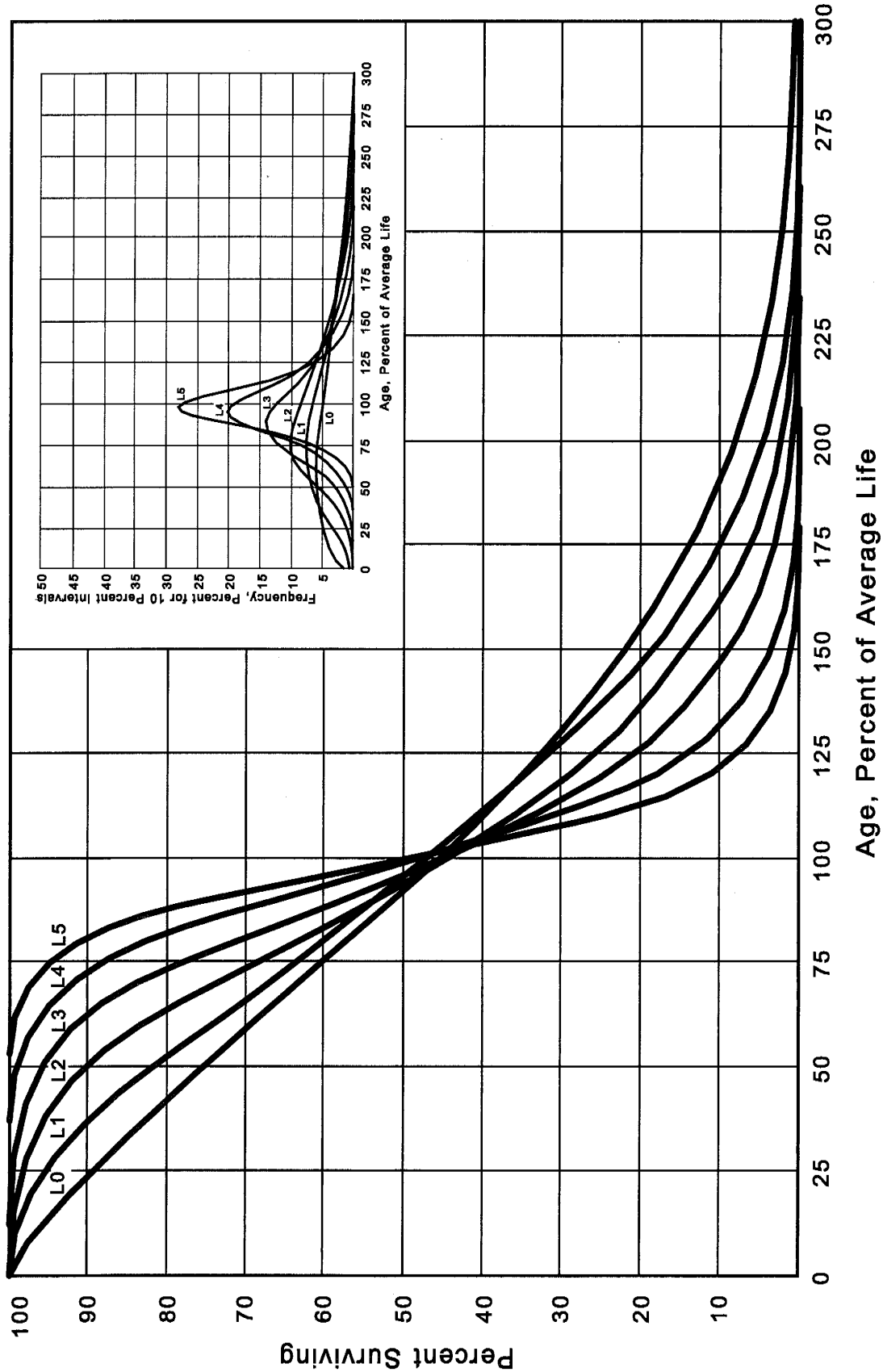


Figure 2. Left Modal or "L" Iowa Type Survivor Curves

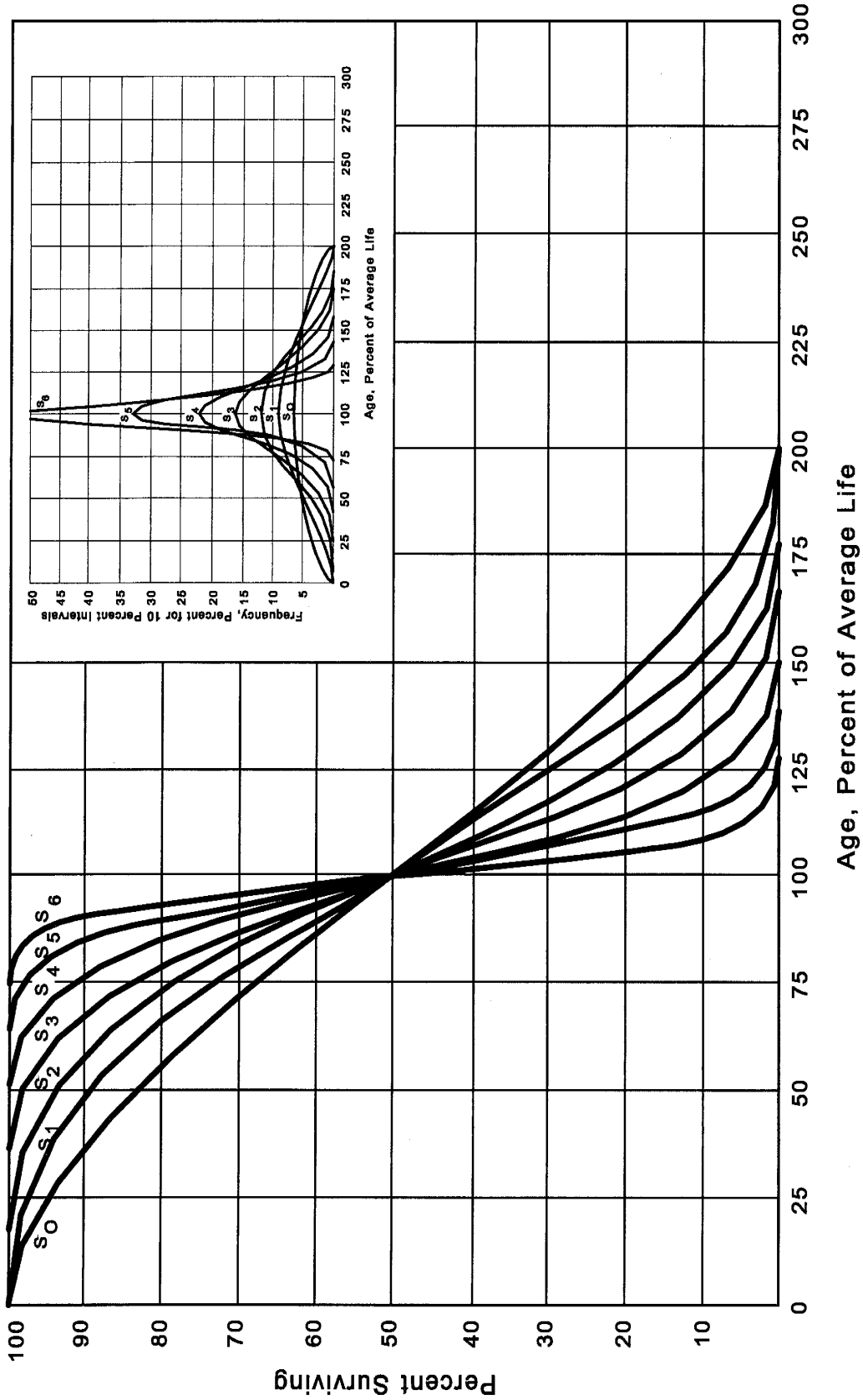


Figure 3. Symmetrical or "S" lowa Type Survivor Curves

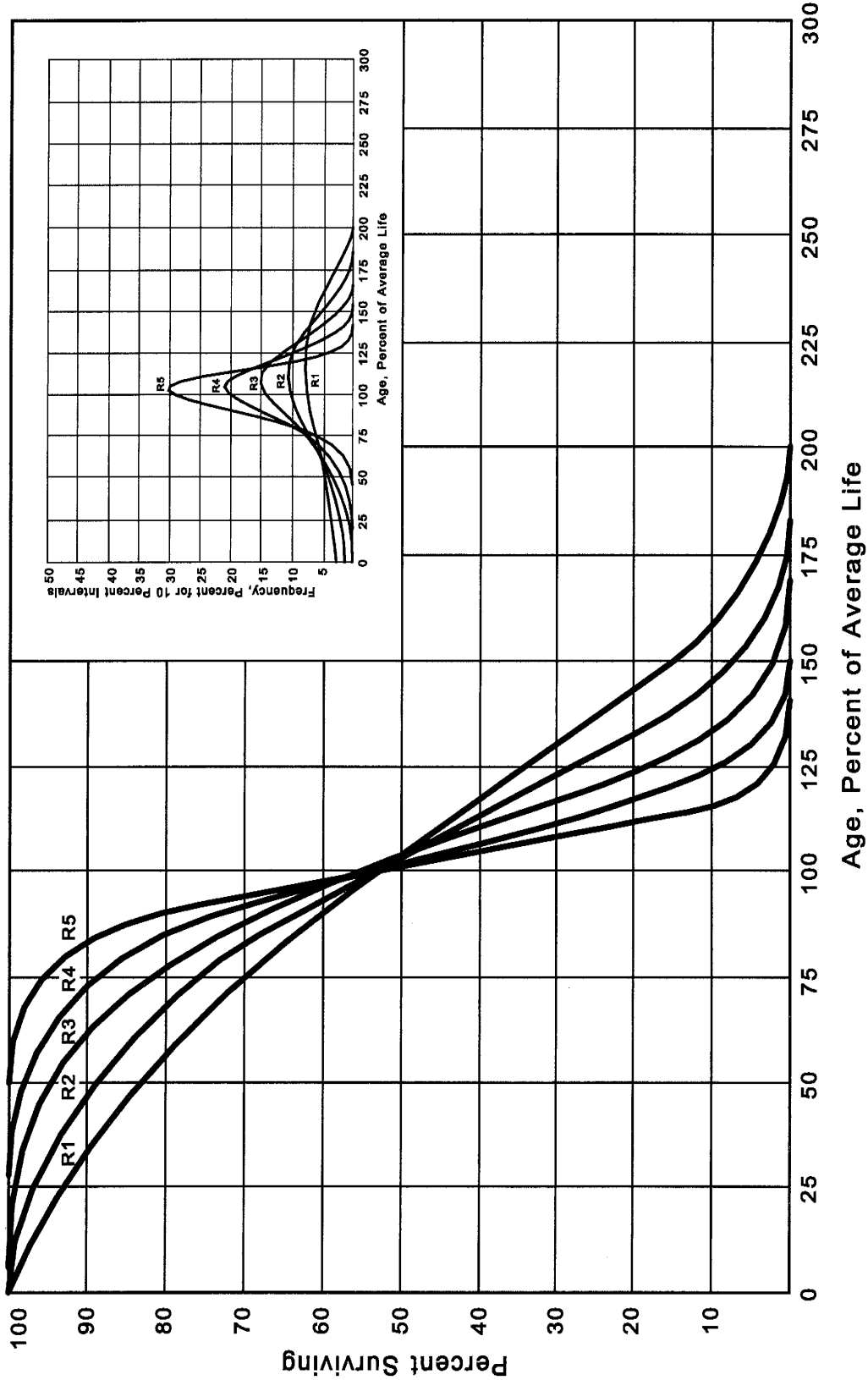


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

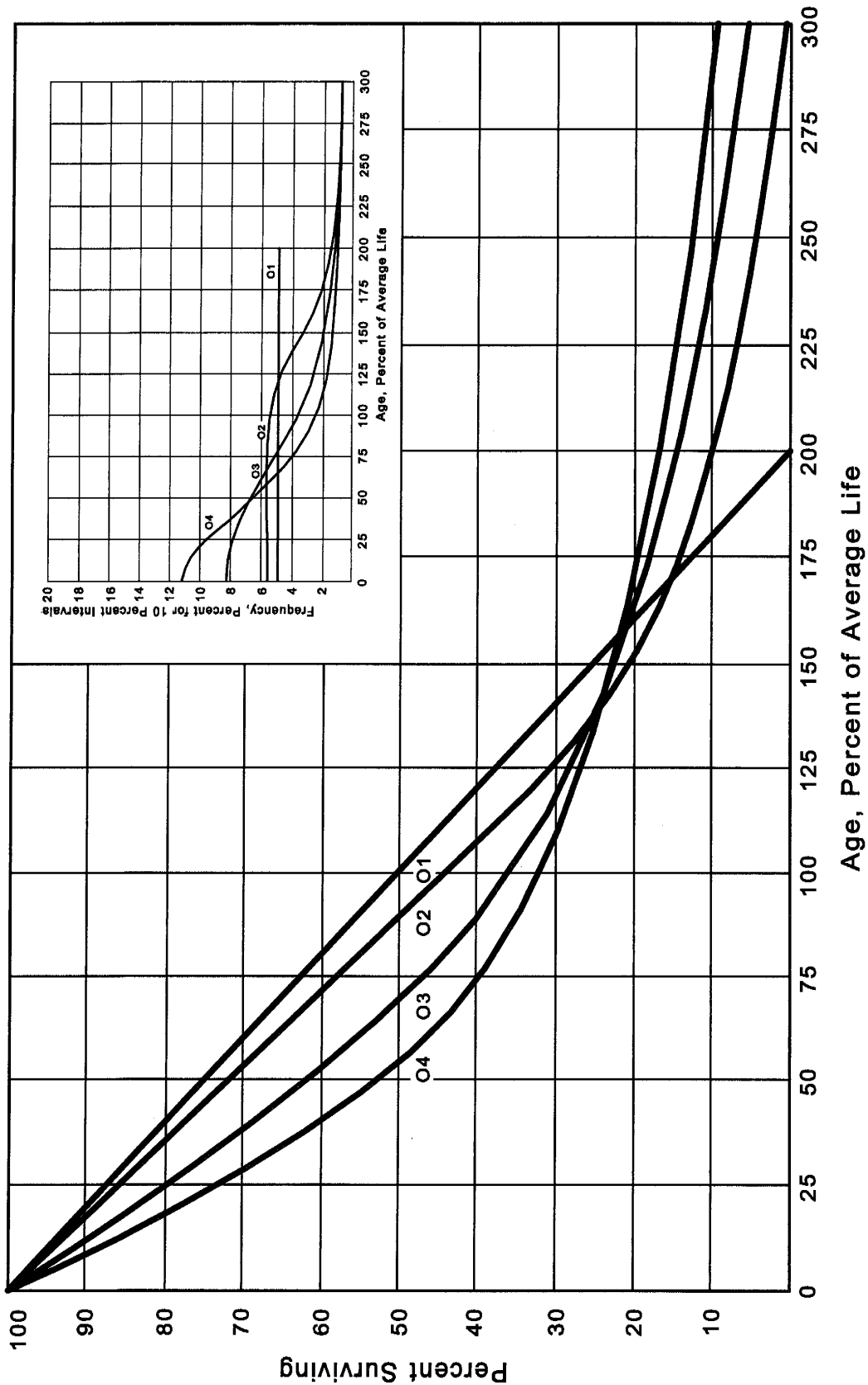


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."<sup>1</sup> In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student submitted a thesis presenting his development of the fourth family consisting of the four O type survivor curves.

### **Retirement Rate Method of Analysis**

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to property groups for which aged accounting experience is available and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements,"<sup>2</sup> "Engineering Valuation and Depreciation,"<sup>3</sup> and "Depreciation Systems."<sup>4</sup>

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginning of the age intervals during the same period. The period of observation is referred to as the experience band, and the band of years which represent the installation dates of the property exposed to retirement during the experience band is referred to as the placement band. An example of the calculations used in the development of a life table follows. The example includes schedules of annual aged property transactions, a schedule of plant exposed to retirement, a life table and illustrations of smoothing the stub survivor curve.

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<sup>1</sup>Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

<sup>2</sup>Winfrey, Robley, Statistical Analyses of Industrial Property Retirements. Iowa State College, Engineering Experiment Station, Bulletin 125. 1935.

<sup>3</sup>Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

<sup>4</sup>Wolf, Frank K. and W. Chester Fitch. Depreciation Systems. Iowa State University Press. 1994.

## **Schedules of Annual Transactions in Plant Records**

A hypothetical property group is used to illustrate the retirement rate method. This property group is observed for the experience band 2007-2016 during which there were placements (or installations) during the years 2002-2016. In order to illustrate the summation of the aged data by age interval, the data were compiled in the manner presented in Schedules 1 and 2 on pages II-11 and II-12. In Schedule 1, year placed and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, \$10,000 of the dollars invested in 2002 were retired in 2007. The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval 4½-5½ is the sum of the retirements entered on Schedule 1 immediately above the stair step line drawn on the table beginning with the 2007 retirements of 2002 installations and ending with the 2016 retirements of the 2011 installations. Thus, the total amount of 143 for age interval 4½-5½ equals the sum of:

$$10 + 12 + 13 + 11 + 13 + 13 + 15 + 17 + 19 + 20.$$

SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2007-2016  
SUMMARIZED BY AGE INTERVAL

Placement Band 2002-2016

Experience Band 2007-2016

Year Placed (1)	Retirements, Thousands of Dollars											Total During		Age Interval (13)
	2007 (2)	2008 (3)	2009 (4)	2010 (5)	2011 (6)	2012 (7)	2013 (8)	2014 (9)	2015 (10)	2016 (11)	Age Interval (12)	Age Interval (13)		
2002	10	11	12	13	14	16	23	24	25	26	26	13½-14½		
2003	11	12	13	15	16	18	20	21	22	19	44	12½-13½		
2004	11	12	13	14	16	17	19	21	22	18	64	11½-12½		
2005	8	9	10	11	11	13	14	15	16	17	83	10½-11½		
2006	9	10	11	12	13	14	16	17	19	20	93	9½-10½		
2007	4	9	10	11	12	13	14	15	16	20	105	8½-9½		
2008		5	11	12	13	14	15	16	18	20	113	7½-8½		
2009			6	12	13	15	16	17	19	19	124	6½-7½		
2010				6	13	15	16	17	19	19	131	5½-6½		
2011					7	14	16	17	19	20	143	4½-5½		
2012						8	18	20	22	23	146	3½-4½		
2013							9	20	22	25	150	2½-3½		
2014								11	23	25	151	1½-2½		
2015									11	24	153	½-1½		
2016										13	80	0-½		
<b>Total</b>	<b>53</b>	<b>68</b>	<b>86</b>	<b>106</b>	<b>128</b>	<b>157</b>	<b>196</b>	<b>231</b>	<b>273</b>	<b>308</b>	<b>1,606</b>			

**SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2007-2016**  
**SUMMARIZED BY AGE INTERVAL**

Experience Band 2007-2016 Placement Band 2002-2016

Year Placed	During Year											Total During Age Interval	Age Interval
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
2002	-	-	-	-	-	-	60 <sup>a</sup>	-	-	-	-	-	13½-14½
2003	-	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2004	-	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2005	-	-	-	-	-	-	-	(5) <sup>b</sup>	-	-	60	-	10½-11½
2006	-	-	-	-	-	-	-	6 <sup>a</sup>	-	-	-	-	9½-10½
2007	-	-	-	-	-	-	-	-	-	-	(5)	-	8½-9½
2008	-	-	-	-	-	-	-	-	-	-	6	-	7½-8½
2009	-	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2010	-	-	-	-	-	-	-	(12) <sup>b</sup>	-	-	-	-	5½-6½
2011	-	-	-	-	-	-	-	-	22 <sup>a</sup>	-	-	-	4½-5½
2012	-	-	-	-	-	-	-	(19) <sup>b</sup>	-	-	10	-	3½-4½
2013	-	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2014	-	-	-	-	-	-	-	-	-	(102) <sup>c</sup>	(121)	-	1½-2½
2015	-	-	-	-	-	-	-	-	-	-	-	-	½-1½
2016	-	-	-	-	-	-	-	-	-	-	-	-	0-½
<b>Total</b>	-	-	-	-	-	-	60	(30)	22	(102)	(50)	-	

<sup>a</sup> Transfer Affecting Exposures at Beginning of Year

<sup>b</sup> Transfer Affecting Exposures at End of Year

<sup>c</sup> Sale with Continued Use

Parentheses Denote Credit Amount.



In Schedule 2, other transactions which affect the group are recorded in a similar manner. The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are not totaled with the retirements, but are used in developing the exposures at the beginning of each age interval.

**Schedule of Plant Exposed to Retirement**

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on page II-14. The surviving plant at the beginning of each year from 2007 through 2016 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2012 are calculated in the following manner:

Exposures at age 0	= amount of addition	= \$750,000
Exposures at age ½	= \$750,000 - \$ 8,000	= \$742,000
Exposures at age 1½	= \$742,000 - \$18,000	= \$724,000
Exposures at age 2½	= \$724,000 - \$20,000 - \$19,000	= \$685,000
Exposures at age 3½	= \$685,000 - \$22,000	= \$663,000

**SCHEDULE 3. PLANT EXPOSED TO RETIREMENT**  
**JANUARY 1 OF EACH YEAR 2007-2016**  
**SUMMARIZED BY AGE INTERVAL**

Experience Band 2007-2016		Exposures, Thousands of Dollars										Placement Band 2002-2016	
Year Placed		Annual Survivors at the Beginning of the Year										Total at	
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Beginning of Age Interval	Age Interval
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
2002	255	245	234	222	209	195	239	216	192	167	167	13½-14½	
2003	279	268	256	243	228	212	194	174	153	131	323	12½-13½	
2004	307	296	284	271	257	241	224	205	184	162	531	11½-12½	
2005	338	330	321	311	300	289	276	262	242	226	823	10½-11½	
2006	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½	
2007	420 <sup>a</sup>	416	407	397	386	374	361	347	332	316	1,503	8½-9½	
2008		460 <sup>a</sup>	455	444	432	419	405	390	374	356	1,952	7½-8½	
2009			510 <sup>a</sup>	504	492	479	464	448	431	412	2,463	6½-7½	
2010				580 <sup>a</sup>	574	561	546	530	501	482	3,057	5½-6½	
2011					660 <sup>a</sup>	653	639	623	628	609	3,789	4½-5½	
2012						750 <sup>a</sup>	742	724	685	663	4,332	3½-4½	
2013							850 <sup>a</sup>	841	821	799	4,955	2½-3½	
2014								960 <sup>a</sup>	949	926	5,719	1½-2½	
2015									1,080 <sup>a</sup>	1,069	6,579	½-1½	
2016										1,220 <sup>a</sup>	7,490	0-½	
<b>Total</b>	<b>1,975</b>	<b>2,382</b>	<b>2,824</b>	<b>3,318</b>	<b>3,872</b>	<b>4,494</b>	<b>5,247</b>	<b>6,017</b>	<b>6,852</b>	<b>7,799</b>	<b>44,780</b>		

<sup>a</sup>Additions during the year

For the entire experience band 2007-2016, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval 4½-5½, is obtained by summing:

$$255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609.$$

### **Original Life Table**

The original life table, illustrated in Schedule 4 on page II-16, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e. one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

Percent surviving at age 4½	=	88.15
Exposures at age 4½	=	3,789,000
Retirements from age 4½ to 5½	=	143,000
Retirement Ratio	=	143,000 ÷ 3,789,000 = 0.0377
Survivor Ratio	=	1.000 - 0.0377 = 0.9623
Percent surviving at age 5½	=	(88.15) x (0.9623) = 84.83

The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

## SCHEDULE 4. ORIGINAL LIFE TABLE

CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 2007-2016

Placement Band 2002-2016

(Exposure and Retirement Amounts are in Thousands of Dollars)

Age at Beginning of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Beginning of Age Interval
(1)	(2)	(3)	(4)	(5)	(6)
0.0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.60
12.5	323	44	0.1362	0.8638	48.90
13.5	167	26	0.1557	0.8443	42.24
14.5					35.66
Total	<u>44,780</u>	<u>1,606</u>			

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.

Column 3 from Schedule 1, Column 12, Retirements for Each Year.

Column 4 = Column 3 Divided by Column 2.

Column 5 = 1.0000 Minus Column 4.

Column 6 = Column 5 Multiplied by Column 6 as of the Preceding Age Interval.

The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

### **Smoothing the Original Survivor Curve**

The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0.

In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group.

FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE  
 ORIGINAL AND SMOOTH SURVIVOR CURVES

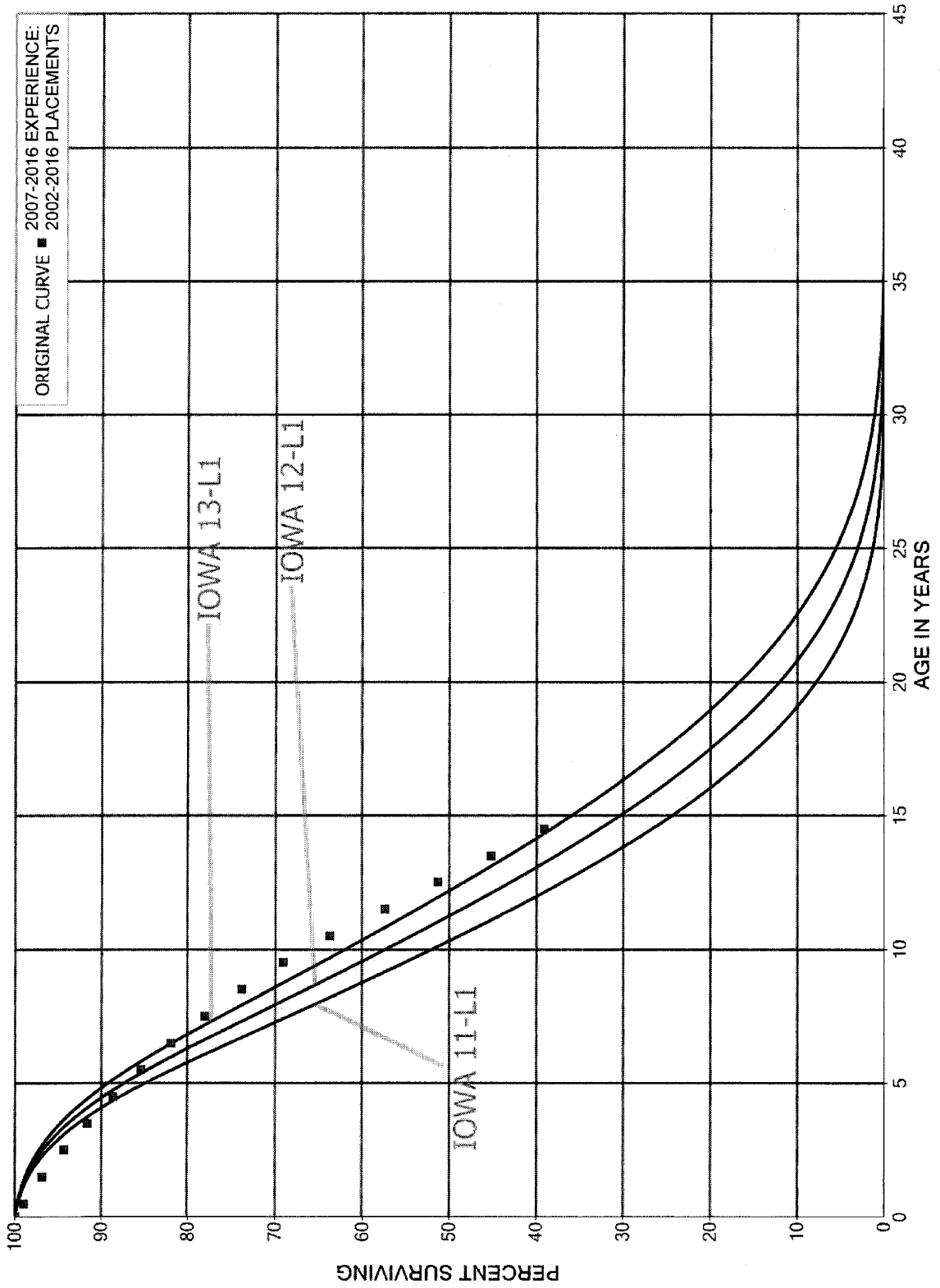


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE  
 ORIGINAL AND SMOOTH SURVIVOR CURVES

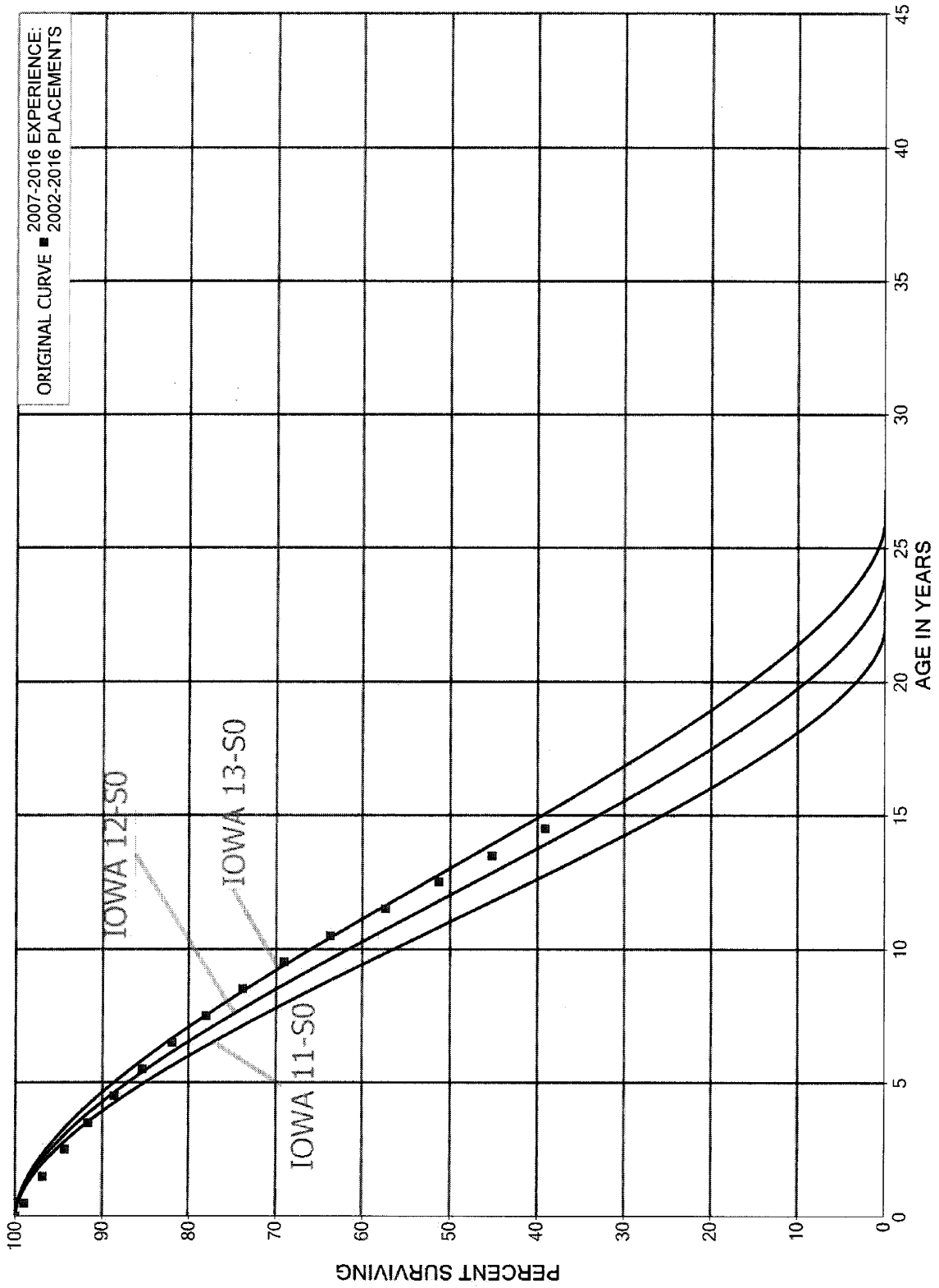


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE  
 ORIGINAL AND SMOOTH SURVIVOR CURVES

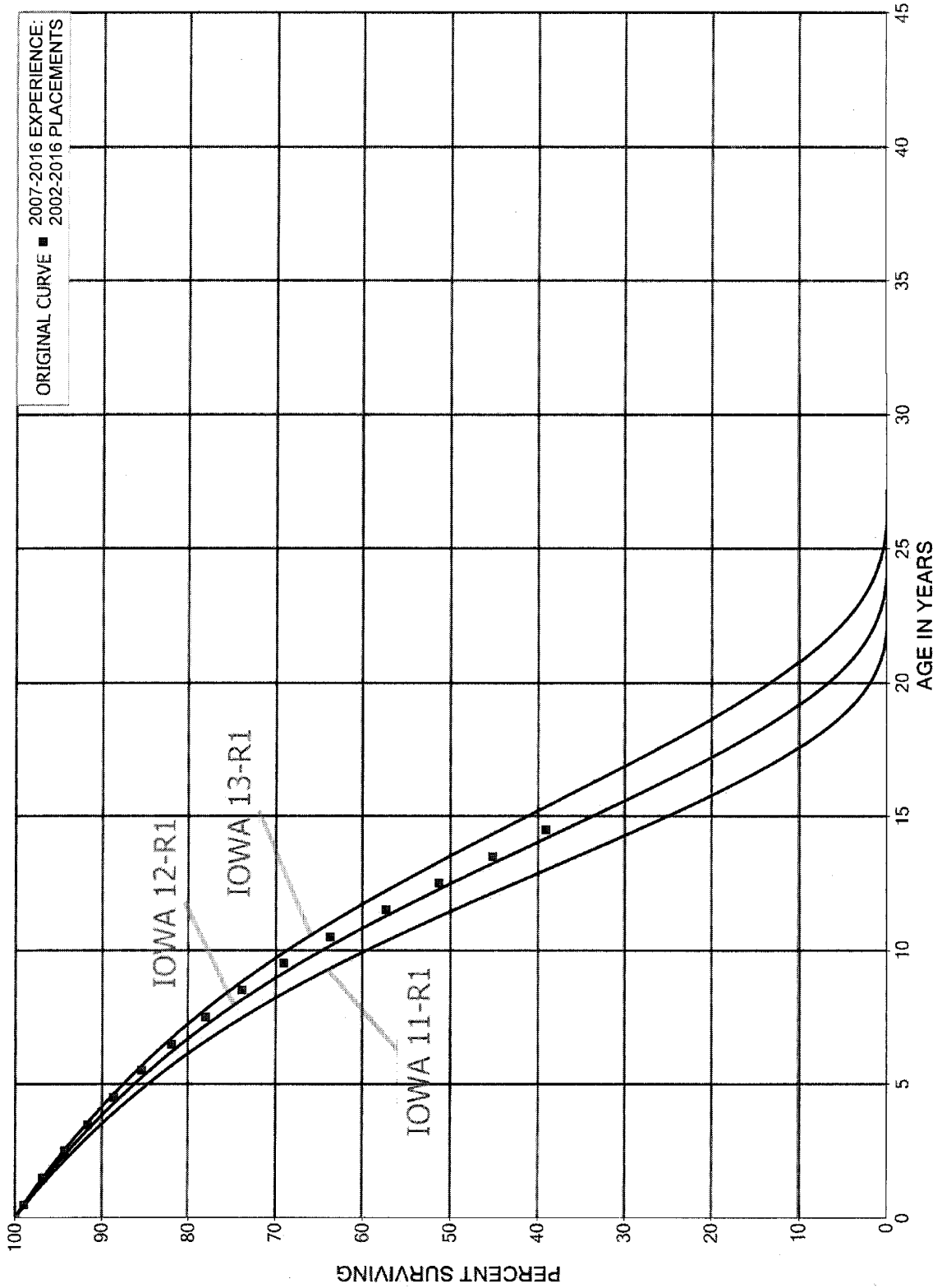
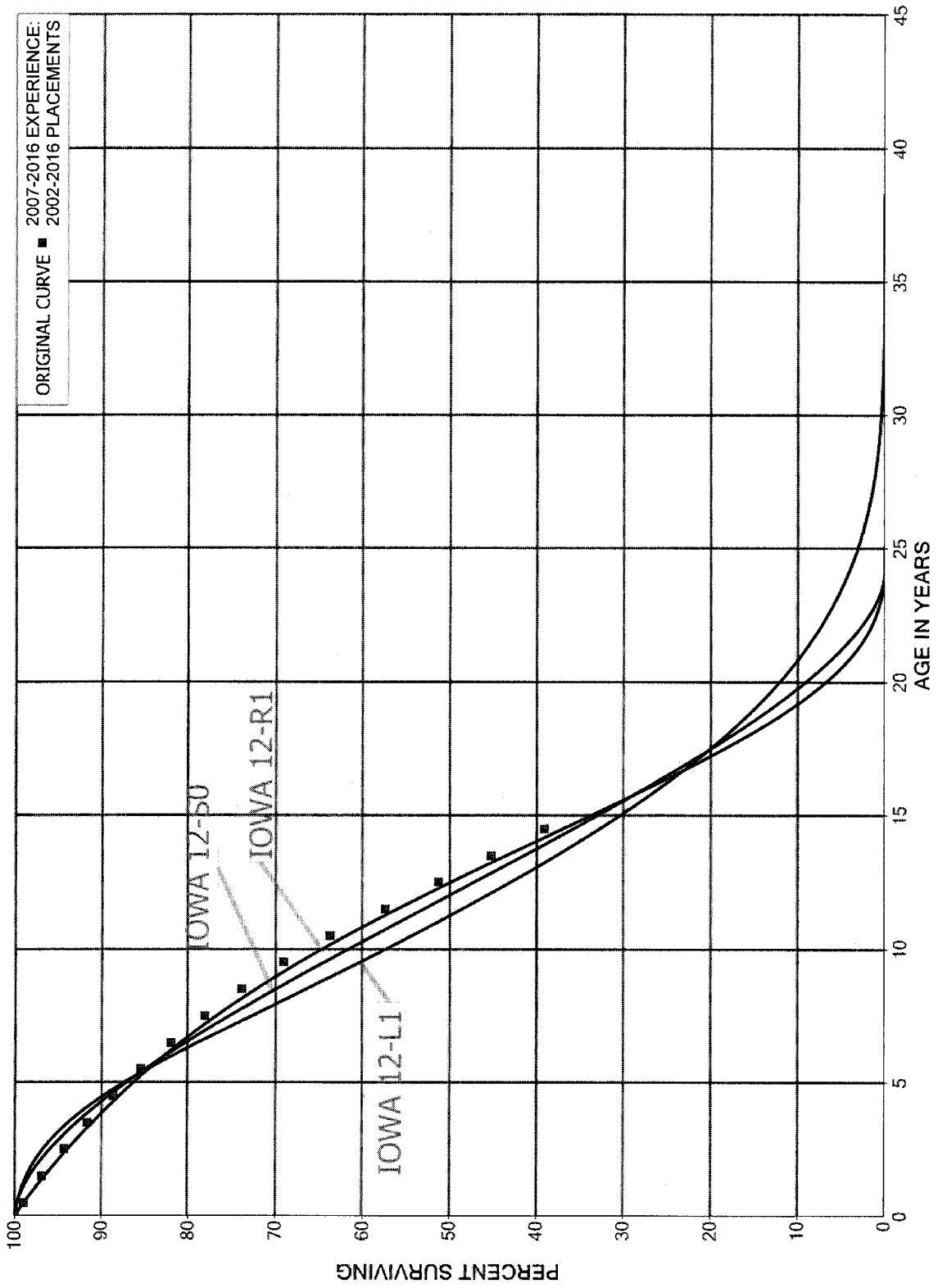




FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



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## **PART III. SERVICE LIFE CONSIDERATIONS**

## PART III. SERVICE LIFE CONSIDERATIONS

### FIELD TRIPS

In order to be familiar with the operation of the Company and observe representative portions of the plant, field trips are conducted for each study. A general understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements are obtained during field trips. This knowledge and information were incorporated in the interpretation and extrapolation of the statistical analyses.

The following is a list of the locations visited during the most recent field trips.

#### September 14, 2016

Blue Mountain Lake Wastewater Plant  
Winona Lake Lift Station  
Saw Creek Wastewater Plant  
Marcel Lake Wastewater Plant  
Pocono Wastewater Plant

#### September 6, 2016

Clarion Wastewater Plant  
Paint Elk Wastewater Plant  
Shippensville Wastewater Plant

#### September 1, 2016

Franklin Wastewater Plant  
Hamilton Ban Pump Station  
Franklin Sand Mound Facility  
Fairview North Wastewater Plant  
South Fairview Wastewater Plant

#### March 16, 2010

Coatesville Wastewater Plant  
Lehman Pike Wastewater Plant  
Winona Lake Lift Station

#### July 28, 2008

Claysville Treatment Plant

**Judgments.** The survivor curve estimates were based on judgment which considered factors including statistical analyses of retirements, Company policies and outlook as determined during discussions with management, and survivor curve estimates from previous studies of the predecessor wastewater systems, as well as other wastewater companies. For depreciable groups which consist of numerous similar items of property, the distribution of the lives of the units in the group was judged on the basis of an average survival pattern for the entire group.

Account 363, Services, is used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Aged plant accounting data have been compiled for the years through 2016. These data have been coded according to account or property group, type of transaction, year in which the transaction took place, and year in which the utility plant was placed in service. The retirements, other plant transactions and plant additions were analyzed by the retirement rate method.

The survivor curve estimate for this account is the 38-R3 and is based on the statistical indication for the period 1999-2016. The 38-R3 is a good fit of the significant portion of the original survivor curve as set forth on page VI-26, is consistent with management outlook for a continuation of the historical experience and is within the typical service life range of 35 to 50 years for services.

The amortization periods selected for general plant Accounts 390, 392, 393, 394, 396 and 397 are discussed in the section, "Amortization of General Plant Accounts."

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**PART IV. CALCULATION OF ANNUAL AND  
ACCRUED DEPRECIATION**

## **PART IV. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION**

### **BOOK RESERVE**

The book reserve as of December 31, 2016, is the result of a bringforward of the book reserves established by the Commission for all wastewater systems. The projected book reserve as of December 31, 2017, is a bringforward of the December 31, 2016 book reserve based on projected accruals, retirements, cost of removal, salvage and other credits.

### **GROUP DEPRECIATION PROCEDURES**

A group procedure for depreciation is appropriate when considering more than a single item of property. Normally the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group. In the average service life procedure, the rate of annual depreciation is based on the average life or average remaining life of the group, and this rate is applied to the surviving balances of the group's cost. A characteristic of this procedure is that the cost of plant retired prior to average life is not fully recouped at the time of retirement, whereas the cost of plant retired subsequent to average life is more than fully recouped. Over the entire life cycle, the portion of cost not recouped prior to average life is balanced by the cost recouped subsequent to average life.

### **Single Unit of Property**

The calculation of straight line depreciation for a single unit of property is straightforward. For example, if a \$1,000 unit of property attains an age of four years and has a life expectancy of six years, the annual accrual over the total life is:

$$\frac{\$1,000}{(4 + 6)} = \$100 \text{ per year.}$$

The accrued depreciation is:

$$\$1,000 \left( 1 - \frac{6}{10} \right) = \$400.$$

### **Remaining Life Annual Accruals**

For the purpose of calculating remaining life accruals as of December 31, 2017, the depreciation reserve for each plant account is allocated among vintages in proportion to the calculated accrued depreciation for the account. Explanations of remaining life accruals and calculated accrued depreciation follow. The detailed calculations as of December 31, 2017, are set forth in the Results of Study section of the report.

### **Average Service Life Procedure**

In the average service life procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the average remaining life of the vintage. The average remaining life is a directly weighted average derived from the estimated future survivor curve in accordance with the average service life procedure.

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which would not be allocated to expense through future depreciation accruals if current forecasts of life characteristics are used as the basis for such accruals. The accrued depreciation calculation consists

of applying an appropriate ratio to the surviving original cost of each vintage of each account based upon the attained age and service life. The straight line accrued depreciation ratios are calculated as follows for the average service life procedure:

$$\text{Ratio} = 1 - \frac{\text{Average Remaining Life}}{\text{Average Service Life}}$$

## **AMORTIZATION OF GENERAL PLANT ACCOUNTS**

In order to use a more efficient and cost effective accounting process for equipment recorded in general plant Accounts 390, 392, 393, 394, 396 and 397; amounts capitalized in these accounts are amortized rather than depreciated. Amortization as defined in the Uniform System of Accounts is the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized.

The primary reasons for the amortization of certain general plant accounts is that the effort required to unitize additions, periodically inventory equipment and determine amounts to be retired for equipment recorded in these accounts is disproportionate to the original cost of the equipment when compared to other wastewater plant accounts.

Accounting for such equipment using an amortization concept consists of capitalization of amounts to these accounts based on the same criteria as used previously under depreciation accounting, amortization of the asset over a fixed period, retirement of the equipment at the end of the amortization period and recognition of any net salvage related to disposition of equipment in these accounts as a gain or loss. For equipment in these accounts that was placed in service prior to implementation of amortization accounting, the net book value by vintage amortized over the remaining amortization



period specified for each account and the original cost will be retired at the end of this period.

The amortization periods selected for each account or subaccount are based on a review of the existing depreciation rates for the accounts, typical service lives used for each type of equipment and a consideration of the period during which it is anticipated that most of the benefit of the equipment will be realized. The amortization periods are as follows:

<u>Account Number</u>	<u>Description</u>	<u>Amortization Period, Years</u>
390	Office Furniture and Equipment	20
392	Stores Equipment	25
393	Tools, Shop and Garage Equipment	20
394	Laboratory Equipment	15
396	Communication Equipment	15
397	Miscellaneous Equipment	15

## **NET SALVAGE**

Experienced net salvage is incorporated in the results of the study as it was reported on the Company's books and records for the period January 1, 2013 through December 31, 2016, and estimated for the period January 1, 2017 through December 31, 2017. The calculation of the amortization is shown in Table 5 on page V-8. The amounts of salvage and removal cost by account for each year are set forth in the section beginning on page VIII-2.

Net salvage is presented in this manner to determine the amount of net salvage to be amortized to the cost of service for ratemaking purposes. In order to be consistent with this manner of recognizing net salvage, no adjustments for net salvage were made to the annual depreciation calculated for the individual accounts.

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**PART V. RESULTS OF STUDY**

## **PART V. RESULTS OF STUDY**

### **DESCRIPTION OF SUMMARY TABULATIONS**

Table 1 presents the development of the net original cost used in the study. The results of the depreciation study are summarized in Table 2 which sets forth, by depreciable group, the estimated survivor curve, calculated annual accruals and book reserve related to net original cost and the annual amortization of net salvage. Table 3 presents the bringforward to December 31, 2017 of the book reserve as of December 31, 2016. Table 4 sets forth the calculation of estimated depreciation accruals for the twelve months ended December 31, 2017. Table 5 presents the amortization of experienced and estimated net salvage, by account, based on the five-year period, 2013-2017. The total amortization amount is incorporated in the total annual accrual in Table 2.

### **DESCRIPTION OF DETAILED TABULATIONS**

Supporting statistical data for the estimates of average service lives and survivor curves, the annual depreciation calculations, and salvage and cost of removal for the years 2013-2017 are presented in three sections.

The section beginning on page VI-2 sets forth, for each depreciable group analyzed by the retirement rate method, a chart depicting the original and estimated survivor curves followed by a tabular presentation of the original life table plotted on the chart. A cumulative summary, by year installed, for utility plant and the supporting data for the original cost depreciation calculations are presented in the section beginning on page VII-3. The tabulations of experienced and estimated net salvage, by year and account for the five-year period 2013-2017, are presented in the section beginning on page VIII-2.

In the first section, the survivor curves estimated for the depreciable groups are shown as dark smooth curves on the charts. Each smooth survivor curve is denoted by a numeral followed by the type curve designation. The numeral used is the average life derived from the entire curve from 100 percent to zero percent surviving. In cases where only a segment of the estimated curve is used in the depreciation calculation, the numeral used for identification purposes is not a designation of the average life of the group. The titles of the charts indicate the group, the symbol used to plot the points of the original life table, and the experience and placement bands of the life tables which were plotted. The experience band indicates the range of years for which the retirements were used to develop the stub survivor curve. The placements indicate, for the related experience band, the range of years of installations which appear in the experience.

The tables of the calculated annual depreciation related to net original cost are presented in account sequence in the second section and indicate the estimated average survivor curves used in the calculations. The tables set forth, for each installation year, the original cost, calculated accrued depreciation, allocated book reserve, remaining life expectancy, and the calculated annual accrual.

Detailed tabulations setting forth the cost of removal, gross salvage and net salvage amounts, by account and year, are presented in the third section. The net salvage amounts, by account and year, are carried forward to Table 5, which presents the five-year amortization of net salvage.



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2017

(1) DEPRECIABLE GROUP	(2) ORIGINAL COST AS OF DECEMBER 31, 2017	(3) CUSTOMER ADVANCES	(4) CONTRIBUTIONS IN AID OF CONSTRUCTION	(5) EXCLUDED PROPERTY	(6) NET ORIGINAL COST AS OF DECEMBER 31, 2017
<b>DEPRECIABLE PLANT</b>					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	3,546,056.86				3,546,056.86
354.30 STRUCTURES AND IMPROVEMENTS - SPP	18,252,141.90		2,734,528.70		15,517,613.20
354.40 STRUCTURES AND IMPROVEMENTS - TDP	50,958,423.67		1,853,012.73		49,105,410.94
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	2,135,369.53				2,135,369.53
355.00 POWER GENERATING EQUIPMENT	5,663,040.73		144,517.16		5,518,523.57
360.10 COLLECTION SEWERS - FORCE MAINS	32,690,825.21	199,528.14	11,251,126.61		21,240,170.46
361.10 COLLECTION SEWERS - GRAVITY MAINS	84,524,913.63	143,423.53	9,539,259.12		74,842,230.98
361.20 MANHOLES	15,066,358.35		4,387,312.76		10,679,045.59
363.00 SERVICES	16,192,764.95	70,197.45	3,737,893.58		12,384,673.92
364.00 FLOW MEASURING DEVICES	533,521.59		14,726.81		518,794.78
365.00 FLOW MEASURING INSTALLATIONS	20,918.30				20,918.30
370.00 RECEIVING WELLS	103,531.95				103,531.95
371.00 PUMPING EQUIPMENT	8,942,749.39		66,626.22		8,876,123.17
380.00 TREATMENT EQUIPMENT	53,698,988.17		2,200,080.47		51,498,907.70
381.00 PLANT SEWERS	6,450,916.81		30,192.33		6,420,724.48
382.00 OUTFALL SEWER LINES	674,274.67				674,274.67
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	322,149.74				322,149.74
390.00 OFFICE FURNITURE AND EQUIPMENT	196,475.37				196,475.37
391.00 TRANSPORTATION EQUIPMENT	632,469.70				632,469.70
392.00 STORES EQUIPMENT	64,249.97				64,249.97
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	523,481.05				523,481.05
394.00 LABORATORY EQUIPMENT	316,159.95				316,159.95
395.00 POWER OPERATED EQUIPMENT	532,736.59		10,000.00		522,736.59
396.00 COMMUNICATION EQUIPMENT	1,522,349.38				1,522,349.38
397.00 MISCELLANEOUS EQUIPMENT	3,201,050.94		29,000.00		3,172,050.94
<b>TOTAL DEPRECIABLE PLANT</b>	<b>306,765,918.40</b>	<b>413,149.12</b>	<b>35,998,276.49</b>	<b>0.00</b>	<b>270,354,492.79</b>
<b>NONDEPRECIABLE PLANT</b>					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,677,525.60		125,000.00		1,552,525.60
<b>TOTAL NONDEPRECIABLE PLANT</b>	<b>3,077,708.65</b>	<b>0.00</b>	<b>125,000.00</b>	<b>0.00</b>	<b>2,952,708.65</b>
<b>TOTAL WASTEWATER PLANT IN SERVICE</b>	<b>309,843,627.05</b>	<b>413,149.12</b>	<b>36,123,276.49</b>	<b>0.00</b>	<b>273,307,201.44</b>

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND  
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2017

	(1) DEPRECIABLE GROUP	(2) SURVIVOR CURVE	(3) ORIGINAL COST AS OF DECEMBER 31, 2017	(4) BOOK RESERVE	(5) FUTURE ACCRUALS	(6) CALCULATED ANNUAL ACCRUAL AMOUNT	(7)=(6)/(3)	(8) COMPOSITE REMAINING LIFE
<b>DEPRECIABLE PLANT</b>								
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	3,546,056.86	99,386	3,446,671	78,975	2.23	43.6
354.30	STRUCTURES AND IMPROVEMENTS - SPP	50-R2.5	15,517,613.20	4,368,896	11,148,718	252,897	1.63	44.1
354.40	STRUCTURES AND IMPROVEMENTS - TDP	65-R2	49,105,410.94	10,681,129	38,424,282	689,272	1.40	55.7
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	2,135,369.53	1,330,906	804,464	24,916	1.17	32.3
355.00	POWER GENERATING EQUIPMENT	35-R2.5	5,518,523.57	2,656,734	2,861,789	95,031	1.72	30.1
360.10	COLLECTION SEWERS - FORCE MAINS	70-S2	21,240,170.46	557,783	20,682,387	388,187	1.83	53.3
361.10	COLLECTION SEWERS - GRAVITY MAINS	70-R2.5	74,842,230.98	11,748,979	63,093,252	1,091,352	1.46	57.8
361.20	MANHOLES	50-S1.5	10,679,045.59	1,310,372	9,368,674	225,791	2.11	41.5
363.00	SERVICES	38-R3	12,384,673.92	3,429,457	8,955,217	391,707	3.16	22.9
364.00	FLOW MEASURING DEVICES	20-L3	518,794.78	35,480	483,315	38,060	7.34	12.7
365.00	FLOW MEASURING INSTALLATIONS	30-S1.5	20,918.30	4,754	16,164	731	3.49	22.1
370.00	RECEIVING WELLS	50-R3	103,531.95	18,386	85,146	2,039	1.97	41.8
371.00	PUMPING EQUIPMENT	40-S0	8,876,123.17	1,456,901	7,419,222	207,584	2.34	35.7
380.00	TREATMENT EQUIPMENT	45-R2	51,498,907.70	11,729,038	39,769,870	1,090,834	2.12	36.5
381.00	PLANT SEWERS	50-R3	6,420,724.48	961,910	5,458,815	129,460	2.02	42.2
382.00	OUTFALL SEWER LINES	50-R3	674,274.67	171,448	502,827	13,619	2.02	36.9
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT	20-S2.5	322,149.74	88,954	233,195	17,115	5.31	13.6
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	196,475.37	62,005	134,470	11,941	6.08	11.3
391.00	TRANSPORTATION EQUIPMENT	15-L4	632,469.70	270,361	362,108	33,802	5.34	10.7
392.00	STORES EQUIPMENT	25-SQ	64,249.97	20,500	43,750	2,313	3.60	18.9
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	523,481.05	178,389	345,092	23,290	4.45	14.8
394.00	LABORATORY EQUIPMENT	15-SQ	316,159.95	179,845	136,315	13,374	4.23	10.2
395.00	POWER OPERATED EQUIPMENT	16-L2.5	522,736.59	265,685	257,051	31,779	6.08	8.1
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,522,349.38	894,251	628,098	68,774	4.52	9.1
397.00	MISCELLANEOUS EQUIPMENT	15-SQ	3,172,050.94	681,622	2,490,429	274,244	8.65	9.1
	<b>TOTAL DEPRECIABLE PLANT</b>		<b>270,354,492.79</b>	<b>53,203,171</b>	<b>217,151,321</b>	<b>5,197,087</b>	<b>1.92</b>	
	<b>AMORTIZATION OF NET SALVAGE</b>					<b>48,878</b>		
	<b>NONDEPRECIABLE PLANT</b>							
352.10	FRANCHISES		221,139.78					
353.20	LAND AND LAND RIGHTS - COLLECTION		1,093,483.20					
353.30	LAND AND LAND RIGHTS - SPP		85,560.07					
353.40	LAND AND LAND RIGHTS - TDP		1,552,525.60					
	<b>TOTAL NONDEPRECIABLE PLANT</b>		<b>2,952,708.65</b>					
	<b>TOTAL WASTEWATER PLANT IN SERVICE</b>		<b>273,307,201.44</b>	<b>53,203,171</b>	<b>217,151,321</b>	<b>5,245,965</b>		

**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**TABLE 3. BRINGFORWARD TO DECEMBER 31, 2017, OF BOOK RESERVE AS OF DECEMBER 31, 2016**

ACCOUNT (1)	BOOK RESERVE BALANCE AS OF 12/31/2016 (2)	+	PROJECTED DEPRECIATION ACCRUALS (3)	-	PROJECTED RETIREMENTS (4)	+	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2017 (8)
354.20	49,350		50,036										99,386
354.30	4,146,488		252,568		26,000		4,160						4,368,896
354.40	9,948,199		732,930										10,681,129
354.70	1,306,466		24,840		400								1,330,906
355.00	2,652,039		78,135		68,000		5,440						2,656,734
360.10	175,918		381,865										557,783
361.10	11,371,594		1,033,997		465,682		190,930						11,748,979
361.20	1,103,203		216,109		1,500		7,500		60				1,310,372
363.00	3,048,755		408,051		21,201		6,148						3,429,457
364.00	(3,852)		39,332										35,480
365.00	4,022		732										4,754
370.00	16,346		2,040										18,386
371.00	1,267,841		189,060										1,456,901
380.00	10,681,481		1,115,680		56,300		11,823						11,729,038
381.00	831,789		130,121										961,910
382.00	157,760		13,688										171,448
389.10	72,881		16,073										88,954
390.00	53,384		11,821		3,200								62,005
391.00	245,469		24,892										270,361
392.00	18,187		2,313										20,500
393.00	241,652		(16,401)		46,862								178,389
394.00	193,677		12,766		26,598								179,845
395.00	242,424		23,261										265,685
396.00	854,060		40,191										894,251
397.00	467,686		268,937		55,001								681,622
<b>TOTAL</b>	<b>49,146,818</b>		<b>5,053,037</b>		<b>770,743</b>		<b>226,001</b>		<b>60</b>		<b>0</b>		<b>53,203,171</b>

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2017

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2016 (2)	NET ORIGINAL COST AS OF 12/31/2017 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)=[(2)+(3)]/2*(4)	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.20	479,296.86	3,546,056.86	2.30	46,292	3,744	50,036
354.30	15,434,763.20	15,517,613.20	1.62	250,714	1,854	252,568
354.40	49,105,410.94	49,105,410.94	1.41	692,386	40,544	732,930
354.70	2,130,769.53	2,135,369.53	1.16	24,744	96	24,840
355.00	4,736,523.57	5,518,523.57	1.48	75,887	2,248	78,135
360.10	19,257,554.46	21,240,170.46	1.86	376,629	5,236	381,865
361.10	63,995,595.98	74,842,230.98	1.45	1,006,574	27,423	1,033,997
361.20	8,658,356.59	10,679,045.59	2.11	204,010	12,099	216,109
363.00	11,767,874.92	12,384,673.92	3.24	391,271	16,780	408,051
364.00	518,794.78	518,794.78	7.55	39,169	163	39,332
365.00	20,918.30	20,918.30	3.50	732		732
370.00	103,531.95	103,531.95	1.97	2,040		2,040
371.00	7,048,033.17	8,876,123.17	2.31	183,924	5,136	189,060
380.00	50,475,759.70	51,498,907.70	2.12	1,080,931	34,749	1,115,680
381.00	6,420,724.48	6,420,724.48	2.02	129,699	422	130,121
382.00	674,274.67	674,274.67	2.03	13,688	0	13,688
389.10	273,149.74	322,149.74	5.40	16,073		16,073
390.00	199,675.37	196,475.37	5.94	11,766	55	11,821
391.00	440,469.70	632,469.70	4.64	24,892		24,892
392.00	64,249.97	64,249.97	3.60	2,313		2,313
393.00	536,841.71	523,481.05	3.36	17,813	(34,214)	(16,401)
394.00	342,757.97	316,159.95	3.84	12,651	115	12,766
395.00	522,736.59	522,736.59	6.17	32,253	(8,992)	23,261
396.00	1,522,349.38	1,522,349.38	4.27	65,004	(24,813)	40,191
397.00	3,227,051.56	3,172,050.94	8.95	286,360	(17,423)	268,937
TOTAL	247,957,465.09	270,354,492.79		4,987,815	65,222	5,053,037



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

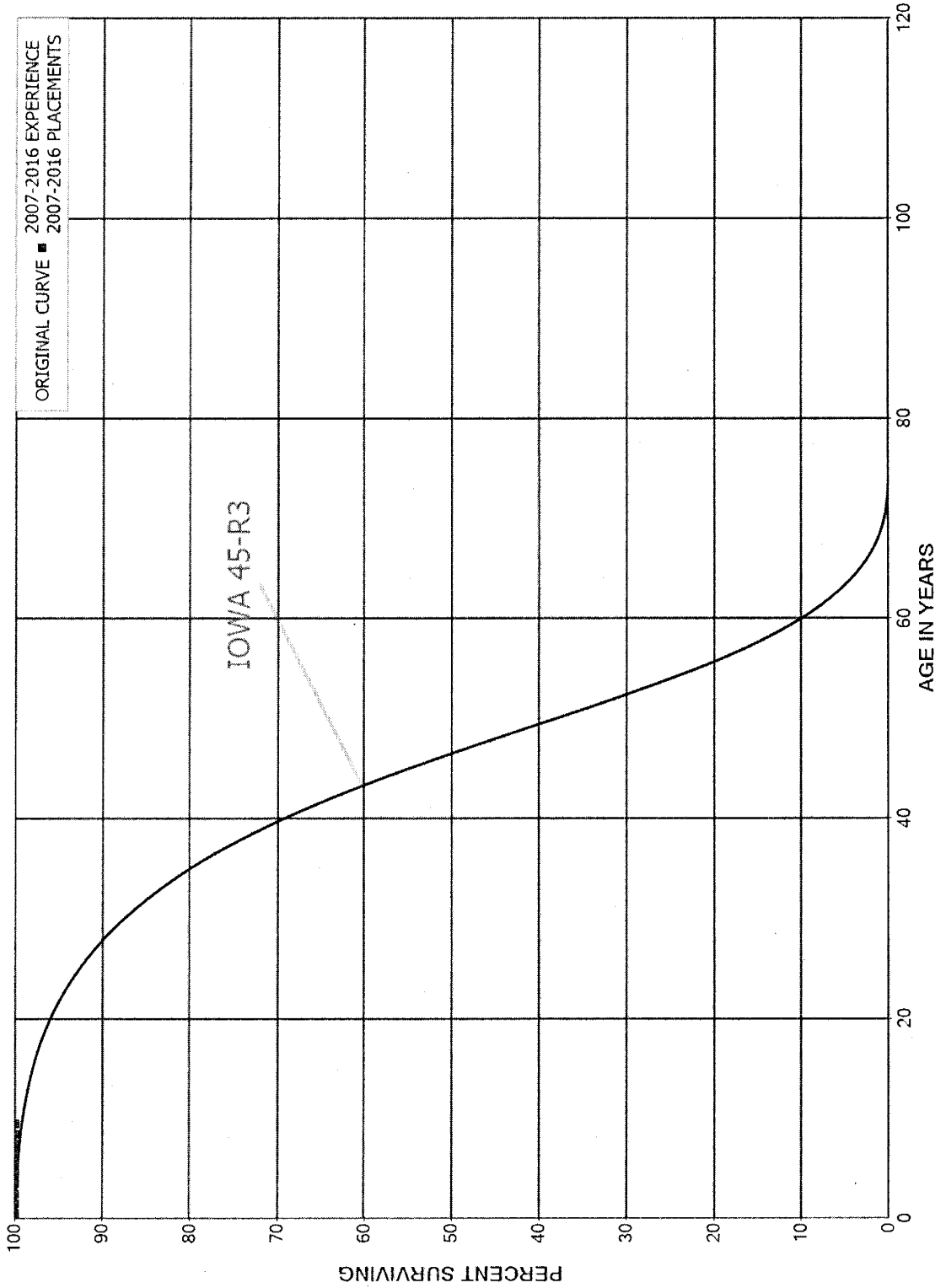
TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

Account (1)	EXPERIENCED AND ESTIMATED NET SALVAGE					5 - YEAR AMORT. (7)
	2013 (2)	2014 (3)	2015 (4)	2016 (5)	2017 (5)	
354.20	0	(17,282)	(1,398)	(42)	0	3,744
354.30	(1,424)	(0)	(4,141)	0	(4,160)	1,945
354.40	(27,581)	(10,305)	(1,027)	(4,581)	0	8,699
354.70	0	0	(480)	0	0	96
355.00	(963)	(510)	(1,666)	(4,934)	(5,440)	2,702
360.10	(8,182)	(1,577)	(3,256)	(12,703)	0	5,144
361.10	(34,624)	(16,027)	(65,334)	(6,970)	(190,930)	62,777
361.20	0	0	(7,497)	(53,000)	(7,440)	13,587
363.00	(15,735)	(26,515)	(27,377)	(11,694)	(6,148)	17,494
364.00	0	(816)	0	0	0	163
371.00	(2,291)	(4,325)	(4,902)	(11,515)	0	4,607
380.00	(6,028)	(21,655)	(1,623)	(23,917)	(11,823)	13,009
381.00	0	0	0	(2,110)	0	422
390.00	0	0	0	(276)	0	55
393.00	(240)	(240)	0	171,552	0	(34,214)
394.00	(6)	0	0	(566)	0	115
395.00	0	0	0	44,960	0	(8,992)
396.00	(2,027)	0	(4,190)	131,476	0	(25,052)
397.00	0	0	0	87,116	0	(17,423)
TOTAL	(99,101)	(99,252)	(122,889)	302,795	(225,941)	48,878

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## PART VI. SERVICE LIFE STATISTICS

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



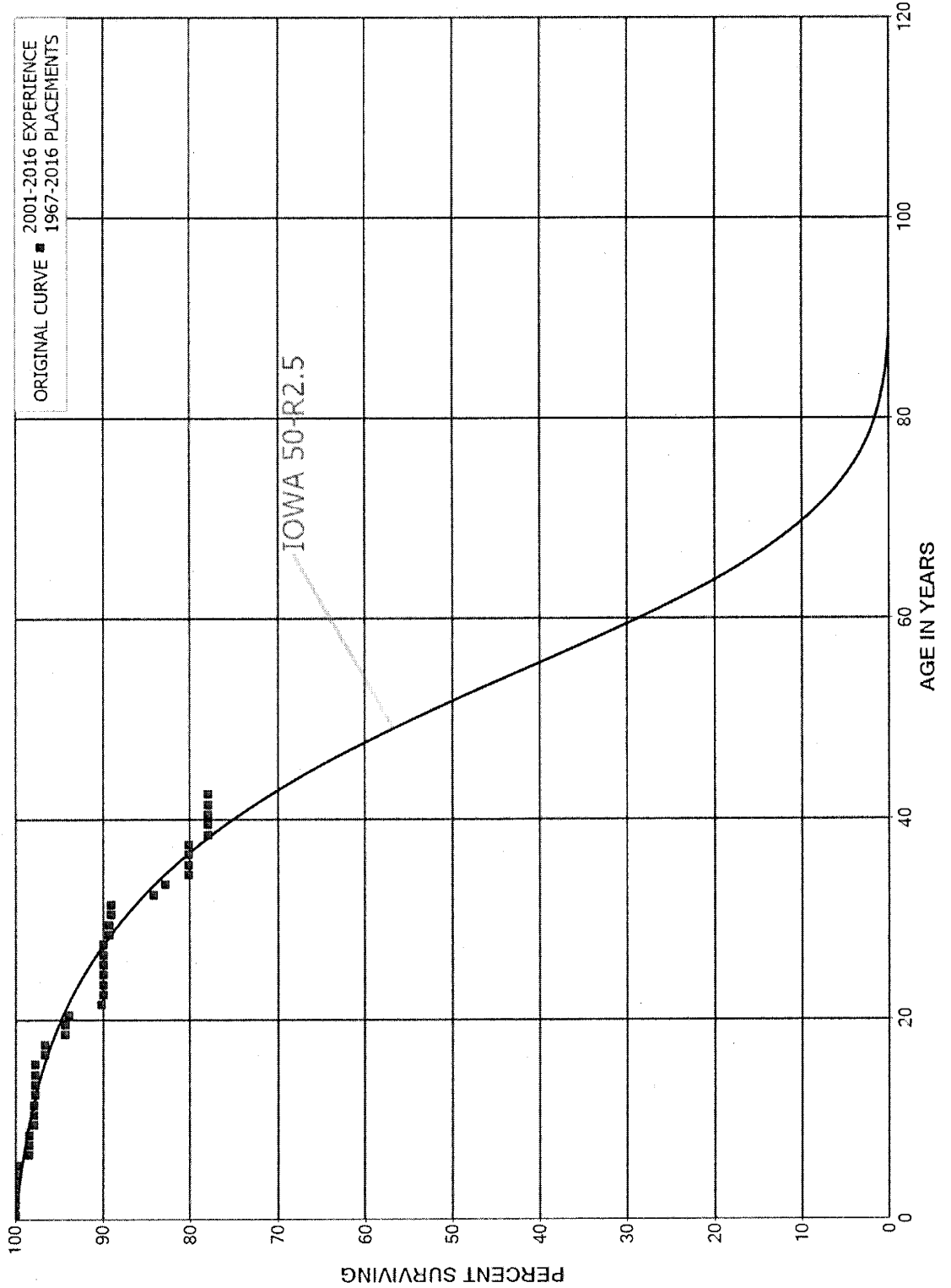
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION

ORIGINAL LIFE TABLE

PLACEMENT BAND 2007-2016			EXPERIENCE BAND 2007-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	479,297		0.0000	1.0000	100.00
0.5	443,025		0.0000	1.0000	100.00
1.5	401,128		0.0000	1.0000	100.00
2.5	386,362	0	0.0000	1.0000	100.00
3.5	321,516		0.0000	1.0000	100.00
4.5	321,516		0.0000	1.0000	100.00
5.5	312,929		0.0000	1.0000	100.00
6.5	312,929		0.0000	1.0000	100.00
7.5	134,415		0.0000	1.0000	100.00
8.5	20,659		0.0000	1.0000	100.00
9.5					100.00

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

ORIGINAL LIFE TABLE

PLACEMENT BAND 1967-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	14,898,913		0.0000	1.0000	100.00
0.5	14,467,713		0.0000	1.0000	100.00
1.5	13,143,580	6,642	0.0005	0.9995	100.00
2.5	6,231,741		0.0000	1.0000	99.95
3.5	6,282,870	5,000	0.0008	0.9992	99.95
4.5	6,284,906		0.0000	1.0000	99.87
5.5	6,438,341	93,834	0.0146	0.9854	99.87
6.5	5,054,206		0.0000	1.0000	98.41
7.5	2,121,165		0.0000	1.0000	98.41
8.5	2,070,922	12,316	0.0059	0.9941	98.41
9.5	1,541,997		0.0000	1.0000	97.83
10.5	613,257		0.0000	1.0000	97.83
11.5	604,142	571	0.0009	0.9991	97.83
12.5	542,079		0.0000	1.0000	97.74
13.5	340,382	0	0.0000	1.0000	97.74
14.5	366,659		0.0000	1.0000	97.74
15.5	531,024	6,000	0.0113	0.9887	97.74
16.5	670,556		0.0000	1.0000	96.63
17.5	727,885	17,548	0.0241	0.9759	96.63
18.5	548,312		0.0000	1.0000	94.30
19.5	443,826	2,209	0.0050	0.9950	94.30
20.5	397,483	15,515	0.0390	0.9610	93.83
21.5	1,394,101	2,801	0.0020	0.9980	90.17
22.5	1,356,301		0.0000	1.0000	89.99
23.5	947,066	839	0.0009	0.9991	89.99
24.5	905,999		0.0000	1.0000	89.91
25.5	695,033		0.0000	1.0000	89.91
26.5	728,530		0.0000	1.0000	89.91
27.5	709,191	4,628	0.0065	0.9935	89.91
28.5	609,929		0.0000	1.0000	89.32
29.5	677,411	1,646	0.0024	0.9976	89.32
30.5	294,355		0.0000	1.0000	89.11
31.5	193,459	10,682	0.0552	0.9448	89.11
32.5	133,751	2,190	0.0164	0.9836	84.19
33.5	74,481	2,375	0.0319	0.9681	82.81
34.5	42,597		0.0000	1.0000	80.17
35.5	42,597		0.0000	1.0000	80.17
36.5	68,420		0.0000	1.0000	80.17
37.5	68,420	1,942	0.0284	0.9716	80.17
38.5	55,331		0.0000	1.0000	77.89

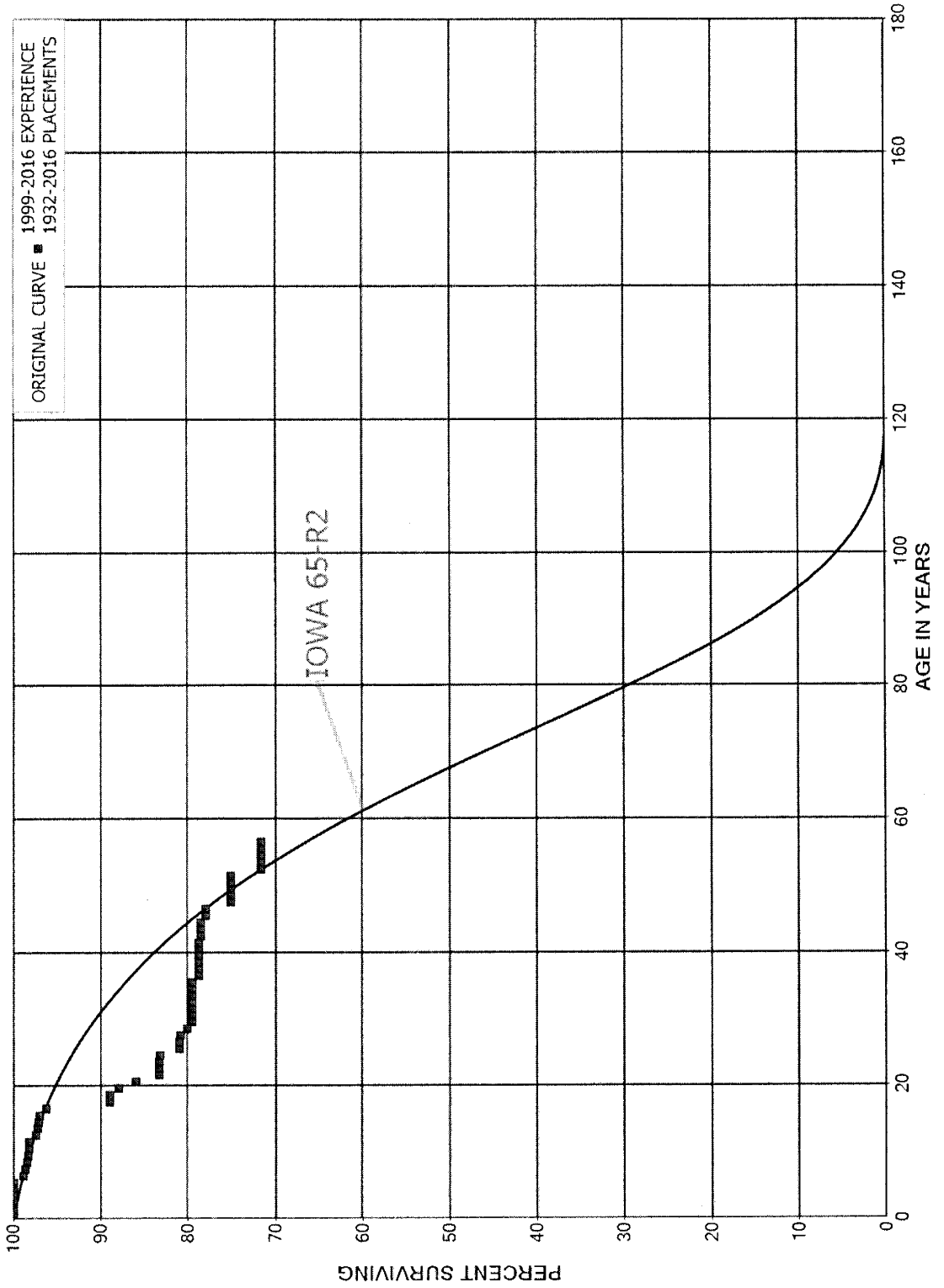
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1967-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	26,258		0.0000	1.0000	77.89
40.5	13,500		0.0000	1.0000	77.89
41.5	13,500		0.0000	1.0000	77.89
42.5	13,500		0.0000	1.0000	77.89
43.5	13,500		0.0000	1.0000	77.89
44.5	13,500		0.0000	1.0000	77.89
45.5	13,500		0.0000	1.0000	77.89
46.5	13,500	1,000	0.0741	0.9259	77.89
47.5	12,500		0.0000	1.0000	72.12
48.5	12,500		0.0000	1.0000	72.12
49.5					72.12

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP  
 ORIGINAL AND SMOOTH SURVIVOR CURVES





PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

ORIGINAL LIFE TABLE

PLACEMENT BAND 1932-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	33,000,434		0.0000	1.0000	100.00
0.5	33,350,930		0.0000	1.0000	100.00
1.5	39,996,512		0.0000	1.0000	100.00
2.5	30,568,955		0.0000	1.0000	100.00
3.5	30,546,179		0.0000	1.0000	100.00
4.5	30,876,914	4,425	0.0001	0.9999	100.00
5.5	30,606,208	338,631	0.0111	0.9889	99.99
6.5	25,944,806	58,603	0.0023	0.9977	98.88
7.5	9,396,797	25,674	0.0027	0.9973	98.66
8.5	9,207,399	12,418	0.0013	0.9987	98.39
9.5	9,315,612	2,917	0.0003	0.9997	98.25
10.5	8,872,749	2,750	0.0003	0.9997	98.22
11.5	8,645,535	74,144	0.0086	0.9914	98.19
12.5	10,762,085	14,432	0.0013	0.9987	97.35
13.5	12,526,953	16,198	0.0013	0.9987	97.22
14.5	12,295,656	11,425	0.0009	0.9991	97.09
15.5	11,867,767	100,079	0.0084	0.9916	97.00
16.5	5,166,313	388,255	0.0752	0.9248	96.19
17.5	4,773,963		0.0000	1.0000	88.96
18.5	4,166,258	49,417	0.0119	0.9881	88.96
19.5	5,941,050	132,342	0.0223	0.9777	87.90
20.5	4,491,388	137,465	0.0306	0.9694	85.94
21.5	4,377,381		0.0000	1.0000	83.31
22.5	5,187,207	1,543	0.0003	0.9997	83.31
23.5	4,821,275	3,907	0.0008	0.9992	83.29
24.5	3,321,038	91,231	0.0275	0.9725	83.22
25.5	3,106,591		0.0000	1.0000	80.94
26.5	3,230,245	2,818	0.0009	0.9991	80.94
27.5	3,125,462	30,071	0.0096	0.9904	80.86
28.5	1,828,937	12,488	0.0068	0.9932	80.09
29.5	1,128,443		0.0000	1.0000	79.54
30.5	980,642		0.0000	1.0000	79.54
31.5	846,781		0.0000	1.0000	79.54
32.5	153,364		0.0000	1.0000	79.54
33.5	201,804		0.0000	1.0000	79.54
34.5	240,285		0.0000	1.0000	79.54
35.5	239,920	2,457	0.0102	0.9898	79.54
36.5	237,463		0.0000	1.0000	78.73
37.5	237,463		0.0000	1.0000	78.73
38.5	148,575	0	0.0000	1.0000	78.73

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1932-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	802,346		0.0000	1.0000	78.73
40.5	1,249,880		0.0000	1.0000	78.73
41.5	806,170	2,200	0.0027	0.9973	78.73
42.5	803,970	602	0.0007	0.9993	78.51
43.5	763,453		0.0000	1.0000	78.45
44.5	763,453	5,301	0.0069	0.9931	78.45
45.5	758,152		0.0000	1.0000	77.91
46.5	757,109	27,325	0.0361	0.9639	77.91
47.5	479,693		0.0000	1.0000	75.10
48.5	479,693		0.0000	1.0000	75.10
49.5	465,721		0.0000	1.0000	75.10
50.5	497,221		0.0000	1.0000	75.10
51.5	443,259	20,628	0.0465	0.9535	75.10
52.5	422,631		0.0000	1.0000	71.60
53.5	422,631		0.0000	1.0000	71.60
54.5	447,474		0.0000	1.0000	71.60
55.5	56,343		0.0000	1.0000	71.60
56.5	56,343		0.0000	1.0000	71.60
57.5	56,343		0.0000	1.0000	71.60
58.5	140,486		0.0000	1.0000	71.60
59.5					71.60
60.5					
61.5					
62.5					
63.5					
64.5					
65.5					
66.5					
67.5					
68.5	39,928		0.0000		
69.5	39,928		0.0000		
70.5	39,928		0.0000		
71.5	39,928		0.0000		
72.5	39,928		0.0000		
73.5	39,928		0.0000		
74.5	39,928		0.0000		
75.5	39,928		0.0000		
76.5	602		0.0000		
77.5	602		0.0000		
78.5	602		0.0000		

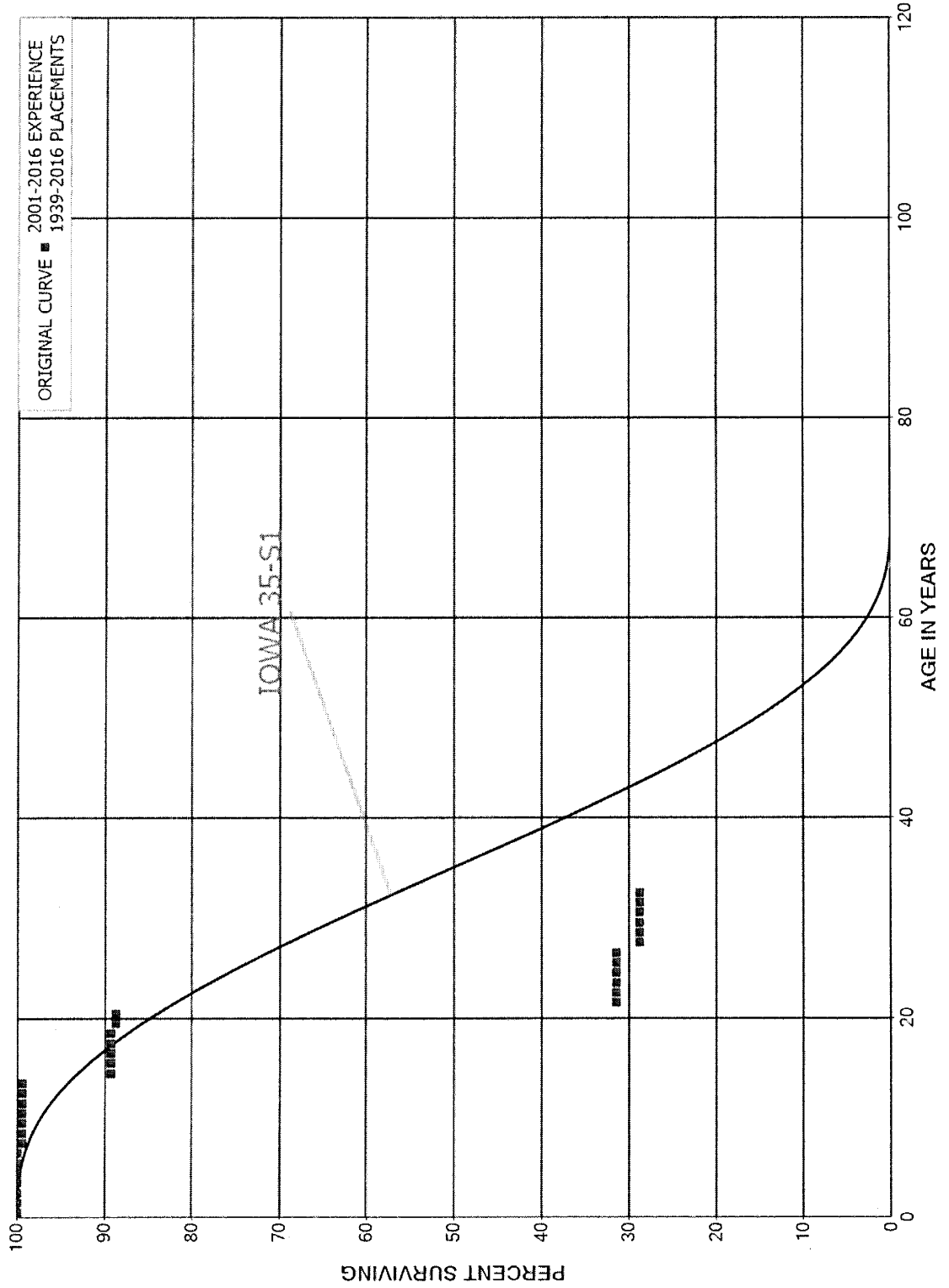
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1932-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	602		0.0000		
80.5	602		0.0000		
81.5	602		0.0000		
82.5	602		0.0000		
83.5	602		0.0000		
84.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE

PLACEMENT BAND 1939-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,651,443		0.0000	1.0000	100.00
0.5	1,642,764	400	0.0002	0.9998	100.00
1.5	977,029		0.0000	1.0000	99.98
2.5	563,364		0.0000	1.0000	99.98
3.5	538,106		0.0000	1.0000	99.98
4.5	510,801		0.0000	1.0000	99.98
5.5	505,206		0.0000	1.0000	99.98
6.5	466,271	2,524	0.0054	0.9946	99.98
7.5	541,673		0.0000	1.0000	99.43
8.5	178,775		0.0000	1.0000	99.43
9.5	162,581		0.0000	1.0000	99.43
10.5	162,581		0.0000	1.0000	99.43
11.5	205,471		0.0000	1.0000	99.43
12.5	204,311		0.0000	1.0000	99.43
13.5	177,535	18,073	0.1018	0.8982	99.43
14.5	164,251		0.0000	1.0000	89.31
15.5	164,251		0.0000	1.0000	89.31
16.5	164,251		0.0000	1.0000	89.31
17.5	193,471		0.0000	1.0000	89.31
18.5	210,457	1,510	0.0072	0.9928	89.31
19.5	218,059		0.0000	1.0000	88.67
20.5	218,059	140,772	0.6456	0.3544	88.67
21.5	61,173		0.0000	1.0000	31.43
22.5	44,261		0.0000	1.0000	31.43
23.5	27,275		0.0000	1.0000	31.43
24.5	12,308		0.0000	1.0000	31.43
25.5	12,308		0.0000	1.0000	31.43
26.5	12,308	1,047	0.0851	0.9149	31.43
27.5	11,260		0.0000	1.0000	28.75
28.5	11,260		0.0000	1.0000	28.75
29.5	11,260		0.0000	1.0000	28.75
30.5	11,260		0.0000	1.0000	28.75
31.5	11,260		0.0000	1.0000	28.75
32.5					28.75
33.5					
34.5					
35.5	450		0.0000		
36.5	450		0.0000		
37.5	450		0.0000		
38.5	450		0.0000		

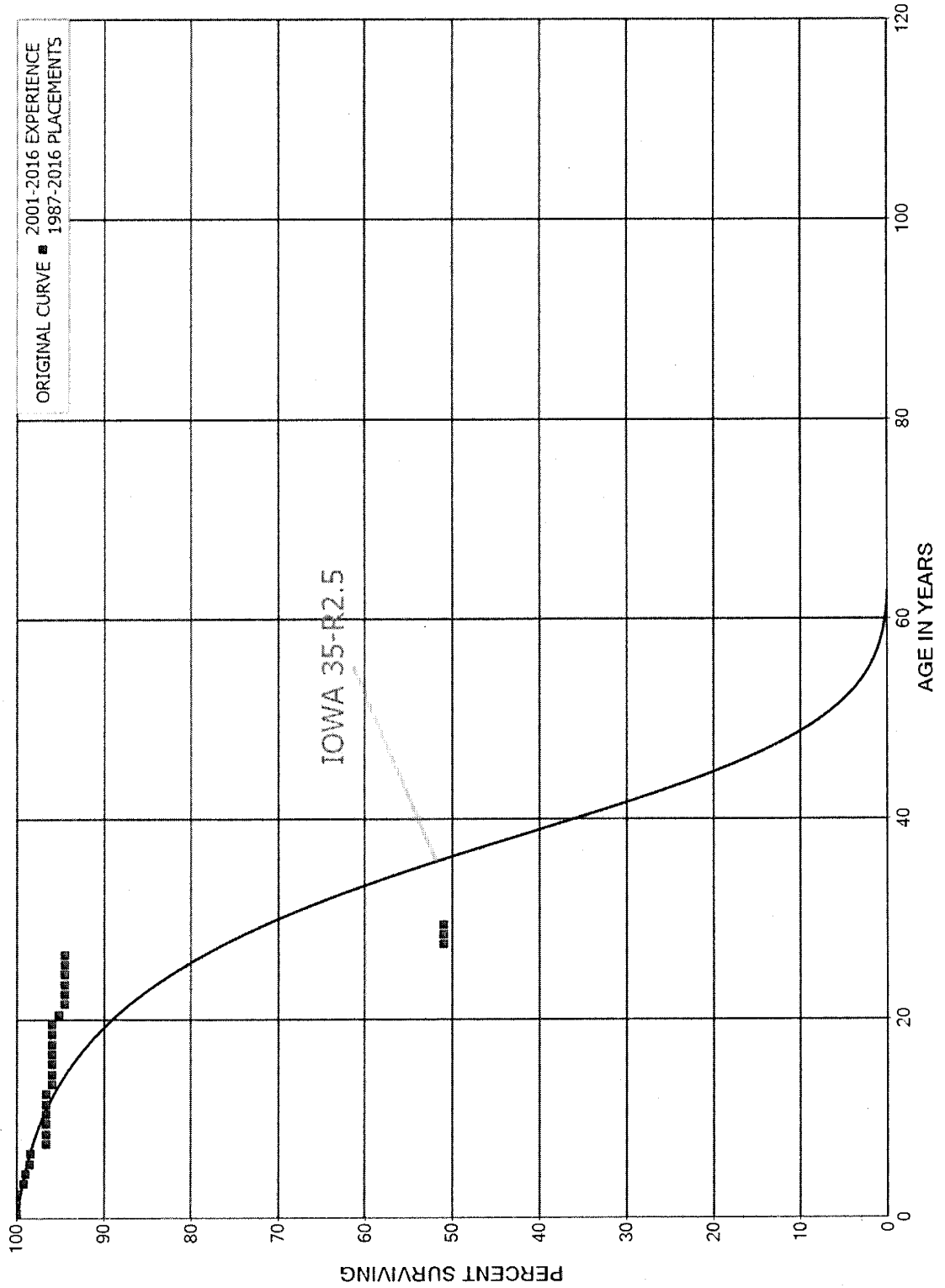
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	450		0.0000		
40.5	450		0.0000		
41.5	450		0.0000		
42.5	450		0.0000		
43.5	450		0.0000		
44.5					
45.5					
46.5					
47.5					
48.5					
49.5					
50.5					
51.5					
52.5					
53.5					
54.5					
55.5					
56.5					
57.5					
58.5					
59.5					
60.5					
61.5					
62.5					
63.5					
64.5					
65.5					
66.5					
67.5					
68.5	3,802		0.0000		
69.5	3,802		0.0000		
70.5	3,802	283	0.0744		
71.5	3,519		0.0000		
72.5	3,519		0.0000		
73.5	3,519		0.0000		
74.5	3,519		0.0000		
75.5	3,519		0.0000		
76.5	3,519		0.0000		
77.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 355.00 POWER GENERATION EQUIPMENT  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

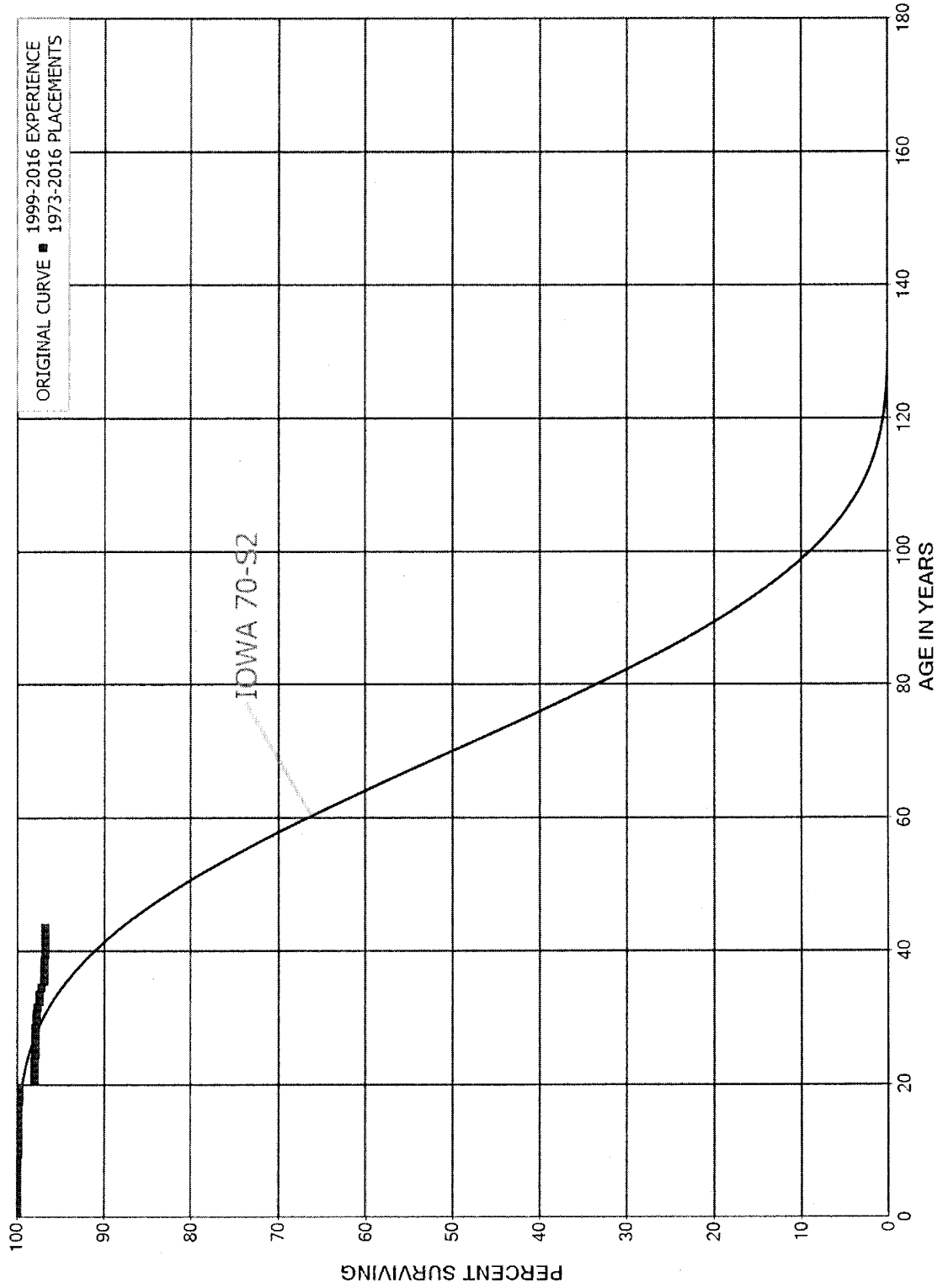
ACCOUNT 355.00 POWER GENERATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1987-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,923,950		0.0000	1.0000	100.00
0.5	3,951,862		0.0000	1.0000	100.00
1.5	4,139,656		0.0000	1.0000	100.00
2.5	3,357,282	26,926	0.0080	0.9920	100.00
3.5	3,326,043	10,161	0.0031	0.9969	99.20
4.5	3,330,607	14,523	0.0044	0.9956	98.89
5.5	3,301,707	1,387	0.0004	0.9996	98.46
6.5	3,362,772	61,470	0.0183	0.9817	98.42
7.5	379,637		0.0000	1.0000	96.62
8.5	149,024		0.0000	1.0000	96.62
9.5	132,320		0.0000	1.0000	96.62
10.5	132,320		0.0000	1.0000	96.62
11.5	62,089		0.0000	1.0000	96.62
12.5	159,028	1,161	0.0073	0.9927	96.62
13.5	220,502		0.0000	1.0000	95.92
14.5	152,758		0.0000	1.0000	95.92
15.5	160,438		0.0000	1.0000	95.92
16.5	173,019		0.0000	1.0000	95.92
17.5	203,466		0.0000	1.0000	95.92
18.5	190,885		0.0000	1.0000	95.92
19.5	160,438	1,204	0.0075	0.9925	95.92
20.5	159,234	1,103	0.0069	0.9931	95.20
21.5	402,008		0.0000	1.0000	94.54
22.5	381,683		0.0000	1.0000	94.54
23.5	180,072		0.0000	1.0000	94.54
24.5	91,649		0.0000	1.0000	94.54
25.5	91,649		0.0000	1.0000	94.54
26.5	91,649	42,310	0.4617	0.5383	94.54
27.5	19,246		0.0000	1.0000	50.89
28.5	19,246		0.0000	1.0000	50.89
29.5					50.89



PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1973-2016			EXPERIENCE BAND 1999-2016			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
0.0	13,955,133	19	0.0000	1.0000	100.00	
0.5	11,541,560	26	0.0000	1.0000	100.00	
1.5	16,321,484	33	0.0000	1.0000	100.00	
2.5	12,392,098	70	0.0000	1.0000	100.00	
3.5	12,868,056	321	0.0000	1.0000	100.00	
4.5	14,118,601	315	0.0000	1.0000	100.00	
5.5	14,118,286	397	0.0000	1.0000	99.99	
6.5	13,771,287	1,611	0.0001	0.9999	99.99	
7.5	13,101,020	527	0.0000	1.0000	99.98	
8.5	9,820,515	16,747	0.0017	0.9983	99.98	
9.5	8,512,092	64	0.0000	1.0000	99.81	
10.5	7,326,393		0.0000	1.0000	99.80	
11.5	7,220,421		0.0000	1.0000	99.80	
12.5	5,386,728		0.0000	1.0000	99.80	
13.5	5,189,660	468	0.0001	0.9999	99.80	
14.5	4,725,801	99	0.0000	1.0000	99.80	
15.5	4,020,143	9	0.0000	1.0000	99.79	
16.5	3,786,137	949	0.0003	0.9997	99.79	
17.5	3,701,384	1,253	0.0003	0.9997	99.77	
18.5	3,379,394	826	0.0002	0.9998	99.73	
19.5	2,066,054	35,678	0.0173	0.9827	99.71	
20.5	1,934,204	70	0.0000	1.0000	97.99	
21.5	2,888,772	1,897	0.0007	0.9993	97.98	
22.5	3,389,873	569	0.0002	0.9998	97.92	
23.5	3,972,073	590	0.0001	0.9999	97.90	
24.5	5,460,237	1,358	0.0002	0.9998	97.89	
25.5	5,866,623	788	0.0001	0.9999	97.86	
26.5	5,919,102	1,095	0.0002	0.9998	97.85	
27.5	5,839,355	2,049	0.0004	0.9996	97.83	
28.5	5,490,986	3,135	0.0006	0.9994	97.80	
29.5	5,285,127	3,365	0.0006	0.9994	97.74	
30.5	5,188,162	4,130	0.0008	0.9992	97.68	
31.5	4,887,816	7,933	0.0016	0.9984	97.60	
32.5	4,879,883	1,374	0.0003	0.9997	97.44	
33.5	4,690,444	13,636	0.0029	0.9971	97.42	
34.5	4,623,330	12,733	0.0028	0.9972	97.13	
35.5	4,449,652	2,869	0.0006	0.9994	96.87	
36.5	4,371,678	15	0.0000	1.0000	96.80	
37.5	4,297,913		0.0000	1.0000	96.80	
38.5	4,027,558	1,883	0.0005	0.9995	96.80	

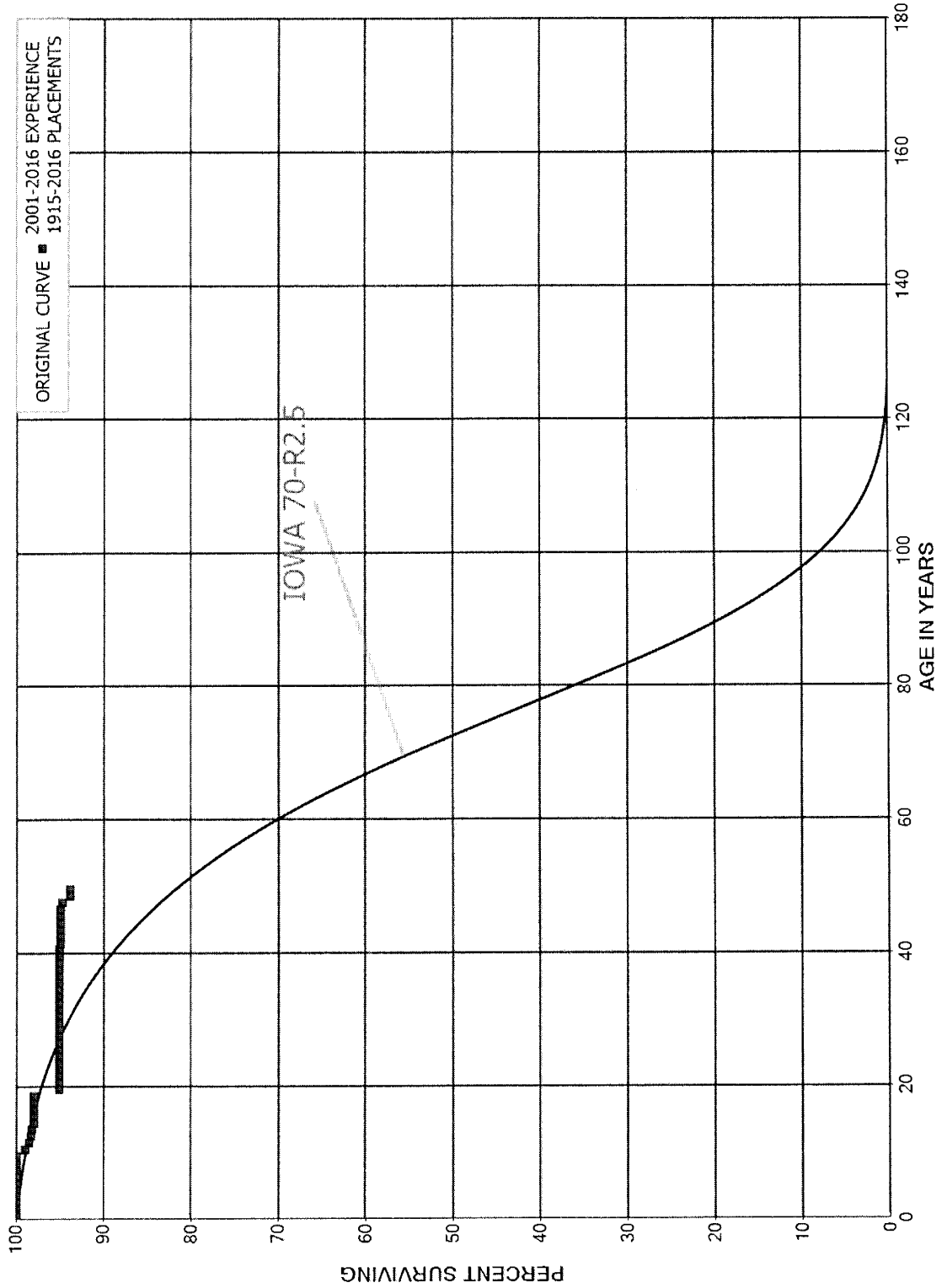
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1973-2016			EXPERIENCE BAND 1999-2016			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
39.5	3,566,825	82	0.0000	1.0000	96.76	
40.5	2,553,034		0.0000	1.0000	96.76	
41.5	1,703,254		0.0000	1.0000	96.76	
42.5	199,478		0.0000	1.0000	96.76	
43.5					96.76	

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1915-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	40,830,438		0.0000	1.0000	100.00
0.5	35,051,829	0	0.0000	1.0000	100.00
1.5	28,606,128	0	0.0000	1.0000	100.00
2.5	27,695,977		0.0000	1.0000	100.00
3.5	27,575,280		0.0000	1.0000	100.00
4.5	25,631,908	663	0.0000	1.0000	100.00
5.5	25,429,494		0.0000	1.0000	100.00
6.5	24,288,104		0.0000	1.0000	100.00
7.5	16,841,348	0	0.0000	1.0000	100.00
8.5	14,276,951	13,334	0.0009	0.9991	100.00
9.5	10,424,983	102,716	0.0099	0.9901	99.90
10.5	9,419,741	41,946	0.0045	0.9955	98.92
11.5	6,730,733	9,699	0.0014	0.9986	98.48
12.5	6,376,320	12,005	0.0019	0.9981	98.34
13.5	6,178,430	10,767	0.0017	0.9983	98.15
14.5	6,056,762	187	0.0000	1.0000	97.98
15.5	5,547,707		0.0000	1.0000	97.98
16.5	5,810,198	1,374	0.0002	0.9998	97.98
17.5	6,374,334		0.0000	1.0000	97.95
18.5	4,815,350	144,378	0.0300	0.9700	97.95
19.5	1,991,616		0.0000	1.0000	95.02
20.5	1,753,160		0.0000	1.0000	95.02
21.5	7,254,959		0.0000	1.0000	95.02
22.5	8,805,126		0.0000	1.0000	95.02
23.5	2,980,050		0.0000	1.0000	95.02
24.5	2,614,735		0.0000	1.0000	95.02
25.5	5,027,688		0.0000	1.0000	95.02
26.5	5,614,919		0.0000	1.0000	95.02
27.5	3,337,693		0.0000	1.0000	95.02
28.5	2,528,609		0.0000	1.0000	95.02
29.5	2,851,540		0.0000	1.0000	95.02
30.5	2,312,856		0.0000	1.0000	95.02
31.5	1,950,175	21	0.0000	1.0000	95.02
32.5	632,862		0.0000	1.0000	95.02
33.5	303,367		0.0000	1.0000	95.02
34.5	257,476		0.0000	1.0000	95.02
35.5	257,476		0.0000	1.0000	95.02
36.5	428,467		0.0000	1.0000	95.02
37.5	440,852		0.0000	1.0000	95.02
38.5	701,652		0.0000	1.0000	95.02

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1915-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	1,915,237		0.0000	1.0000	95.02
40.5	1,667,133	459	0.0003	0.9997	95.02
41.5	241,644	49	0.0002	0.9998	94.99
42.5	394,697		0.0000	1.0000	94.97
43.5	394,697		0.0000	1.0000	94.97
44.5	727,382	24	0.0000	1.0000	94.97
45.5	727,358		0.0000	1.0000	94.97
46.5	727,358	1,617	0.0022	0.9978	94.97
47.5	300,989	2,878	0.0096	0.9904	94.76
48.5	263,252		0.0000	1.0000	93.85
49.5	557,380	187	0.0003	0.9997	93.85
50.5	557,194		0.0000	1.0000	93.82
51.5					93.82
52.5	38,593		0.0000		
53.5	69,297		0.0000		
54.5	189,428		0.0000		
55.5	225,115		0.0000		
56.5	225,115		0.0000		
57.5	225,115		0.0000		
58.5	1,624,075		0.0000		
59.5	85,304		0.0000		
60.5	85,304		0.0000		
61.5	46,710	8	0.0002		
62.5	46,703	61	0.0013		
63.5	46,642	289	0.0062		
64.5	46,353		0.0000		
65.5	94,737		0.0000		
66.5	94,737		0.0000		
67.5	94,737		0.0000		
68.5	290,689		0.0000		
69.5	290,689		0.0000		
70.5	731,401	168	0.0002		
71.5	684,881	258	0.0004		
72.5	684,623	578	0.0008		
73.5	684,044	869	0.0013		
74.5	683,176	7,508	0.0110		
75.5	675,668	32,767	0.0485		
76.5	642,901	1,310	0.0020		
77.5	447,491	8,017	0.0179		
78.5	439,474	162,959	0.3708		

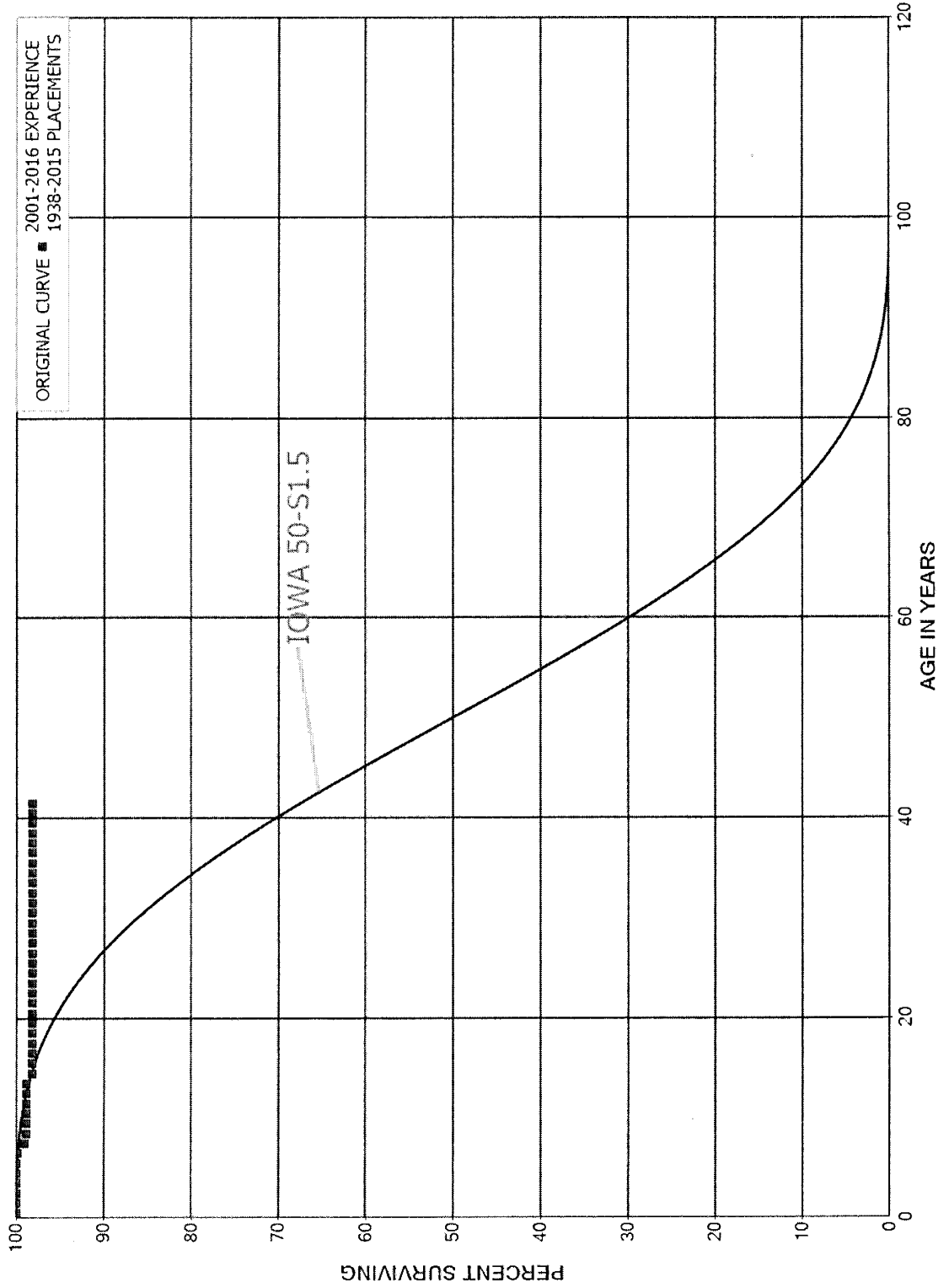
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1915-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	276,515	291	0.0011		
80.5	632,413		0.0000		
81.5	588,402	2,303	0.0039		
82.5	604,857		0.0000		
83.5	604,857	2,876	0.0048		
84.5	601,981	10	0.0000		
85.5	722,814		0.0000		
86.5	495,789	13,485	0.0272		
87.5	463,547	153,014	0.3301		
88.5	310,533	7	0.0000		
89.5	310,527	4,352	0.0140		
90.5	306,175	11,276	0.0368		
91.5	294,898	11,132	0.0377		
92.5	283,767	1,273	0.0045		
93.5	282,494	4,366	0.0155		
94.5	278,128	221	0.0008		
95.5	277,906	1,967	0.0071		
96.5	105,769	42	0.0004		
97.5	105,727	2,765	0.0262		
98.5	102,961	5,411	0.0526		
99.5	97,550	11	0.0001		
100.5	97,539	1,134	0.0116		
101.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 361.20 MANHOLES  
 ORIGINAL AND SMOOTH SURVIVOR CURVES





PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.20 MANHOLES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1938-2015			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	7,041,531		0.0000	1.0000	100.00
0.5	7,058,797		0.0000	1.0000	100.00
1.5	1,230,267		0.0000	1.0000	100.00
2.5	2,865,775		0.0000	1.0000	100.00
3.5	3,163,843	911	0.0003	0.9997	100.00
4.5	3,931,997		0.0000	1.0000	99.97
5.5	4,015,936	6,667	0.0017	0.9983	99.97
6.5	3,858,363	27,566	0.0071	0.9929	99.81
7.5	3,757,451	10,961	0.0029	0.9971	99.09
8.5	3,389,356		0.0000	1.0000	98.80
9.5	1,889,580		0.0000	1.0000	98.80
10.5	1,918,189		0.0000	1.0000	98.80
11.5	1,203,927		0.0000	1.0000	98.80
12.5	1,976,502		0.0000	1.0000	98.80
13.5	1,924,670	12,188	0.0063	0.9937	98.80
14.5	1,744,662		0.0000	1.0000	98.18
15.5	1,557,267		0.0000	1.0000	98.18
16.5	1,440,203		0.0000	1.0000	98.18
17.5	1,481,782		0.0000	1.0000	98.18
18.5	1,287,452		0.0000	1.0000	98.18
19.5	276,163		0.0000	1.0000	98.18
20.5	236,511		0.0000	1.0000	98.18
21.5	400,875		0.0000	1.0000	98.18
22.5	573,047		0.0000	1.0000	98.18
23.5	465,673		0.0000	1.0000	98.18
24.5	364,112		0.0000	1.0000	98.18
25.5	364,112		0.0000	1.0000	98.18
26.5	361,292		0.0000	1.0000	98.18
27.5	361,292		0.0000	1.0000	98.18
28.5	361,292		0.0000	1.0000	98.18
29.5	384,963		0.0000	1.0000	98.18
30.5	296,404		0.0000	1.0000	98.18
31.5	114,608		0.0000	1.0000	98.18
32.5	18,683		0.0000	1.0000	98.18
33.5	36,682		0.0000	1.0000	98.18
34.5	36,682		0.0000	1.0000	98.18
35.5	36,682		0.0000	1.0000	98.18
36.5	60,779		0.0000	1.0000	98.18
37.5	60,779		0.0000	1.0000	98.18
38.5	82,252		0.0000	1.0000	98.18

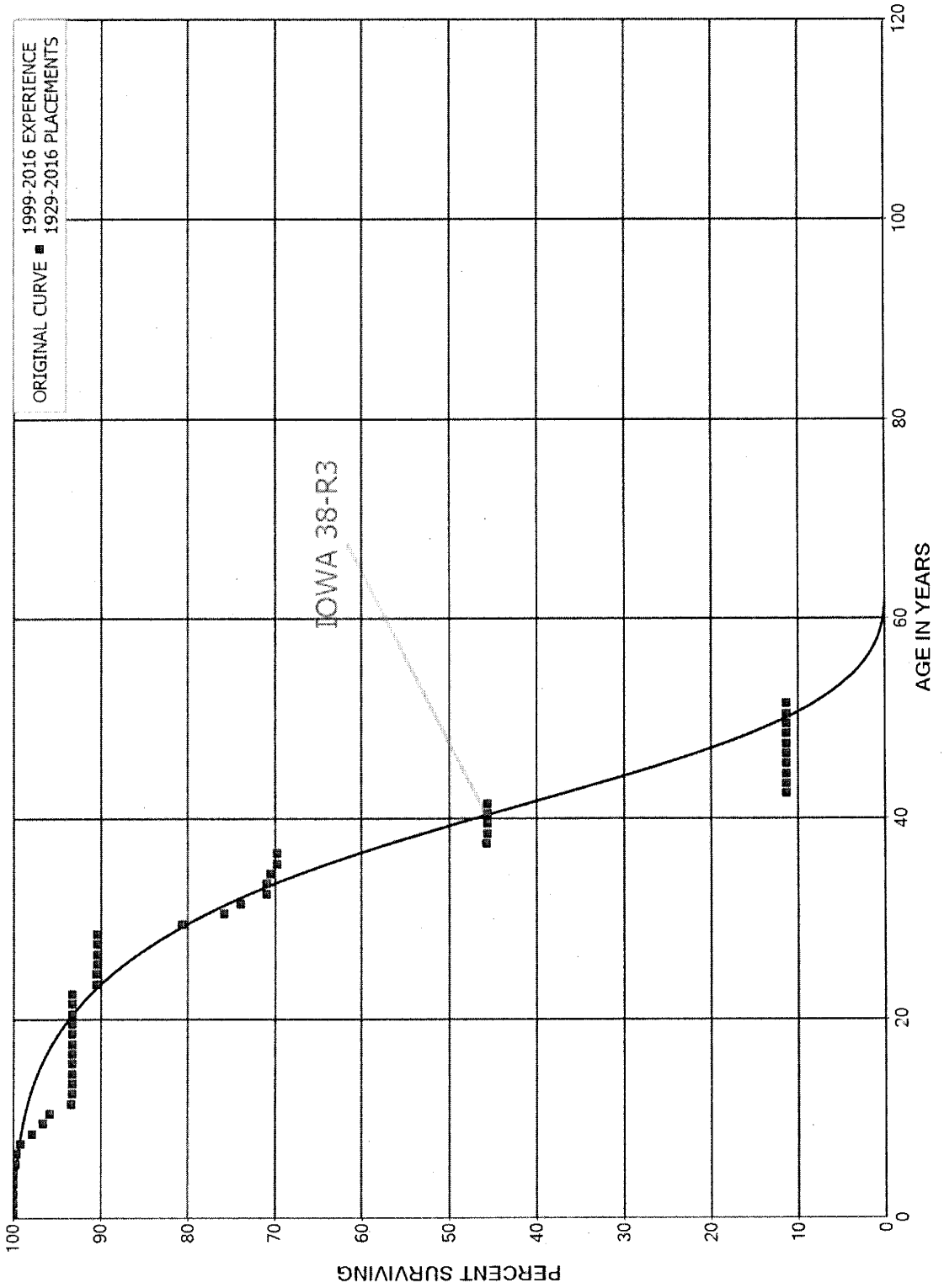
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.20 MANHOLES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1938-2015			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	74,860		0.0000	1.0000	98.18
40.5	74,860		0.0000	1.0000	98.18
41.5	74,860		0.0000	1.0000	98.18
42.5	107,206		0.0000	1.0000	98.18
43.5	107,206		0.0000	1.0000	98.18
44.5	170,327		0.0000	1.0000	98.18
45.5	170,327		0.0000	1.0000	98.18
46.5	170,327		0.0000	1.0000	98.18
47.5	85,732		0.0000	1.0000	98.18
48.5	50,344		0.0000	1.0000	98.18
49.5	50,344		0.0000	1.0000	98.18
50.5	50,344		0.0000	1.0000	98.18
51.5					98.18
52.5	6,601		0.0000		
53.5	6,601		0.0000		
54.5	6,601		0.0000		
55.5	6,601		0.0000		
56.5	6,601		0.0000		
57.5	6,601		0.0000		
58.5	6,601		0.0000		
59.5	6,601		0.0000		
60.5	6,601		0.0000		
61.5					
62.5					
63.5					
64.5					
65.5					
66.5					
67.5	22,989		0.0000		
68.5	66,622	22,989	0.3451		
69.5	43,633		0.0000		
70.5	43,633		0.0000		
71.5	43,633		0.0000		
72.5	43,633		0.0000		
73.5	43,633		0.0000		
74.5	43,633		0.0000		
75.5	43,633		0.0000		
76.5	43,633		0.0000		
77.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 363.00 SERVICES  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1929-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	7,179,778		0.0000	1.0000	100.00
0.5	6,743,741	0	0.0000	1.0000	100.00
1.5	5,987,981	0	0.0000	1.0000	100.00
2.5	5,728,527	5,668	0.0010	0.9990	100.00
3.5	5,783,328	421	0.0001	0.9999	99.90
4.5	5,825,040	12,635	0.0022	0.9978	99.89
5.5	5,740,121	2,890	0.0005	0.9995	99.68
6.5	7,216,698	31,963	0.0044	0.9956	99.63
7.5	4,780,435	65,894	0.0138	0.9862	99.19
8.5	4,413,319	56,117	0.0127	0.9873	97.82
9.5	4,030,726	31,055	0.0077	0.9923	96.57
10.5	3,398,955	86,029	0.0253	0.9747	95.83
11.5	3,229,862	4,877	0.0015	0.9985	93.41
12.5	2,835,391		0.0000	1.0000	93.26
13.5	2,746,778		0.0000	1.0000	93.26
14.5	2,688,715	871	0.0003	0.9997	93.26
15.5	2,617,561		0.0000	1.0000	93.23
16.5	2,396,981		0.0000	1.0000	93.23
17.5	2,399,324		0.0000	1.0000	93.23
18.5	2,080,906		0.0000	1.0000	93.23
19.5	1,787,301		0.0000	1.0000	93.23
20.5	2,287,083		0.0000	1.0000	93.23
21.5	2,785,350		0.0000	1.0000	93.23
22.5	2,966,268	87,997	0.0297	0.9703	93.23
23.5	2,396,092		0.0000	1.0000	90.47
24.5	2,356,227	497	0.0002	0.9998	90.47
25.5	2,491,076		0.0000	1.0000	90.45
26.5	2,431,566		0.0000	1.0000	90.45
27.5	2,129,915		0.0000	1.0000	90.45
28.5	1,942,025	209,578	0.1079	0.8921	90.45
29.5	1,544,584	92,585	0.0599	0.9401	80.69
30.5	1,451,107	36,030	0.0248	0.9752	75.85
31.5	1,286,598	51,927	0.0404	0.9596	73.97
32.5	984,818	1,241	0.0013	0.9987	70.98
33.5	860,433	4,871	0.0057	0.9943	70.89
34.5	797,033	8,461	0.0106	0.9894	70.49
35.5	827,178	503	0.0006	0.9994	69.74
36.5	484,529	167,021	0.3447	0.6553	69.70
37.5	276,287	192	0.0007	0.9993	45.67
38.5	261,164		0.0000	1.0000	45.64

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1929-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	385,273		0.0000	1.0000	45.64
40.5	328,081	385	0.0012	0.9988	45.64
41.5	146,407	110,064	0.7518	0.2482	45.59
42.5	45,323		0.0000	1.0000	11.32
43.5	43,350		0.0000	1.0000	11.32
44.5	49,590		0.0000	1.0000	11.32
45.5	49,036		0.0000	1.0000	11.32
46.5	48,544		0.0000	1.0000	11.32
47.5	32,859		0.0000	1.0000	11.32
48.5	20,490		0.0000	1.0000	11.32
49.5	54,223		0.0000	1.0000	11.32
50.5	54,223		0.0000	1.0000	11.32
51.5					11.32
52.5	2,102		0.0000		
53.5	5,105		0.0000		
54.5	17,116		0.0000		
55.5	20,805		0.0000		
56.5	20,805		0.0000		
57.5	20,805		0.0000		
58.5	180,162		0.0000		
59.5	6,697		0.0000		
60.5	6,697		0.0000		
61.5	4,595	4,595	1.0000		
62.5					
63.5					
64.5					
65.5	3,865		0.0000		
66.5	3,865		0.0000		
67.5	3,865		0.0000		
68.5	13,932		0.0000		
69.5	13,932	819	0.0588		
70.5	13,113		0.0000		
71.5	13,113	4,521	0.3448		
72.5	8,592	1,251	0.1456		
73.5	7,341	442	0.0602		
74.5	6,899	644	0.0933		
75.5	6,255		0.0000		
76.5	6,255		0.0000		
77.5					
78.5					

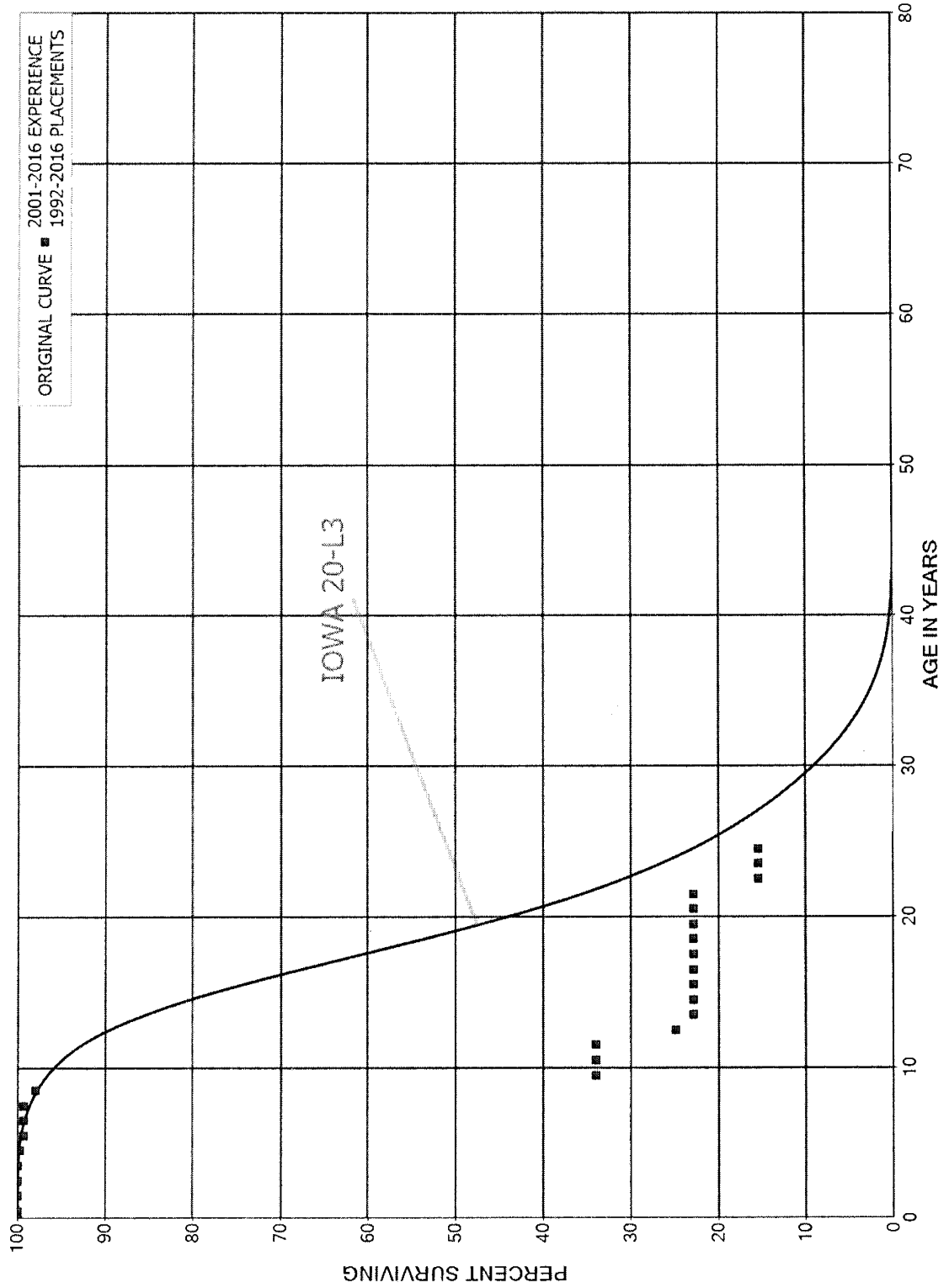
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1929-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5					
80.5					
81.5					
82.5		717	0.0000		
83.5		717	0.0000		
84.5		717	0.0000		
85.5		717	0.0000		
86.5		717	0.0000		
87.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 364.00 FLOW MEASURING DEVICES  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

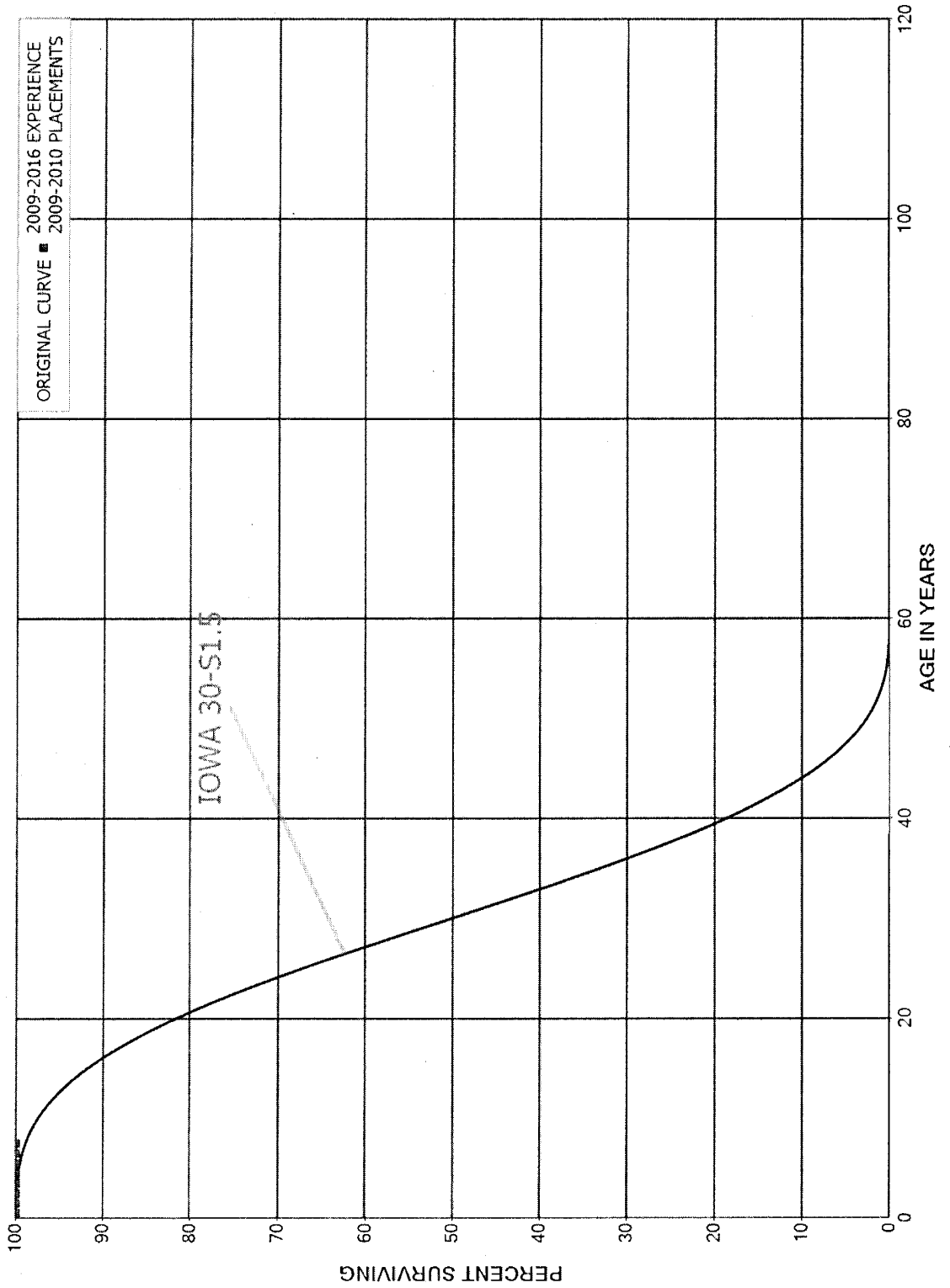
ACCOUNT 364.00 FLOW MEASURING DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1992-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	414,576		0.0000	1.0000	100.00
0.5	440,508		0.0000	1.0000	100.00
1.5	449,895		0.0000	1.0000	100.00
2.5	400,032		0.0000	1.0000	100.00
3.5	387,865	1,146	0.0030	0.9970	100.00
4.5	386,719	1,418	0.0037	0.9963	99.70
5.5	385,301		0.0000	1.0000	99.34
6.5	379,343		0.0000	1.0000	99.34
7.5	301,143	4,337	0.0144	0.9856	99.34
8.5	277,865	181,670	0.6538	0.3462	97.91
9.5	92,072		0.0000	1.0000	33.90
10.5	74,787		0.0000	1.0000	33.90
11.5	36,136	9,617	0.2661	0.7339	33.90
12.5	25,020	2,038	0.0815	0.9185	24.87
13.5	15,432		0.0000	1.0000	22.85
14.5	4,908		0.0000	1.0000	22.85
15.5	13,078		0.0000	1.0000	22.85
16.5	13,078		0.0000	1.0000	22.85
17.5	13,078		0.0000	1.0000	22.85
18.5	13,078		0.0000	1.0000	22.85
19.5	13,078		0.0000	1.0000	22.85
20.5	13,078		0.0000	1.0000	22.85
21.5	13,078	4,272	0.3266	0.6734	22.85
22.5	8,806		0.0000	1.0000	15.38
23.5	8,806		0.0000	1.0000	15.38
24.5					15.38



PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



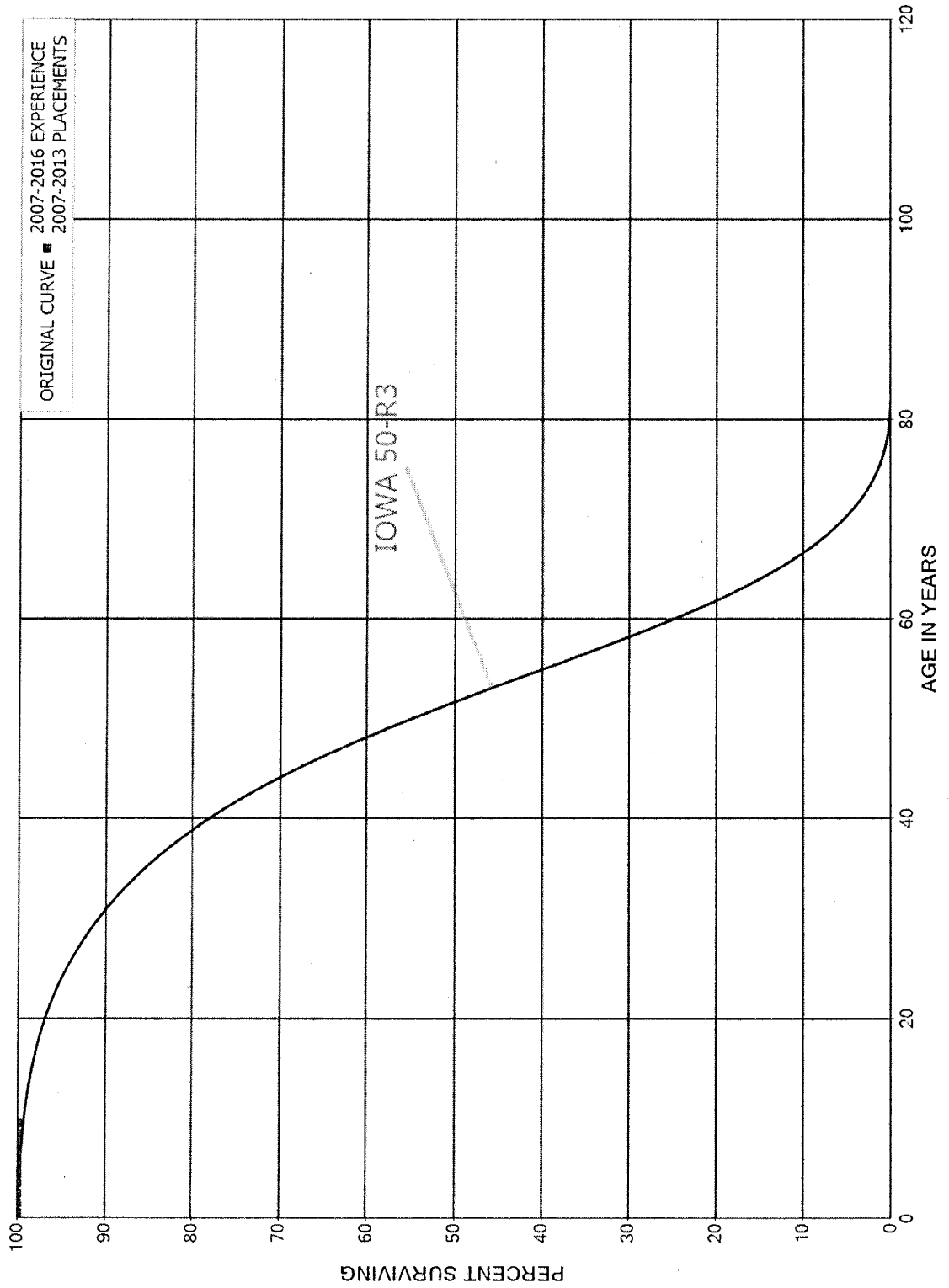
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2009-2010			EXPERIENCE BAND 2009-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	20,918		0.0000	1.0000	100.00
0.5	20,918		0.0000	1.0000	100.00
1.5	20,918		0.0000	1.0000	100.00
2.5	20,918		0.0000	1.0000	100.00
3.5	20,918		0.0000	1.0000	100.00
4.5	20,918		0.0000	1.0000	100.00
5.5	20,918		0.0000	1.0000	100.00
6.5	14,938		0.0000	1.0000	100.00
7.5					100.00

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 370.00 RECEIVING WELLS  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



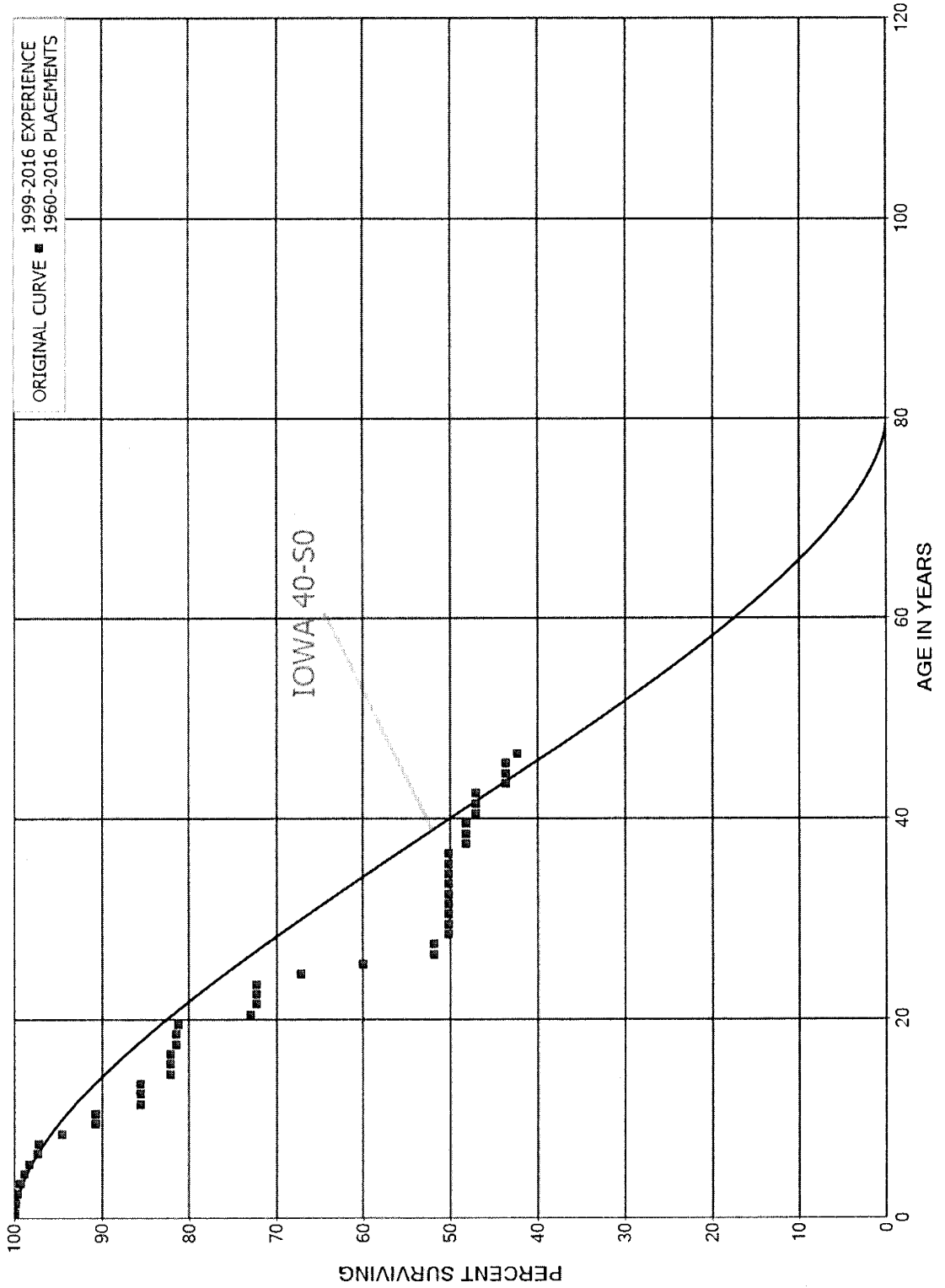
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 370.00 RECEIVING WELLS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2007-2013			EXPERIENCE BAND 2007-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	80,184		0.0000	1.0000	100.00
0.5	80,184		0.0000	1.0000	100.00
1.5	80,184		0.0000	1.0000	100.00
2.5	103,532		0.0000	1.0000	100.00
3.5	99,482		0.0000	1.0000	100.00
4.5	99,482		0.0000	1.0000	100.00
5.5	99,482		0.0000	1.0000	100.00
6.5	99,482		0.0000	1.0000	100.00
7.5	7,370		0.0000	1.0000	100.00
8.5	7,370		0.0000	1.0000	100.00
9.5					100.00

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 371.00 PUMPING EQUIPMENT  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 371.00 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1960-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	5,266,466		0.0000	1.0000	100.00
0.5	4,859,614	5,419	0.0011	0.9989	100.00
1.5	5,249,975	12,306	0.0023	0.9977	99.89
2.5	2,831,007	11,029	0.0039	0.9961	99.65
3.5	2,931,486	11,841	0.0040	0.9960	99.27
4.5	2,880,785	17,097	0.0059	0.9941	98.87
5.5	2,821,624	27,560	0.0098	0.9902	98.28
6.5	2,316,919	4,711	0.0020	0.9980	97.32
7.5	1,189,775	32,395	0.0272	0.9728	97.12
8.5	736,441	28,876	0.0392	0.9608	94.48
9.5	622,994	300	0.0005	0.9995	90.77
10.5	588,105	32,963	0.0560	0.9440	90.73
11.5	486,492	313	0.0006	0.9994	85.64
12.5	320,413		0.0000	1.0000	85.59
13.5	352,056	14,096	0.0400	0.9600	85.59
14.5	337,960		0.0000	1.0000	82.16
15.5	482,224		0.0000	1.0000	82.16
16.5	468,057	3,610	0.0077	0.9923	82.16
17.5	422,643		0.0000	1.0000	81.53
18.5	422,643	1,413	0.0033	0.9967	81.53
19.5	388,534	39,654	0.1021	0.8979	81.25
20.5	300,610	2,936	0.0098	0.9902	72.96
21.5	483,662		0.0000	1.0000	72.25
22.5	523,976		0.0000	1.0000	72.25
23.5	473,600	33,177	0.0701	0.9299	72.25
24.5	299,540	31,555	0.1053	0.8947	67.19
25.5	269,357	37,062	0.1376	0.8624	60.11
26.5	249,890		0.0000	1.0000	51.84
27.5	249,890	8,243	0.0330	0.9670	51.84
28.5	224,052		0.0000	1.0000	50.13
29.5	230,529		0.0000	1.0000	50.13
30.5	129,829		0.0000	1.0000	50.13
31.5	123,353		0.0000	1.0000	50.13
32.5	121,981		0.0000	1.0000	50.13
33.5	136,159		0.0000	1.0000	50.13
34.5	128,989		0.0000	1.0000	50.13
35.5	183,946		0.0000	1.0000	50.13
36.5	183,946	7,008	0.0381	0.9619	50.13
37.5	176,938		0.0000	1.0000	48.22
38.5	118,891		0.0000	1.0000	48.22

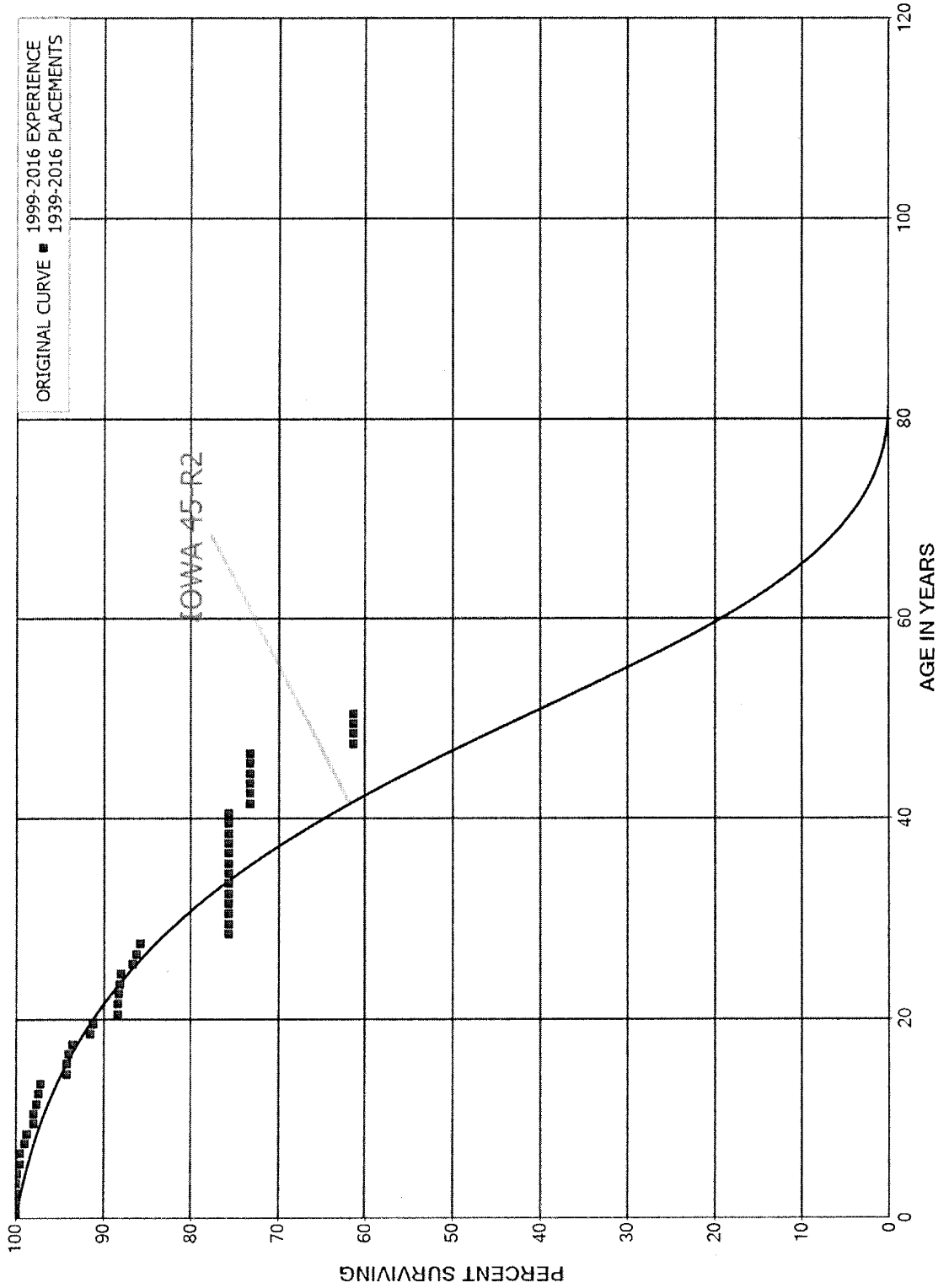
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 371.00 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1960-2016			EXPERIENCE BAND 1999-2016			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
39.5	120,961	2,867	0.0237	0.9763	48.22	
40.5	83,470		0.0000	1.0000	47.08	
41.5	83,470		0.0000	1.0000	47.08	
42.5	83,470	6,122	0.0733	0.9267	47.08	
43.5	28,842		0.0000	1.0000	43.62	
44.5	28,842		0.0000	1.0000	43.62	
45.5	28,842	860	0.0298	0.9702	43.62	
46.5	27,983		0.0000	1.0000	42.32	
47.5	21,408		0.0000	1.0000	42.32	
48.5	5,141		0.0000	1.0000	42.32	
49.5					42.32	

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 380.00 TREATMENT EQUIPMENT  
 ORIGINAL AND SMOOTH SURVIVOR CURVES





PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1939-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	37,997,335		0.0000	1.0000	100.00
0.5	38,568,553		0.0000	1.0000	100.00
1.5	42,480,877	1,853	0.0000	1.0000	100.00
2.5	34,978,179	1,227	0.0000	1.0000	100.00
3.5	32,558,304	53,658	0.0016	0.9984	99.99
4.5	31,831,938	95,360	0.0030	0.9970	99.83
5.5	35,148,560	18,951	0.0005	0.9995	99.53
6.5	26,938,304	155,787	0.0058	0.9942	99.47
7.5	8,534,053	17,293	0.0020	0.9980	98.90
8.5	7,668,896	54,798	0.0071	0.9929	98.70
9.5	8,139,025	7,135	0.0009	0.9991	97.99
10.5	8,440,255	20,843	0.0025	0.9975	97.91
11.5	7,825,451	20,559	0.0026	0.9974	97.67
12.5	8,959,348	25,872	0.0029	0.9971	97.41
13.5	9,706,147	293,655	0.0303	0.9697	97.13
14.5	9,777,841		0.0000	1.0000	94.19
15.5	9,554,764	23,602	0.0025	0.9975	94.19
16.5	9,531,008	46,000	0.0048	0.9952	93.96
17.5	9,751,517	213,101	0.0219	0.9781	93.50
18.5	9,513,633	28,896	0.0030	0.9970	91.46
19.5	9,464,694	287,656	0.0304	0.9696	91.18
20.5	8,996,850	1,948	0.0002	0.9998	88.41
21.5	8,903,624	13,554	0.0015	0.9985	88.39
22.5	8,854,960	13,018	0.0015	0.9985	88.26
23.5	5,432,096	5,076	0.0009	0.9991	88.13
24.5	3,929,482	58,187	0.0148	0.9852	88.05
25.5	3,879,054	22,386	0.0058	0.9942	86.74
26.5	3,851,763	19,073	0.0050	0.9950	86.24
27.5	3,391,370	397,707	0.1173	0.8827	85.81
28.5	2,723,545		0.0000	1.0000	75.75
29.5	2,521,776		0.0000	1.0000	75.75
30.5	1,427,964		0.0000	1.0000	75.75
31.5	1,186,148		0.0000	1.0000	75.75
32.5	552,371		0.0000	1.0000	75.75
33.5	636,258		0.0000	1.0000	75.75
34.5	636,258		0.0000	1.0000	75.75
35.5	631,366		0.0000	1.0000	75.75
36.5	775,020		0.0000	1.0000	75.75
37.5	797,167		0.0000	1.0000	75.75
38.5	778,140		0.0000	1.0000	75.75

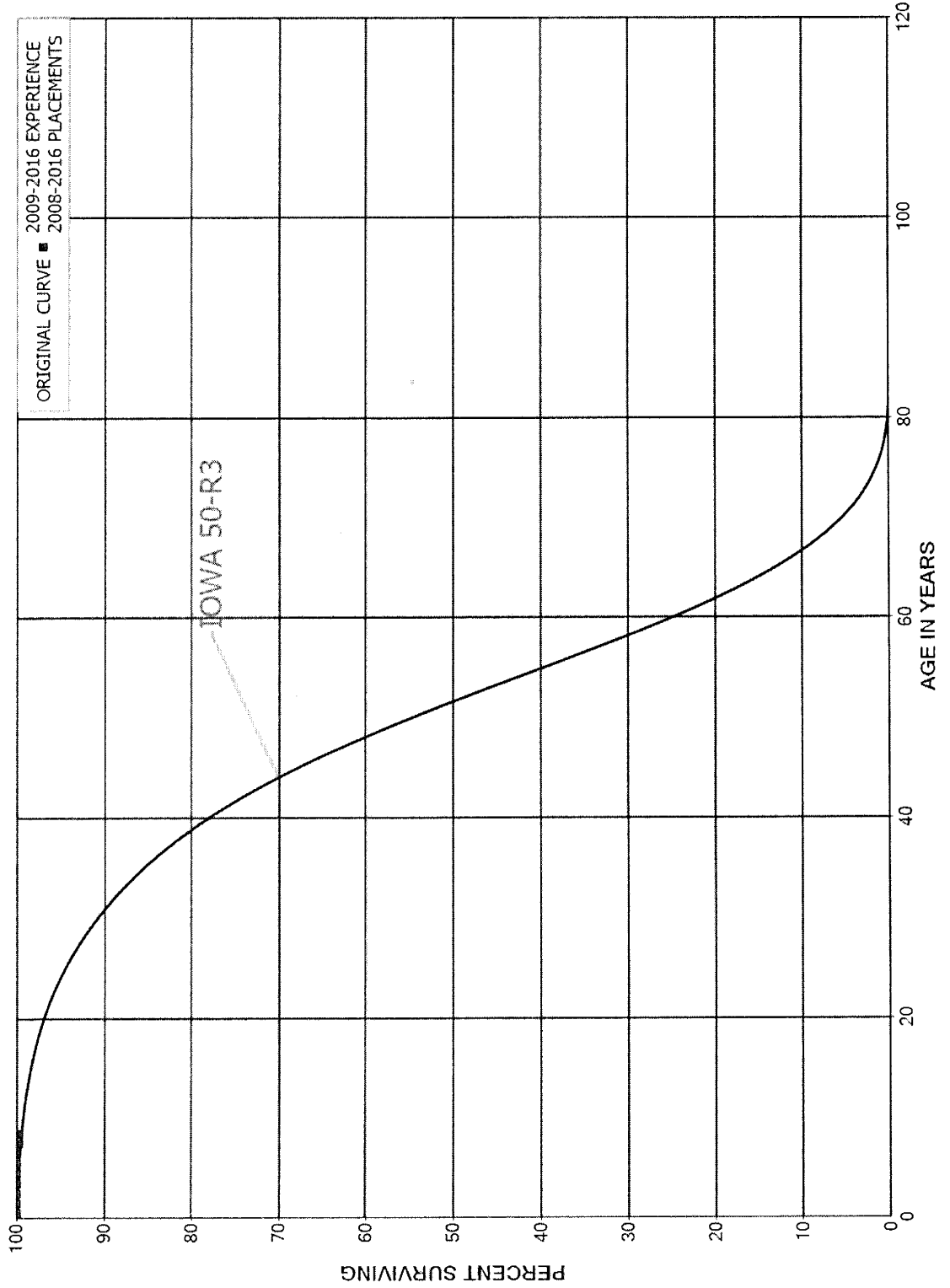
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2016			EXPERIENCE BAND 1999-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	508,613		0.0000	1.0000	75.75
40.5	508,613	16,290	0.0320	0.9680	75.75
41.5	515,644		0.0000	1.0000	73.32
42.5	515,644		0.0000	1.0000	73.32
43.5	514,692		0.0000	1.0000	73.32
44.5	514,692		0.0000	1.0000	73.32
45.5	514,692		0.0000	1.0000	73.32
46.5	371,038	60,316	0.1626	0.8374	73.32
47.5	288,575		0.0000	1.0000	61.40
48.5	288,575		0.0000	1.0000	61.40
49.5	107,497		0.0000	1.0000	61.40
50.5	107,497		0.0000	1.0000	61.40
51.5	23,321		0.0000	1.0000	61.40
52.5	23,321		0.0000	1.0000	61.40
53.5	23,321		0.0000	1.0000	61.40
54.5	23,321		0.0000	1.0000	61.40
55.5	23,321		0.0000	1.0000	61.40
56.5	23,321		0.0000	1.0000	61.40
57.5	23,321		0.0000	1.0000	61.40
58.5	23,321		0.0000	1.0000	61.40
59.5	1,894		0.0000	1.0000	61.40
60.5	1,894		0.0000	1.0000	61.40
61.5	1,894		0.0000	1.0000	61.40
62.5	1,894		0.0000	1.0000	61.40
63.5	1,894		0.0000	1.0000	61.40
64.5	1,894		0.0000	1.0000	61.40
65.5	1,894		0.0000	1.0000	61.40
66.5	1,894		0.0000	1.0000	61.40
67.5	1,894		0.0000	1.0000	61.40
68.5	1,894		0.0000	1.0000	61.40
69.5	1,894		0.0000	1.0000	61.40
70.5	1,894		0.0000	1.0000	61.40
71.5	1,894		0.0000	1.0000	61.40
72.5	1,894		0.0000	1.0000	61.40
73.5	1,894		0.0000	1.0000	61.40
74.5	1,894		0.0000	1.0000	61.40
75.5	1,894		0.0000	1.0000	61.40
76.5	1,894		0.0000	1.0000	61.40
77.5					61.40

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 381.00 PLANT SEWERS  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



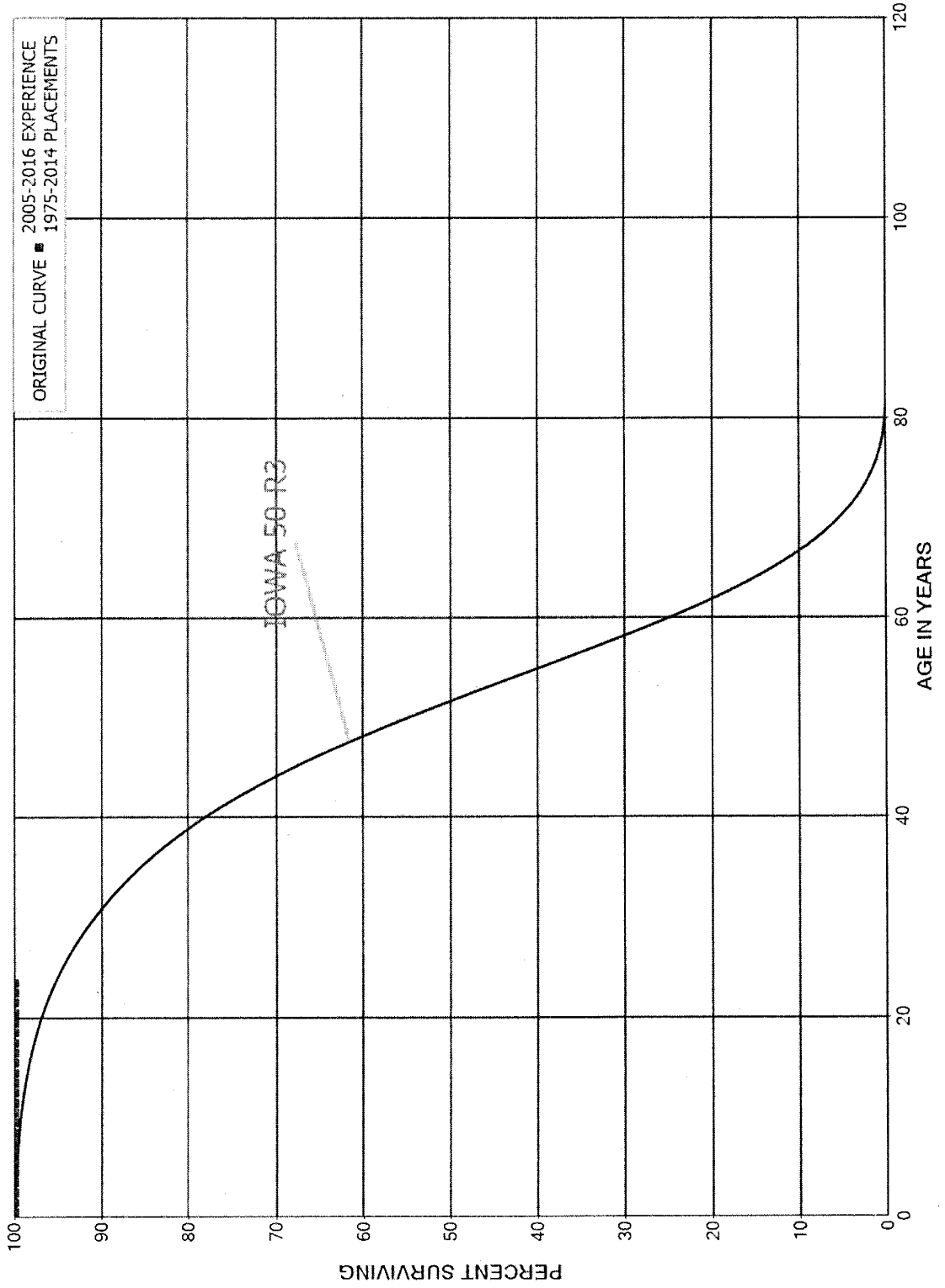
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 381.00 PLANT SEWERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2008-2016			EXPERIENCE BAND 2009-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	5,730,198		0.0000	1.0000	100.00
0.5	6,388,785		0.0000	1.0000	100.00
1.5	6,381,327		0.0000	1.0000	100.00
2.5	5,940,945		0.0000	1.0000	100.00
3.5	5,940,945		0.0000	1.0000	100.00
4.5	5,939,261		0.0000	1.0000	100.00
5.5	5,930,543		0.0000	1.0000	100.00
6.5	4,742,579	13,300	0.0028	0.9972	100.00
7.5	294,412		0.0000	1.0000	99.72
8.5					99.72

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 382.00 OUTFALL SEWER LINES  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 382.00 OUTFALL SEWER LINES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1975-2014			EXPERIENCE BAND 2005-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	216,564		0.0000	1.0000	100.00
0.5	216,564		0.0000	1.0000	100.00
1.5	417,687		0.0000	1.0000	100.00
2.5	255,003		0.0000	1.0000	100.00
3.5	255,003		0.0000	1.0000	100.00
4.5	255,003		0.0000	1.0000	100.00
5.5	255,003		0.0000	1.0000	100.00
6.5	236,416		0.0000	1.0000	100.00
7.5	212,060		0.0000	1.0000	100.00
8.5	212,060		0.0000	1.0000	100.00
9.5	212,060		0.0000	1.0000	100.00
10.5	10,937		0.0000	1.0000	100.00
11.5	34,425		0.0000	1.0000	100.00
12.5	32,729		0.0000	1.0000	100.00
13.5	32,729		0.0000	1.0000	100.00
14.5	32,729		0.0000	1.0000	100.00
15.5	32,729		0.0000	1.0000	100.00
16.5	32,729		0.0000	1.0000	100.00
17.5	32,729		0.0000	1.0000	100.00
18.5	32,729		0.0000	1.0000	100.00
19.5	32,729		0.0000	1.0000	100.00
20.5	32,729		0.0000	1.0000	100.00
21.5	202,476		0.0000	1.0000	100.00
22.5	202,476		0.0000	1.0000	100.00
23.5					100.00
24.5					
25.5					
26.5					
27.5					
28.5					
29.5					
30.5					
31.5					
32.5					
33.5					
34.5					
35.5					
36.5	4,984		0.0000		
37.5	4,984		0.0000		
38.5	4,984		0.0000		

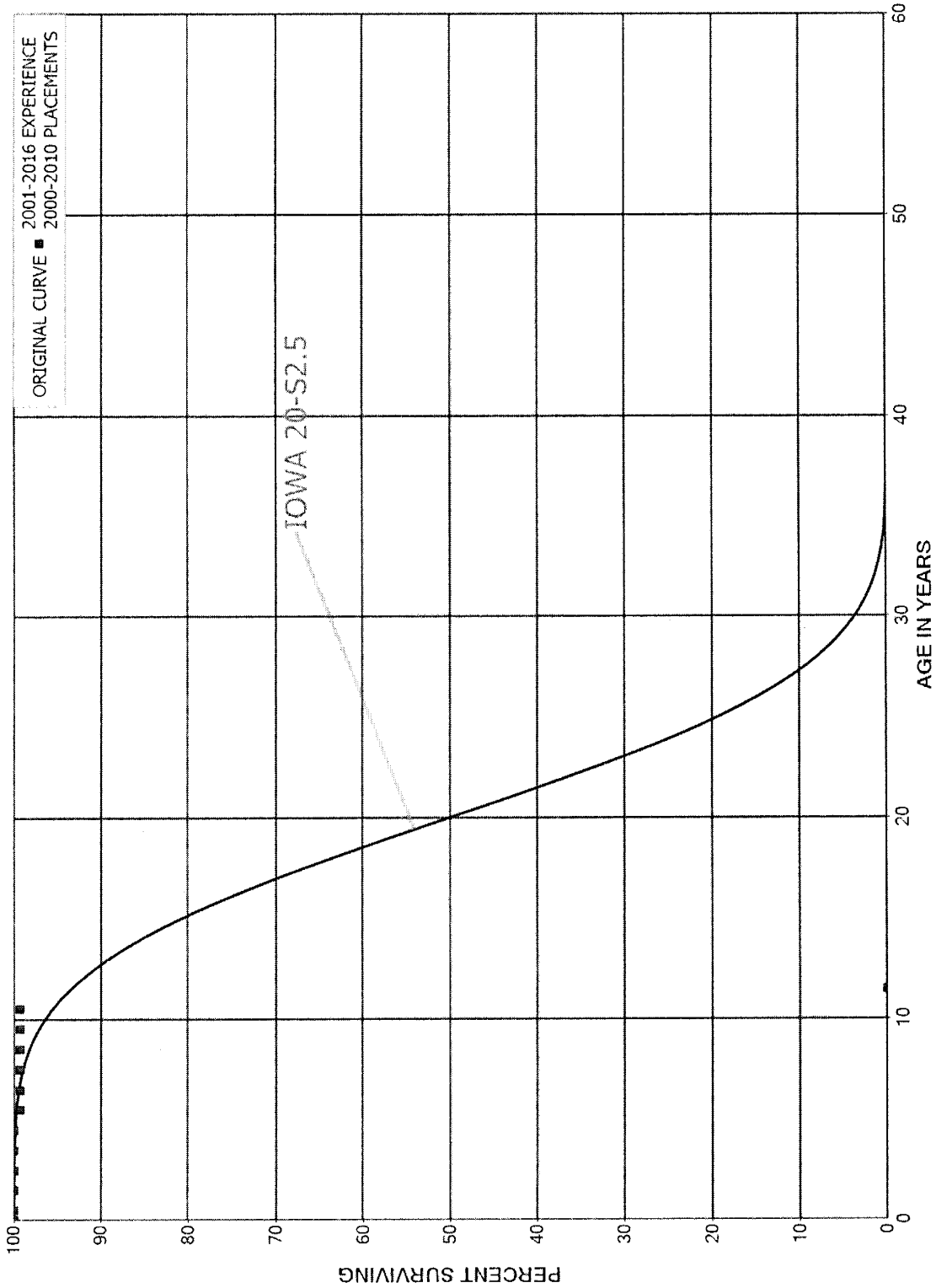
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 382.00 OUTFALL SEWER LINES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1975-2014			EXPERIENCE BAND 2005-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	4,984		0.0000		
40.5	4,984		0.0000		
41.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT  
 ORIGINAL AND SMOOTH SURVIVOR CURVES





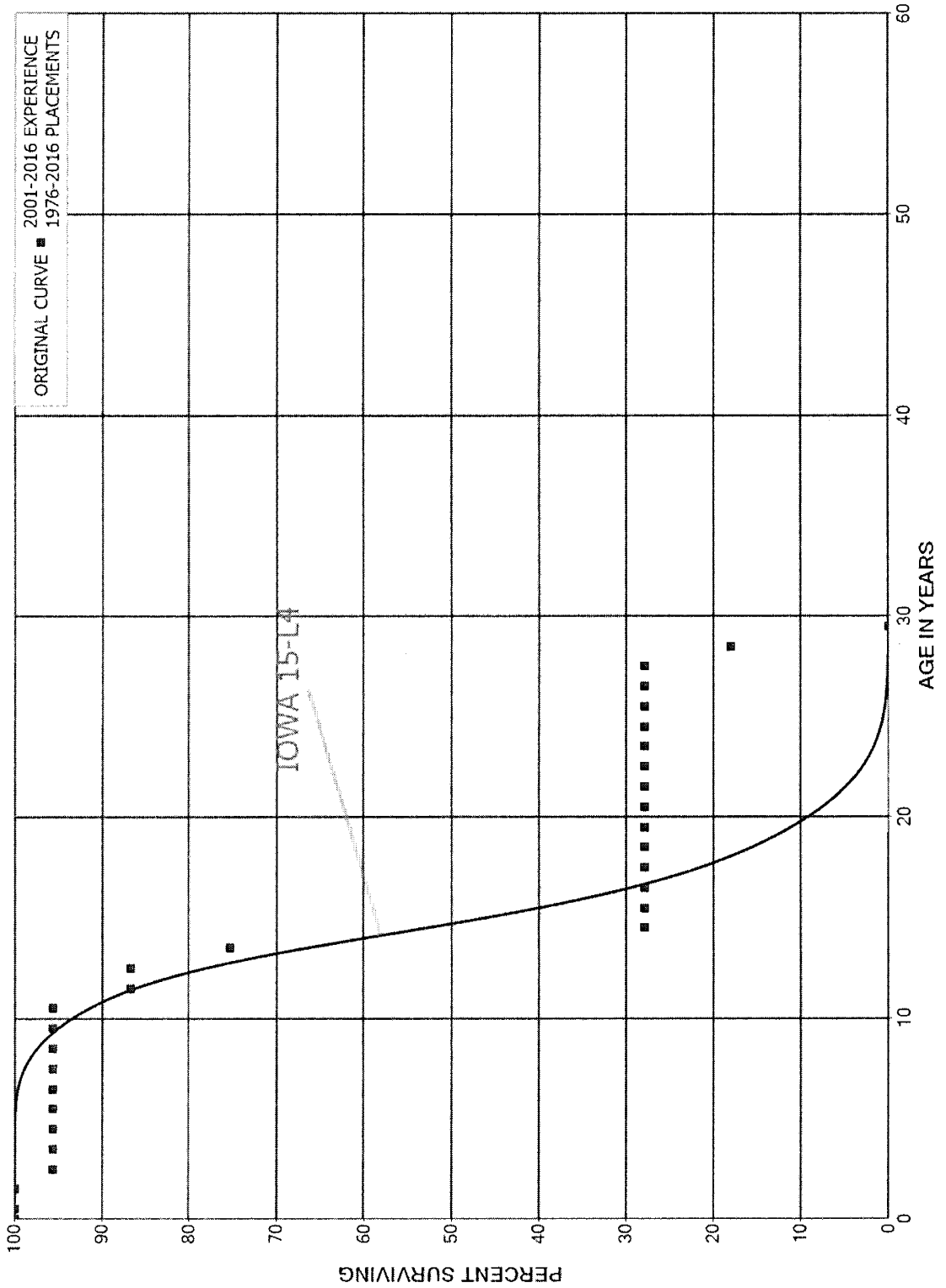
PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 2000-2010			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	284,639		0.0000	1.0000	100.00
0.5	396,350		0.0000	1.0000	100.00
1.5	396,350		0.0000	1.0000	100.00
2.5	396,350		0.0000	1.0000	100.00
3.5	396,350		0.0000	1.0000	100.00
4.5	396,350	2,997	0.0076	0.9924	100.00
5.5	393,353		0.0000	1.0000	99.24
6.5	120,204		0.0000	1.0000	99.24
7.5	120,204		0.0000	1.0000	99.24
8.5	8,492		0.0000	1.0000	99.24
9.5	8,492		0.0000	1.0000	99.24
10.5	8,492	8,492	1.0000		99.24
11.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 391.00 TRANSPORTATION EQUIPMENT  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



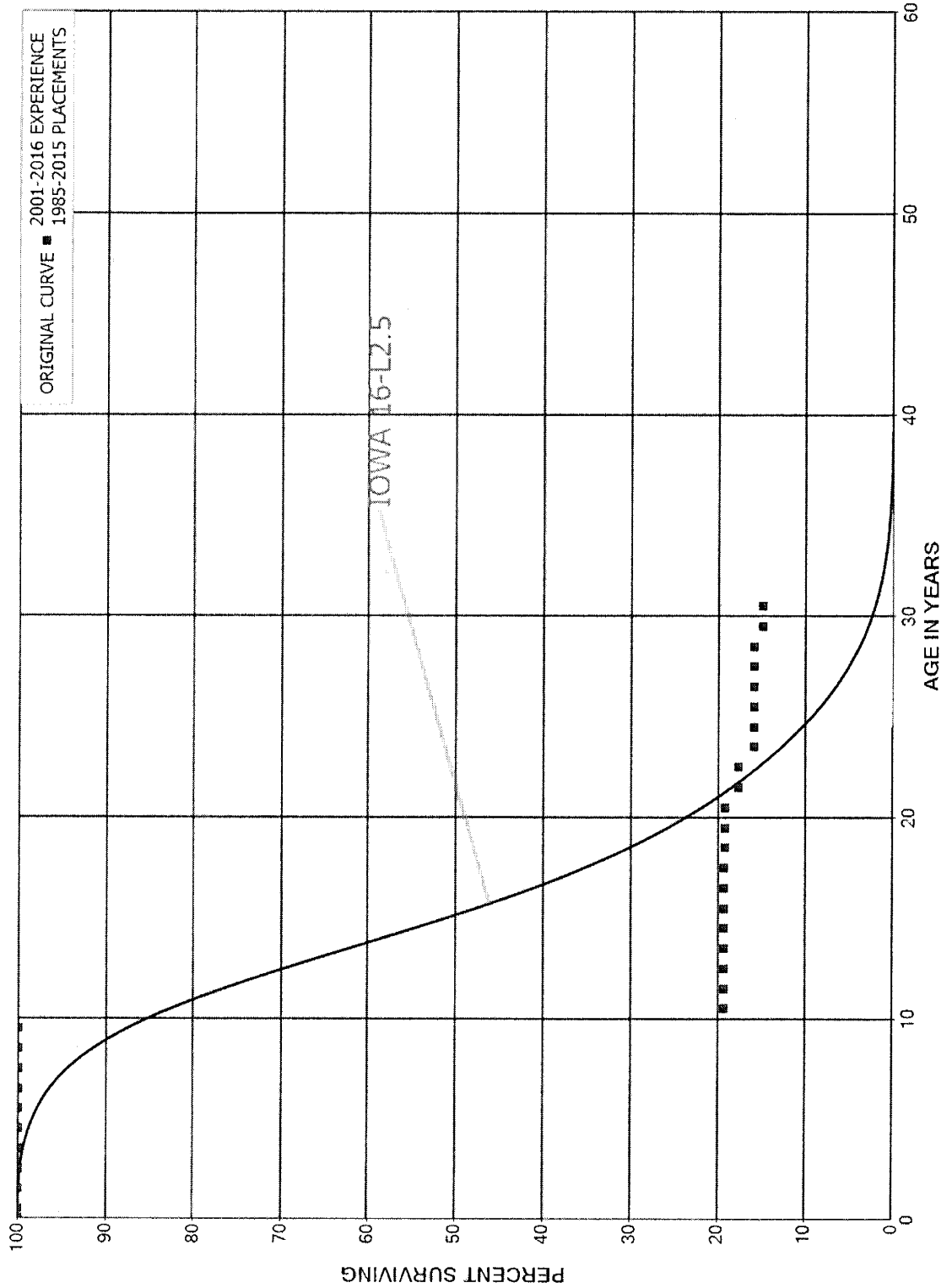
PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1976-2016			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	335,262		0.0000	1.0000	100.00
0.5	332,838		0.0000	1.0000	100.00
1.5	332,838	14,523	0.0436	0.9564	100.00
2.5	342,015		0.0000	1.0000	95.64
3.5	323,883		0.0000	1.0000	95.64
4.5	294,254		0.0000	1.0000	95.64
5.5	155,686		0.0000	1.0000	95.64
6.5	155,686		0.0000	1.0000	95.64
7.5	155,686		0.0000	1.0000	95.64
8.5	155,686		0.0000	1.0000	95.64
9.5	161,186		0.0000	1.0000	95.64
10.5	160,072	15,000	0.0937	0.9063	95.64
11.5	145,072		0.0000	1.0000	86.67
12.5	145,072	19,000	0.1310	0.8690	86.67
13.5	126,072	79,500	0.6306	0.3694	75.32
14.5	23,700		0.0000	1.0000	27.82
15.5	44,400		0.0000	1.0000	27.82
16.5	23,700		0.0000	1.0000	27.82
17.5	23,700		0.0000	1.0000	27.82
18.5	9,155		0.0000	1.0000	27.82
19.5	9,155		0.0000	1.0000	27.82
20.5	9,155		0.0000	1.0000	27.82
21.5	9,155		0.0000	1.0000	27.82
22.5	9,155		0.0000	1.0000	27.82
23.5	9,155		0.0000	1.0000	27.82
24.5	14,155		0.0000	1.0000	27.82
25.5	14,155		0.0000	1.0000	27.82
26.5	14,155		0.0000	1.0000	27.82
27.5	14,155	5,000	0.3532	0.6468	27.82
28.5	9,155	9,155	1.0000		18.00
29.5					

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)  
 ACCOUNT 395.00 POWER OPERATED EQUIPMENT  
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1985-2015			EXPERIENCE BAND 2001-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	59,184		0.0000	1.0000	100.00
0.5	59,184		0.0000	1.0000	100.00
1.5	55,927		0.0000	1.0000	100.00
2.5	55,927		0.0000	1.0000	100.00
3.5	55,927		0.0000	1.0000	100.00
4.5	445,228		0.0000	1.0000	100.00
5.5	99,592		0.0000	1.0000	100.00
6.5	99,592		0.0000	1.0000	100.00
7.5	109,591		0.0000	1.0000	100.00
8.5	109,591		0.0000	1.0000	100.00
9.5	122,373	98,717	0.8067	0.1933	100.00
10.5	23,656		0.0000	1.0000	19.33
11.5	23,656		0.0000	1.0000	19.33
12.5	96,441		0.0000	1.0000	19.33
13.5	169,091		0.0000	1.0000	19.33
14.5	96,306		0.0000	1.0000	19.33
15.5	96,802		0.0000	1.0000	19.33
16.5	117,685		0.0000	1.0000	19.33
17.5	117,685	875	0.0074	0.9926	19.33
18.5	116,810		0.0000	1.0000	19.19
19.5	116,810		0.0000	1.0000	19.19
20.5	124,335	9,999	0.0804	0.9196	19.19
21.5	124,336		0.0000	1.0000	17.64
22.5	124,336	12,782	0.1028	0.8972	17.64
23.5	18,021		0.0000	1.0000	15.83
24.5	8,021		0.0000	1.0000	15.83
25.5	8,021		0.0000	1.0000	15.83
26.5	8,021		0.0000	1.0000	15.83
27.5	8,021		0.0000	1.0000	15.83
28.5	8,021	496	0.0618	0.9382	15.83
29.5	7,525		0.0000	1.0000	14.85
30.5					14.85

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**PART VII. DETAILED DEPRECIATION  
CALCULATIONS**

**CUMULATIVE DEPRECIATED ORIGINAL COST**

**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017**

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT (2)-(3) (4)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
1915	50,248	42,268	7,980	7,980	0.00
1920	126,917	104,836	22,081	30,061	0.01
1929	16,539	13,304	3,235	33,296	0.01
1930	193,669	153,527	40,142	73,437	0.03
1932	602	602	0	73,437	0.03
1935	38,693	29,916	8,777	82,215	0.03
1939	228,752	173,089	55,663	137,878	0.06
1945	42,534	30,796	11,738	149,616	0.06
1955	45,279	29,979	15,300	164,916	0.07
1957	1,846,690	1,267,597	579,093	744,008	0.30
1961	402,654	365,835	36,819	780,828	0.31
1962	32,638	20,264	12,374	793,202	0.32
1965	844,697	555,931	288,766	1,081,968	0.44
1967	265,993	235,523	30,470	1,112,438	0.45
1968	81,659	47,727	33,932	1,146,370	0.46
1969	515,602	283,668	231,934	1,378,304	0.55
1970	488	363	125	1,378,429	0.55
1971	550	406	144	1,378,574	0.56
1972	1,042	882	160	1,378,734	0.56
1973	241,357	46,962	194,395	1,573,128	0.63
1974	1,646,581	185,954	1,460,627	3,033,755	1.22
1975	2,858,878	1,182,970	1,675,908	4,709,663	1.90
1976	1,449,147	340,881	1,108,266	5,817,930	2.34
1977	1,050,487	424,327	626,160	6,444,090	2.59
1978	401,701	95,277	306,424	6,750,514	2.72
1979	147,997	47,619	100,378	6,850,892	2.76
1980	441,773	249,100	192,673	7,043,565	2.84
1981	237,460	60,624	176,836	7,220,402	2.91
1982	194,751	95,073	99,678	7,320,079	2.95
1983	876,106	380,307	495,799	7,815,878	3.15
1984	3,071,882	1,619,744	1,452,138	9,268,017	3.73
1985	2,226,275	1,040,273	1,186,002	10,454,018	4.21
1986	2,970,332	1,782,682	1,187,650	11,641,668	4.69
1987	1,578,789	780,045	798,744	12,440,412	5.01
1988	3,125,642	1,387,796	1,737,846	14,178,258	5.71
1989	3,289,266	1,323,247	1,966,019	16,144,277	6.50
1990	301,602	115,226	186,376	16,330,654	6.57
1991	570,867	342,115	228,752	16,559,406	6.67
1992	4,159,528	2,131,819	2,027,709	18,587,115	7.48
1993	11,822,967	4,720,501	7,102,466	25,689,581	10.34
1994	896,519	275,186	621,333	26,310,914	10.59
1995	890,160	268,261	621,899	26,932,813	10.84
1996	1,213,113	417,522	795,591	27,728,404	11.16
1997	6,494,072	1,535,640	4,958,432	32,686,836	13.16
1998	3,598,576	1,020,641	2,577,935	35,264,771	14.20
1999	507,898	130,208	377,690	35,642,461	14.35
2000	8,727,237	2,622,693	6,104,544	41,747,005	16.81
2001	2,859,157	647,568	2,211,589	43,958,594	17.70
2002	2,866,451	689,907	2,176,544	46,135,138	18.57
2003	1,660,224	482,823	1,177,401	47,312,539	19.05
2004	4,061,615	616,191	3,445,424	50,757,963	20.44
2005	6,774,185	1,595,433	5,178,752	55,936,715	22.52
2006	5,694,313	1,122,871	4,571,442	60,508,157	24.36
2007	8,066,928	1,176,833	6,890,095	67,398,252	27.14
2008	10,603,403	1,716,327	8,887,076	76,285,327	30.71
2009	58,469,806	11,555,857	46,913,949	123,199,276	49.60



**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017**

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT (2)-(3) (4)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
2010	23,315,974	3,739,686	19,576,288	142,775,564	57.48
2011	1,583,631	363,057	1,220,574	143,996,138	57.97
2012	2,778,127	347,553	2,430,574	146,426,712	58.95
2013	9,481,852	822,957	8,658,895	155,085,607	62.44
2014	45,299,682	3,930,361	41,369,321	196,454,928	79.10
2015	18,355,262	1,123,346	17,231,916	213,686,844	86.03
2016	11,586,929	263,924	11,323,005	225,009,849	90.59
2017	23,582,169	214,221	23,367,948	248,377,797	100.00
SUBTOTAL	306,765,918	58,388,120	248,377,797		
UNDATED	(36,411,426)	(5,184,949)	(31,226,477)		
NONDEPRECIABLE	2,952,709	0	2,952,709		
TOTAL	273,307,201	53,203,171	220,104,029		

**NET UTILITY PLANT IN SERVICE**

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R3						
NET SALVAGE PERCENT.. 0						
2007	20,658.88	4,655	4,358	16,301	34.86	468
2008	113,755.87	23,231	21,751	92,005	35.81	2,569
2009	178,514.40	32,727	30,642	147,872	36.75	4,024
2011	8,586.64	1,208	1,131	7,456	38.67	193
2013	64,846.18	6,341	5,937	58,909	40.60	1,451
2014	14,766.25	1,125	1,053	13,713	41.57	330
2015	41,897.14	2,281	2,136	39,761	42.55	934
2016	36,271.50	1,185	1,109	35,162	43.53	808
2017	3,066,760.00	33,397	31,269	3,035,491	44.51	68,198
	3,546,056.86	106,150	99,386	3,446,671		78,975

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 43.6 2.23

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
1965	47,875.41	37,486	47,875			
1967	12,365.71	9,467	12,366			
1976	26,076.09	17,492	26,076			
1977	28,881.67	19,021	28,882			
1978	11,076.31	7,158	11,076			
1980	3,231.60	2,006	3,232			
1982	29,357.73	17,438	29,358			
1983	86,164.48	49,993	86,164			
1984	48,798.38	27,639	48,798			
1985	142,433.53	78,652	139,455	2,979	22.39	133
1986	474,332.89	255,096	452,301	22,032	23.11	953
1987	29,562.99	15,467	27,424	2,139	23.84	90
1988	100,025.42	50,853	90,166	9,859	24.58	401
1989	54,264.19	26,774	47,472	6,792	25.33	268
1991	284,541.55	131,686	233,487	51,055	26.86	1,901
1992	324,694.16	145,268	257,569	67,125	27.63	2,429
1993	485,862.37	209,698	371,808	114,054	28.42	4,013
1994	48,949.15	20,343	36,069	12,880	29.22	441
1996	24,115.45	9,241	16,385	7,730	30.84	251
1997	104,239.50	38,235	67,793	36,446	31.66	1,151
1998	223,580.68	78,298	138,827	84,754	32.49	2,609
1999	11,133.45	3,712	6,582	4,551	33.33	137
2000	7,021.81	2,222	3,940	3,082	34.18	90
2001	178,660.68	53,491	94,843	83,818	35.03	2,393
2002	9,705.71	2,739	4,856	4,850	35.89	135
2003	270,609.99	71,658	127,054	143,556	36.76	3,905
2004	101,245.66	25,028	44,376	56,870	37.64	1,511
2005	9,100.94	2,090	3,706	5,395	38.52	140
2006	927,410.86	196,426	348,275	579,136	39.41	14,695
2007	515,909.63	100,086	177,459	338,451	40.30	8,398
2008	50,178.93	8,831	15,658	34,521	41.20	838
2009	2,929,509.32	462,277	819,646	2,109,863	42.11	50,104
2010	1,288,827.11	179,920	319,009	969,818	43.02	22,543
2011	14,559.27	1,767	3,133	11,426	43.93	260
2013	181,519.27	15,320	27,163	154,356	45.78	3,372
2014	6,961,301.80	458,054	812,159	6,149,143	46.71	131,645
2015	1,551,663.87	72,928	129,306	1,422,358	47.65	29,850

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
2016	544,504.34	15,355	27,225	517,279	48.59	10,646
2017	108,850.00	1,023	1,814	107,036	49.53	2,161
9999	2,734,528.70-	437,509-	769,891-	1,964,637-		44,566-
	15,517,613.20	2,482,729	4,368,896	11,148,718		252,897
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 44.1						1.63

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2						
NET SALVAGE PERCENT.. 0						
1932	602.40	510	602			
1957	140,486.42	96,806	135,272	5,214	20.21	258
1961	391,131.16	256,641	358,617	32,514	22.35	1,455
1965	53,961.55	33,506	46,820	7,142	24.64	290
1967	67,934.06	40,938	57,205	10,729	25.83	415
1973	38,481.00	20,951	29,276	9,205	29.61	311
1975	419,410.21	219,771	307,096	112,314	30.94	3,630
1976	50,336.60	25,857	36,131	14,206	31.61	449
1977	8,681.00	4,369	6,105	2,576	32.29	80
1984	693,417.71	295,930	413,517	279,901	37.26	7,512
1985	133,860.33	55,624	77,726	56,134	37.99	1,478
1986	246,413.42	99,551	139,107	107,306	38.74	2,770
1987	821,866.00	322,550	450,714	371,152	39.49	9,399
1988	1,266,453.86	482,418	674,105	592,349	40.24	14,720
1989	17,260.28	6,370	8,901	8,359	41.01	204
1991	123,376.00	42,612	59,544	63,832	42.55	1,500
1992	1,496,329.14	498,846	697,061	799,268	43.33	18,446
1993	319,290.14	102,566	143,320	175,970	44.12	3,988
1994	16,680.06	5,155	7,203	9,477	44.91	211
1995	11,077.00	3,287	4,593	6,484	45.71	142
1996	602,783.45	171,468	239,600	363,183	46.51	7,809
1997	69,732.72	18,967	26,503	43,230	47.32	914
1998	600,489.64	155,755	217,644	382,846	48.14	7,953
2000	6,605,956.92	1,546,785	2,161,396	4,444,561	49.78	89,284
2001	461,562.96	102,181	142,782	318,781	50.61	6,299
2002	162,693.43	33,915	47,391	115,302	51.45	2,241
2004	15,555.13	2,841	3,970	11,585	53.13	218
2005	537,200.04	90,991	127,146	410,054	53.99	7,595
2006	451,068.80	70,507	98,523	352,546	54.84	6,429
2007	24,985.47	3,575	4,996	19,989	55.70	359
2008	163,724.12	21,233	29,670	134,054	56.57	2,370
2009	16,500,764.39	1,919,204	2,681,794	13,818,970	57.44	240,581
2010	5,022,247.56	516,890	722,275	4,299,973	58.31	73,743
2011	293,205.72	26,207	36,620	256,586	59.19	4,335
2012	9,700.00	736	1,028	8,672	60.07	144
2013	162,285.83	10,086	14,094	148,192	60.96	2,431
2014	12,894,243.39	624,855	873,139	12,021,104	61.85	194,359

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2						
NET SALVAGE PERCENT.. 0						
2015	44,549.99	1,542	2,155	42,395	62.75	676
2016	18,625.77	390	545	18,081	63.64	284
9999	1,853,012.73-	288,447-	403,057-	1,449,956-		26,010-
	49,105,410.94	7,643,939	10,681,129	38,424,282		689,272
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 55.7						1.40

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-S1						
NET SALVAGE PERCENT.. 0						
1939	3,482.90	3,483	3,483			
1972	448.26	355	448			
1984	11,229.31	7,421	11,229			
1992	14,940.67	8,260	14,941			
1993	16,958.04	9,119	16,958			
1994	29,175.13	15,238	29,175			
1997	5,847.85	2,769	5,848			
2002	1,065.49	407	1,065			
2003	42,860.71	15,503	42,861			
2007	16,187.76	4,459	16,188			
2008	362,785.34	91,422	362,785			
2009	80,897.94	18,468	80,898			
2010	38,926.77	7,919	38,927			
2011	7,104.00	1,267	7,104			
2012	28,462.38	4,335	25,010	3,452	29.67	116
2013	25,255.98	3,175	18,317	6,939	30.60	227
2014	413,646.40	40,773	235,231	178,415	31.55	5,655
2015	1,021,916.98	72,413	417,772	604,145	32.52	18,578
2016	9,177.62	391	2,256	6,922	33.51	207
2017	5,000.00	71	410	4,590	34.50	133
	2,135,369.53	307,248	1,330,906	804,464		24,916

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.3 1.17



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-R2.5						
NET SALVAGE PERCENT.. 0						
1983	14,623.26	11,030	14,623			
1987	16,418.52	11,409	16,419			
1989	43,517.85	28,771	43,518			
1992	81,295.83	49,312	81,296			
1993	187,435.23	110,051	187,435			
1994	19,081.38	10,827	19,081			
1997	29,223.93	14,762	29,224			
1998	12,140.75	5,873	12,141			
2001	37,585.01	15,668	37,585			
2002	66,372.16	26,131	66,372			
2005	69,290.10	22,351	58,498	10,792	23.71	455
2007	16,535.65	4,521	11,833	4,703	25.43	185
2008	228,603.48	56,824	148,723	79,880	26.30	3,037
2009	2,899,710.12	647,882	1,695,676	1,204,034	27.18	44,299
2010	20,547.69	4,062	10,631	9,917	28.08	353
2011	14,297.24	2,459	6,436	7,861	28.98	271
2012	27,518.56	4,026	10,537	16,982	29.88	568
2013	26,653.86	3,198	8,370	18,284	30.80	594
2014	901,052.47	84,438	220,996	680,056	31.72	21,439
2015	90,665.62	6,087	15,931	74,735	32.65	2,289
2016	10,472.02	422	1,105	9,367	33.59	279
2017	850,000.00	11,416	29,879	820,121	34.53	23,751
9999	144,517.16-	28,876-	69,575-	74,943-		2,489-
	5,518,523.57	1,102,644	2,656,734	2,861,789		95,031

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 30.1 1.72

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-S2						
NET SALVAGE PERCENT.. 0						
1957	19,260.35	13,248	1,791	17,469	21.85	799
1965	13,337.78	8,395	1,135	12,203	25.94	470
1973	199,477.92	111,935	15,131	184,347	30.72	6,001
1974	1,503,776.46	829,874	112,181	1,391,595	31.37	44,361
1975	849,779.52	460,827	62,294	787,486	32.04	24,578
1976	1,013,708.88	540,013	72,998	940,711	32.71	28,759
1977	458,850.00	239,914	32,431	426,419	33.40	12,767
1978	270,355.19	138,614	18,738	251,617	34.11	7,377
1979	73,749.33	37,064	5,010	68,739	34.82	1,974
1980	75,105.93	36,963	4,997	70,109	35.55	1,972
1981	160,944.25	77,506	10,477	150,467	36.29	4,146
1982	53,478.41	25,173	3,403	50,075	37.05	1,352
1983	192,381.70	88,469	11,959	180,423	37.81	4,772
1985	309,939.29	135,533	18,321	291,618	39.39	7,403
1986	93,600.62	39,861	5,388	88,213	40.19	2,195
1987	225,949.78	93,575	12,649	213,301	41.01	5,201
1988	404,167.30	162,592	21,979	382,188	41.84	9,135
1989	92,110.83	35,936	4,858	87,253	42.69	2,044
1991	75,459.60	27,586	3,729	71,731	44.41	1,615
1992	34,682.29	12,243	1,655	33,027	45.29	729
1993	542,846.21	184,725	24,971	517,875	46.18	11,214
1994	316,329.79	103,576	14,001	302,329	47.08	6,422
1996	132,298.94	39,860	5,388	126,911	48.91	2,595
1997	1,385,627.69	399,061	53,944	1,331,684	49.84	26,719
1998	466,886.30	128,193	17,329	449,557	50.78	8,853
1999	210,238.89	54,872	7,418	202,821	51.73	3,921
2000	489,230.36	121,050	16,363	472,867	52.68	8,976
2001	874,316.30	204,336	27,622	846,694	53.64	15,785
2002	556,204.52	122,287	16,531	539,674	54.61	9,882
2003	385,945.70	79,505	10,747	375,199	55.58	6,751
2004	2,024,605.33	388,724	52,547	1,972,058	56.56	34,867
2005	181,427.72	32,269	4,362	177,066	57.55	3,077
2006	1,574,938.13	258,069	34,885	1,540,053	58.53	26,312
2007	1,291,675.57	193,377	26,140	1,265,536	59.52	21,262
2008	3,009,439.71	407,990	55,152	2,954,288	60.51	48,823
2009	605,043.84	73,386	9,920	595,124	61.51	9,675
2010	416,803.74	44,656	6,037	410,767	62.50	6,572
2013	259,083.62	16,656	2,252	256,832	65.50	3,921
2014	4,335,920.72	216,796	29,306	4,306,615	66.50	64,761
2015	2,381,716.21	85,051	11,497	2,370,219	67.50	35,114

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-S2						
NET SALVAGE PERCENT.. 0						
2016	3,105,739.49	66,556	8,997	3,096,742	68.50	45,208
2017	2,024,391.00	14,454	1,953	2,022,438	69.50	29,100
9999	11,450,654.75-	2,224,492-	300,703-	11,149,952-		209,273-
	21,240,170.46	4,126,278	557,783	20,682,387		388,187
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						53.3 1.83

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. 0						
1915	50,247.83	45,352	42,268	7,980	6.82	1,170
1920	126,917.18	112,485	104,836	22,081	7.96	2,774
1929	15,879.57	13,568	12,645	3,235	10.19	317
1930	193,668.51	164,729	153,527	40,142	10.46	3,838
1935	38,693.16	32,099	29,916	8,777	11.93	736
1939	173,923.67	140,953	131,368	42,556	13.27	3,207
1945	42,533.75	33,043	30,796	11,738	15.62	751
1955	36,628.98	25,892	24,131	12,498	20.52	609
1957	1,468,833.78	1,014,759	945,752	523,082	21.64	24,172
1961	10,628.83	6,982	6,507	4,122	24.02	172
1962	29,671.33	19,227	17,920	11,751	24.64	477
1965	541,662.68	336,140	313,281	228,382	26.56	8,599
1968	34,055.53	20,161	18,790	15,266	28.56	535
1969	415,559.14	241,976	225,521	190,038	29.24	6,499
1974	112,833.85	59,979	55,900	56,934	32.79	1,736
1975	1,403,869.92	731,613	681,861	722,009	33.52	21,540
1976	244,636.16	124,904	116,410	128,226	34.26	3,743
1977	178,887.87	89,419	83,338	95,550	35.01	2,729
1978	78,842.24	38,565	35,942	42,900	35.76	1,200
1979	32,410.28	15,502	14,448	17,962	36.52	492
1982	45,446.29	20,224	18,849	26,597	38.85	685
1983	440,797.62	191,244	178,239	262,559	39.63	6,625
1984	1,338,479.32	565,414	526,964	811,515	40.43	20,072
1985	800,999.05	329,211	306,824	494,175	41.23	11,986
1986	624,017.44	249,339	232,383	391,634	42.03	9,318
1987	70,117.59	27,196	25,347	44,771	42.85	1,045
1988	803,638.58	302,281	281,725	521,914	43.67	11,951
1989	2,332,976.17	850,207	792,390	1,540,586	44.49	34,628
1990	220,536.68	77,755	72,467	148,070	45.32	3,267
1992	363,399.11	119,402	111,282	252,117	47.00	5,364
1993	5,832,849.31	1,845,689	1,720,177	4,112,672	47.85	85,949
1994	239,665.52	72,928	67,969	171,697	48.70	3,526
1995	732,003.23	213,745	199,210	532,793	49.56	10,750
1996	237,487.46	66,428	61,911	175,576	50.42	3,482
1997	3,373,489.33	901,700	840,382	2,533,107	51.29	49,388
1998	1,676,904.41	427,376	398,313	1,278,591	52.16	24,513
1999	46,400.57	11,242	10,478	35,923	53.04	677
2000	957,010.70	219,701	204,761	752,250	53.93	13,949
2001	645,207.20	140,010	130,489	514,718	54.81	9,391
2002	1,106,865.30	226,122	210,745	896,120	55.70	16,088
2003	366,225.94	70,107	65,339	300,887	56.60	5,316

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. 0						
2004	367,931.21	65,701	61,233	306,698	57.50	5,334
2005	2,929,129.71	484,976	451,996	2,477,134	58.41	42,409
2006	1,126,171.11	171,978	160,283	965,888	59.31	16,285
2007	3,980,468.43	555,554	517,774	3,462,694	60.23	57,491
2008	3,790,614.28	479,778	447,152	3,343,462	61.14	54,685
2009	7,890,292.19	894,996	834,133	7,056,159	62.06	113,699
2010	3,784,893.40	379,587	353,774	3,431,119	62.98	54,480
2011	417,490.35	36,322	33,852	383,638	63.91	6,003
2012	1,444,854.55	106,500	99,258	1,345,597	64.84	20,753
2013	5,262,586.25	318,018	296,392	4,966,194	65.77	75,508
2014	4,589,906.17	215,726	201,056	4,388,850	66.71	65,790
2015	4,225,933.06	142,456	132,768	4,093,165	67.64	60,514
2016	5,544,801.84	112,504	104,853	5,439,949	68.58	79,323
2017	11,684,940.00	78,406	73,074	11,611,866	69.53	167,005
9999	9,682,682.65-	1,630,928-	1,520,020-	8,162,663-		141,193-
	74,842,230.98	12,606,243	11,748,979	63,093,252		1,091,352
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						57.8 1.46

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-S1.5						
NET SALVAGE PERCENT.. 0						
1939	43,483.75	38,683	30,376	13,108	5.52	2,375
1955	6,586.44	5,272	4,140	2,446	9.98	245
1965	50,268.22	36,796	28,894	21,374	13.40	1,595
1968	35,340.54	25,049	19,670	15,671	14.56	1,076
1969	84,484.61	59,190	46,479	38,006	14.97	2,539
1974	17,979.48	11,816	9,279	8,700	17.14	508
1977	42,741.98	26,868	21,098	21,644	18.57	1,166
1984	95,864.15	53,051	41,659	54,205	22.33	2,427
1985	181,691.03	98,404	77,272	104,419	22.92	4,556
1986	107,181.70	56,742	44,557	62,625	23.53	2,661
1990	2,818.30	1,347	1,058	1,760	26.10	67
1992	101,523.95	45,726	35,907	65,617	27.48	2,388
1993	107,336.89	46,820	36,766	70,571	28.19	2,503
1994	55,126.98	23,242	18,251	36,876	28.92	1,275
1995	20,059.56	8,160	6,408	13,652	29.66	460
1996	39,642.54	15,524	12,190	27,453	30.42	902
1997	1,036,118.54	389,581	305,921	730,198	31.20	23,404
1998	214,347.36	77,208	60,628	153,719	31.99	4,805
1999	9,526.74	3,277	2,573	6,954	32.80	212
2000	166,135.32	54,426	42,738	123,397	33.62	3,670
2001	232,459.52	72,248	56,733	175,727	34.46	5,099
2002	199,935.20	58,741	46,127	153,808	35.31	4,356
2003	115,548.56	31,938	25,079	90,470	36.18	2,501
2004	241,038.12	62,381	48,985	192,053	37.06	5,182
2005	875,918.83	210,921	165,627	710,292	37.96	18,712
2006	3,648.60	812	638	3,011	38.87	77
2007	1,566,174.68	319,813	251,135	1,315,040	39.79	33,050
2008	677,722.60	125,785	98,773	578,950	40.72	14,218
2009	121,507.02	20,267	15,915	105,592	41.66	2,535
2010	212,797.09	31,451	24,697	188,100	42.61	4,414
2011	37,446.34	4,808	3,776	33,670	43.58	773
2012	21,649.36	2,360	1,853	19,796	44.55	444
2013	15,585.65	1,393	1,094	14,492	45.53	318
2015	6,304,479.70	313,963	246,541	6,057,939	47.51	127,509
2017	2,022,189.00	20,222	15,879	2,006,310	49.50	40,532
9999	4,387,312.76-	685,566-	538,344-	3,848,968-		92,763-
	10,679,045.59	1,668,719	1,310,372	9,368,674		225,791

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 41.5 2.11

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 38-R3						
NET SALVAGE PERCENT.. 0						
1929	658.98	659	659			
1939	5,979.71	5,980	5,980			
1955	2,063.91	2,041	1,708	356	0.42	356
1957	170,696.72	166,743	139,515	31,182	0.88	31,182
1961	894.35	850	711	183	1.87	98
1962	2,966.85	2,801	2,344	623	2.13	292
1965	53,672.22	49,576	41,480	12,192	2.90	4,204
1968	12,262.91	11,075	9,267	2,996	3.68	814
1969	15,557.95	13,945	11,668	3,890	3.94	987
1970	488.18	434	363	125	4.22	30
1971	550.23	485	406	144	4.50	32
1972	593.74	519	434	160	4.80	33
1973	2,448.60	2,119	1,773	676	5.12	132
1974	11,991.23	10,271	8,594	3,397	5.45	623
1975	180,834.35	153,234	128,212	52,622	5.80	9,073
1976	57,498.68	48,163	40,298	17,201	6.17	2,788
1977	56,486.62	46,721	39,092	17,395	6.57	2,648
1978	33,019.13	26,945	22,545	10,474	6.99	1,498
1979	41,837.50	33,657	28,161	13,676	7.43	1,841
1980	363,435.72	287,881	240,871	122,565	7.90	15,515
1981	72,065.82	56,136	46,969	25,097	8.40	2,988
1982	59,298.21	45,379	37,969	21,329	8.92	2,391
1983	142,139.13	106,754	89,322	52,817	9.46	5,583
1984	250,150.00	184,123	154,057	96,093	10.03	9,581
1985	168,558.24	121,451	101,619	66,939	10.62	6,303
1986	175,085.77	123,297	103,163	71,923	11.24	6,399
1987	213,460.27	146,782	122,813	90,647	11.87	7,637
1988	210,672.09	141,205	118,147	92,525	12.53	7,384
1989	308,555.73	201,293	168,423	140,133	13.21	10,608
1990	73,350.25	46,519	38,923	34,427	13.90	2,477
1991	78,959.80	48,602	40,665	38,295	14.61	2,621
1992	87,750.30	52,327	43,782	43,968	15.34	2,866
1993	586,528.33	338,333	283,085	303,443	16.08	18,871
1994	92,458.70	51,485	43,078	49,381	16.84	2,932
1995	89,009.94	47,738	39,943	49,067	17.62	2,785
1996	94,381.54	48,657	40,712	53,670	18.41	2,915
1997	437,080.18	216,123	180,831	256,249	19.21	13,339
1998	358,317.00	169,445	141,775	216,542	20.03	10,811
1999	151,537.80	68,351	57,190	94,348	20.86	4,523
2000	479,334.90	205,611	172,035	307,300	21.70	14,161
2001	171,605.87	69,727	58,341	113,265	22.56	5,021

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 38-R3						
NET SALVAGE PERCENT.. 0						
2002	285,602.80	109,580	91,686	193,917	23.42	8,280
2003	196,936.37	71,001	59,407	137,529	24.30	5,660
2004	735,813.16	248,050	207,544	528,269	25.19	20,971
2005	332,277.73	104,142	87,136	245,142	26.09	9,396
2006	874,574.04	253,163	211,822	662,752	27.00	24,546
2007	496,909.37	131,810	110,286	386,623	27.92	13,848
2008	516,627.37	124,399	104,085	412,542	28.85	14,300
2009	2,534,307.58	547,537	458,127	2,076,181	29.79	69,694
2010	474,646.08	90,809	75,980	398,666	30.73	12,973
2011	172,196.00	28,640	23,963	148,233	31.68	4,679
2012	216,644.59	30,558	25,568	191,077	32.64	5,854
2013	570,258.63	66,030	55,248	515,011	33.60	15,328
2014	978,369.88	88,308	73,888	904,482	34.57	26,164
2015	1,175,718.52	75,799	63,421	1,112,298	35.55	31,288
2016	679,645.38	26,289	21,996	657,649	36.53	18,003
2017	638,000.00	8,224	6,881	631,119	37.51	16,825
9999	3,808,091.03-	1,260,001-	1,054,504-	2,753,587-		120,444-
	12,384,673.92	4,097,775	3,429,457	8,955,217		391,707
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.9						3.16



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 20-L3						
NET SALVAGE PERCENT.. 0						
1988	4,249.82	3,425	747	3,503	3.88	903
1992	8,806.29	6,644	1,450	7,356	4.91	1,498
2002	10,523.98	6,783	1,480	9,044	7.11	1,272
2003	7,550.27	4,704	1,027	6,523	7.54	865
2004	1,498.38	895	195	1,303	8.06	162
2005	38,651.31	21,896	4,779	33,872	8.67	3,907
2006	17,284.31	9,195	2,007	15,277	9.36	1,632
2007	9,030.61	4,461	974	8,057	10.12	796
2008	29,418.95	13,327	2,908	26,511	10.94	2,423
2009	92,082.61	37,754	8,239	83,844	11.80	7,105
2010	19,205.24	7,020	1,532	17,673	12.69	1,393
2013	12,166.10	2,725	595	11,571	15.52	746
2014	270,185.46	47,147	10,289	259,896	16.51	15,742
2015	4,972.70	622	136	4,837	17.50	276
2016	7,895.56	592	129	7,767	18.50	420
9999	14,726.81-	4,615-	1,007-	13,720-		1,080-
	518,794.78	162,575	35,480	483,315		38,060

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.7 7.34

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 30-S1.5						
NET SALVAGE PERCENT.. 0						
2009	14,938.00	4,043	3,505	11,433	21.88	523
2010	5,980.30	1,441	1,249	4,731	22.77	208
	20,918.30	5,484	4,754	16,164		731
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						22.1 3.49

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 370.00 RECEIVING WELLS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
2007	7,369.99	1,498	1,613	5,757	39.84	145
2009	92,112.20	15,217	16,388	75,724	41.74	1,814
2013	4,049.76	357	385	3,665	45.59	80
	103,531.95	17,072	18,386	85,146		2,039
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					41.8	1.97

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 40-S0						
NET SALVAGE PERCENT.. 0						
1957	12,038.26	9,826	12,038			
1967	5,140.50	3,677	5,113	28	11.39	2
1976	56,891.00	35,216	48,968	7,923	15.24	520
1977	7,043.00	4,282	5,954	1,089	15.68	69
1978	8,408.00	5,017	6,976	1,432	16.13	89
1982	7,169.88	3,951	5,494	1,676	17.96	93
1984	1,371.62	724	1,007	365	18.89	19
1985	6,476.79	3,340	4,644	1,833	19.37	95
1986	150,338.52	75,733	105,307	45,032	19.85	2,269
1988	17,594.81	8,432	11,725	5,870	20.83	282
1992	140,883.19	60,368	83,942	56,941	22.86	2,491
1993	24,770.06	10,292	14,311	10,459	23.38	447
1994	19,130.99	7,695	10,700	8,431	23.91	353
1996	56,678.77	21,269	29,574	27,105	24.99	1,085
1997	32,695.30	11,811	16,423	16,272	25.55	637
1999	41,804.10	13,921	19,357	22,447	26.68	841
2001	19,670.79	5,975	8,308	11,363	27.85	408
2003	129,284.98	35,359	49,167	80,118	29.06	2,757
2004	170,436.90	43,930	61,085	109,352	29.69	3,683
2005	94,833.67	22,926	31,879	62,955	30.33	2,076
2006	55,301.96	12,471	17,341	37,961	30.98	1,225
2007	33,125.48	6,923	9,626	23,499	31.64	743
2008	393,641.83	75,481	104,956	288,686	32.33	8,929
2009	1,122,432.97	195,584	271,959	850,474	33.03	25,749
2010	540,134.69	84,396	117,352	422,783	33.75	12,527
2011	42,064.06	5,794	8,057	34,007	34.49	986
2012	39,573.39	4,699	6,534	33,039	35.25	937
2013	47,427.88	4,695	6,528	40,900	36.04	1,135
2014	2,707,612.58	213,224	296,487	2,411,126	36.85	65,431
2015	329,257.18	18,932	26,325	302,932	37.70	8,035
2016	801,426.24	28,451	39,561	761,865	38.58	19,748
2017	1,828,090.00	22,394	31,138	1,796,952	39.51	45,481
9999	66,626.22-	7,873-	10,935-	55,691-		1,558-
	8,876,123.17	1,048,915	1,456,901	7,419,222		207,584
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						35.7 2.34

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2						
NET SALVAGE PERCENT.. 0						
1939	1,882.22	1,827	1,882			
1957	23,234.46	19,873	22,781	453	6.51	70
1965	83,919.57	66,688	76,446	7,474	9.24	809
1967	180,552.79	140,309	160,839	19,714	10.03	1,966
1973	949.21	682	782	167	12.69	13
1977	268,915.05	180,950	207,427	61,488	14.72	4,177
1981	4,450.35	2,772	3,178	1,272	16.97	75
1984	632,571.80	368,581	422,513	210,059	18.78	11,185
1985	482,316.34	274,279	314,412	167,904	19.41	8,650
1986	1,091,836.69	605,358	693,936	397,901	20.05	19,845
1987	201,413.91	108,764	124,679	76,735	20.70	3,707
1988	288,647.76	151,572	173,751	114,897	21.37	5,377
1989	440,581.07	224,793	257,685	182,896	22.04	8,298
1990	4,897.01	2,423	2,778	2,119	22.73	93
1991	8,530.40	4,091	4,690	3,840	23.42	164
1992	1,495,223.06	693,455	794,924	700,299	24.13	29,022
1993	3,423,080.77	1,533,540	1,757,932	1,665,149	24.84	67,035
1994	59,921.39	25,873	29,659	30,262	25.57	1,183
1995	38,010.24	15,796	18,107	19,903	26.30	757
1996	25,724.59	10,261	11,762	13,963	27.05	516
1997	20,016.98	7,651	8,771	11,246	27.80	405
1998	20,511.19	7,489	8,585	11,926	28.57	417
1999	17,178.88	5,978	6,853	10,326	29.34	352
2001	221,356.53	69,309	79,451	141,906	30.91	4,591
2002	357,233.79	105,502	120,939	236,295	31.71	7,452
2004	356,080.87	92,424	105,948	250,133	33.32	7,507
2005	1,408,697.34	339,651	389,350	1,019,347	34.15	29,849
2006	281,303.20	62,638	71,803	209,500	34.98	5,989
2007	33,771.68	6,897	7,906	25,866	35.81	722
2008	848,110.37	157,180	180,179	667,931	36.66	18,220
2009	18,264,517.77	3,039,946	3,484,761	14,779,757	37.51	394,022
2010	9,698,504.37	1,431,111	1,640,516	8,057,988	38.36	210,062
2011	18,147.60	2,327	2,667	15,481	39.23	395
2012	746,089.11	81,242	93,130	652,959	40.10	16,283
2013	2,458,153.00	219,587	251,718	2,206,435	40.98	53,842
2014	7,598,227.24	530,204	607,785	6,990,442	41.86	166,996
2015	1,095,488.32	54,774	62,788	1,032,700	42.75	24,157

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2						
NET SALVAGE PERCENT.. 0						
2016	419,493.25	12,585	14,427	405,066	43.65	9,280
2017	1,079,448.00	10,794	12,373	1,067,075	44.55	23,952
9999	2,200,080.47-	437,123-	501,075-	1,699,005-		46,601-
	51,498,907.70	10,232,053	11,729,038	39,769,870		1,090,834
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						36.5 2.12

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 381.00 PLANT SEWERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
1988	30,192.33	16,147	15,451	14,741	23.26	634
2008	294,411.86	54,290	51,950	242,462	40.78	5,946
2009	4,434,866.70	732,640	701,066	3,733,801	41.74	89,454
2010	1,187,964.50	173,680	166,195	1,021,770	42.69	23,935
2011	8,717.46	1,105	1,057	7,660	43.66	175
2012	1,684.33	181	173	1,511	44.62	34
2014	440,381.98	30,210	28,909	411,473	46.57	8,836
2015	7,458.23	367	351	7,107	47.54	149
2016	45,239.42	1,339	1,281	43,958	48.52	906
9999	30,192.33-	4,727-	4,523-	25,669-		609-
	6,420,724.48	1,005,232	961,910	5,458,815		129,460
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						42.2 2.02

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 382.00 OUTFALL SEWER LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
1957	12,139.53	10,651	10,448	1,692	6.13	276
1975	4,984.00	3,575	3,507	1,477	14.14	104
1993	202,475.94	91,884	90,130	112,346	27.31	4,114
2004	1,695.94	440	432	1,264	37.03	34
2005	9,240.93	2,225	2,183	7,058	37.96	186
2006	201,123.34	44,690	43,836	157,287	38.89	4,044
2009	26,051.26	4,304	4,222	21,829	41.74	523
2010	27,827.93	4,068	3,990	23,838	42.69	558
2014	188,735.80	12,947	12,700	176,036	46.57	3,780
	674,274.67	174,784	171,448	502,827		13,619
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						36.9 2.02



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 20-S2.5						
NET SALVAGE PERCENT.. 0						
2010	273,149.74	100,519	87,883	185,267	12.64	14,657
2017	49,000.00	1,225	1,071	47,929	19.50	2,458
	322,149.74	101,744	88,954	233,195		17,115
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.6 5.31

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1999	1,200.00	1,110	879	321	1.50	214
2000	1,847.00	1,616	1,280	567	2.50	227
2001	15,016.00	12,388	9,815	5,201	3.50	1,486
2008	3,929.23	1,866	1,478	2,451	10.50	233
2009	107,117.95	45,525	36,070	71,048	11.50	6,178
2010	20,831.92	7,812	6,190	14,642	12.50	1,171
2012	7,908.11	2,175	1,723	6,185	14.50	427
2013	18,309.85	4,120	3,264	15,046	15.50	971
2015	2,488.32	311	246	2,242	17.50	128
2016	17,826.99	1,337	1,060	16,767	18.50	906
	196,475.37	78,260	62,005	134,470		11,941

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 11.3 6.08

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 15-L4						
NET SALVAGE PERCENT.. 0						
1998	23,700.00	20,303	23,700			
2000	20,700.00	17,140	20,180	520	2.58	202
2002	22,872.16	18,481	21,759	1,113	2.88	386
2006	73,113.90	51,911	61,120	11,994	4.35	2,757
2011	161,067.57	69,473	81,797	79,271	8.53	9,293
2012	73,865.31	27,035	31,830	42,035	9.51	4,420
2013	62,726.96	18,818	22,156	40,571	10.50	3,864
2016	2,423.80	242	285	2,139	13.50	158
2017	192,000.00	6,399	7,534	184,466	14.50	12,722
	632,469.70	229,802	270,361	362,108		33,802
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.7 5.34

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 392.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
2003	5,858.64	3,398	4,288	1,571	10.50	150
2012	58,391.33	12,846	16,212	42,180	19.50	2,163
	64,249.97	16,244	20,500	43,750		2,313

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 18.9 3.60

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1998	1,699.00	1,657	1,699			
1999	18,877.58	17,462	18,878			
2001	1,716.33	1,416	1,599	117	3.50	33
2002	14,591.33	11,308	12,767	1,824	4.50	405
2005	8,276.87	5,173	5,840	2,437	7.50	325
2006	75,526.99	43,428	49,031	26,496	8.50	3,117
2007	8,466.61	4,445	5,018	3,449	9.50	363
2008	8,976.47	4,264	4,814	4,162	10.50	396
2009	378.54	161	182	197	11.50	17
2010	61,467.53	23,050	26,024	35,444	12.50	2,836
2011	7,372.47	2,396	2,705	4,667	13.50	346
2012	65,999.81	18,150	20,491	45,509	14.50	3,139
2013	16,093.74	3,621	4,088	12,006	15.50	775
2014	36,417.63	6,373	7,195	29,223	16.50	1,771
2015	56,943.11	7,118	8,037	48,906	17.50	2,795
2016	107,176.04	8,038	9,075	98,101	18.50	5,303
2017	33,501.00	838	946	32,555	19.50	1,669
	523,481.05	158,898	178,389	345,092		23,290

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 14.8 4.45

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	2,348.43	1,957	2,348			
2006	7,401.23	5,674	7,401			
2007	17,398.19	12,179	16,767	631	4.50	140
2008	62,811.98	39,781	54,767	8,045	5.50	1,463
2009	41,773.44	23,672	32,589	9,184	6.50	1,413
2010	31,269.93	15,635	21,525	9,745	7.50	1,299
2011	16,488.52	7,145	9,837	6,652	8.50	783
2012	17,016.66	6,239	8,589	8,428	9.50	887
2013	5,917.50	1,775	2,444	3,474	10.50	331
2014	36,775.07	8,581	11,813	24,962	11.50	2,171
2015	12,751.71	2,125	2,926	9,826	12.50	786
2016	64,207.29	6,421	8,839	55,368	13.50	4,101
	316,159.95	131,184	179,845	136,315		13,374

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.2 4.23

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 16-L2.5						
NET SALVAGE PERCENT.. 0						
1986	7,525.00	6,415	6,540	985	2.36	417
1992	10,000.00	7,856	8,010	1,990	3.43	580
1993	93,533.45	72,197	73,608	19,925	3.65	5,459
2002	72,784.90	47,265	48,189	24,596	5.61	4,384
2011	345,636.00	131,342	133,908	211,728	9.92	21,344
2015	3,257.24	503	513	2,744	13.53	203
9999	10,000.00-	4,985-	5,083-	4,917-		608-
	522,736.59	260,593	265,685	257,051		31,779

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.1    6.08

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	234,211.01	195,175	234,211			
2006	4,491.50	3,443	4,240	252	3.50	72
2007	1,116.47	782	963	153	4.50	34
2008	28,601.90	18,114	22,306	6,296	5.50	1,145
2009	526,717.63	298,475	367,545	159,173	6.50	24,488
2010	185,786.54	92,893	114,389	71,398	7.50	9,520
2011	4,370.98	1,894	2,332	2,039	8.50	240
2012	3,344.78	1,226	1,510	1,835	9.50	193
2013	263,689.84	79,107	97,413	166,277	10.50	15,836
2014	98,016.16	22,870	28,162	69,854	11.50	6,074
2016	172,002.57	17,200	21,180	150,822	13.50	11,172
	1,522,349.38	731,179	894,251	628,098		68,774
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.1 4.52



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 397.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2017

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2003	139,402.93	134,757	97,854	41,549	0.50	41,549
2004	45,714.26	41,143	29,876	15,838	1.50	10,559
2005	43,580.31	36,317	26,372	17,208	2.50	6,883
2006	20,954.98	16,066	11,666	9,289	3.50	2,654
2007	27,143.48	19,000	13,797	13,346	4.50	2,966
2008	20,048.36	12,697	9,220	10,828	5.50	1,969
2009	6,270.00	3,553	2,580	3,690	6.50	568
2010	4,161.94	2,081	1,511	2,651	7.50	353
2011	14,880.36	6,448	4,682	10,198	8.50	1,200
2012	15,424.61	5,656	4,107	11,318	9.50	1,191
2013	25,242.12	7,573	5,499	19,743	10.50	1,880
2014	2,834,123.45	661,286	480,193	2,353,930	11.50	204,690
2015	4,104.14	684	497	3,607	12.50	289
9999	29,000.00-	8,582-	6,232-	22,768-		2,507-
	3,172,050.94	938,679	681,622	2,490,429		274,244
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.1 8.65

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**PART VIII. EXPERIENCED AND ESTIMATED  
NET SALVAGE**

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2013 TRANSACTION YEAR				
354.30	4,675.41	1,423.61		1,423.61-
354.40	38,397.83	27,581.17		27,581.17-
355.00	11,547.79	962.70		962.70-
360.10	22,896.78	8,181.50		8,181.50-
361.10	17,050.92	34,623.98		34,623.98-
363.00	8,491.73	15,735.19		15,735.19-
364.00	5,452.35			
371.00	2,396.03	2,291.30		2,291.30-
380.00	57,064.10	6,028.22		6,028.22-
390.00	12,016.29			
391.00		.05		.05-
392.00		.10		.10-
393.00	4,791.77	240.15		240.15-
394.00	1,006.79	6.38		6.38-
396.00	185.66	2,027.27		2,027.27-
	185,973.45	99,101.62		99,101.62-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2014 TRANSACTION YEAR				
354.20		17,281.50		17,281.50-
354.30	8,419.83	.04		.04-
354.40	279,496.09	10,304.75		10,304.75-
354.70	142,282.00			
355.00	57,994.23	509.91		509.91-
360.10	12,882.20	1,577.22		1,577.22-
361.10	15,832.47	16,027.16		16,027.16-
363.00	47,729.22	26,515.13		26,515.13-
364.00	197,628.45	815.62		815.62-
371.00	81,694.15	4,325.21		4,325.21-
380.00	611,695.18	21,655.33		21,655.33-
389.10	8,491.79			
390.00	50,807.41			
391.00	14,522.98			
392.00	920.00			
393.00	39,015.82	240.08		240.08-
394.00	36,678.40			
395.00	24,152.00			
396.00	19,639.00			
397.00	16,720.00			
	1,666,601.22	99,251.95		99,251.95-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2015 TRANSACTION YEAR				
354.20		1,397.69		1,397.69-
354.30	43,759.87	4,140.75		4,140.75-
354.40	62,674.33	1,026.52		1,026.52-
354.70	2,111.56	480.36		480.36-
355.00		1,665.75		1,665.75-
360.10	19.02	3,255.59		3,255.59-
361.10	41,514.63	65,334.39		65,334.39-
361.20	12,188.26	7,496.94		7,496.94-
363.00	182,967.14	27,377.40		27,377.40-
371.00	19,187.25	4,901.57		4,901.57-
380.00	17,199.80	1,622.52		1,622.52-
390.00	5,416.12			
395.00	55,927.14			
396.00	22,514.95	4,189.54		4,189.54-
397.00	1,573.00			
	467,053.07	122,889.02		122,889.02-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2016 TRANSACTION YEAR				
354.20	.01	41.70		41.70-
354.30	571.02			
354.40	34,034.72	4,580.92		4,580.92-
355.00	57,572.55	4,933.68		4,933.68-
360.10	1,368.17	12,703.29		12,703.29-
361.10	245,871.29	7,077.34	106.90	6,970.44-
361.20		53,436.99	437.10	52,999.89-
363.00	34,819.43	11,693.51		11,693.51-
371.00	54,772.73	11,514.65		11,514.65-
380.00	147,475.80	23,916.89		23,916.89-
381.00	13,300.05	2,109.73		2,109.73-
390.00	3,416.69	276.48		276.48-
393.00	15,451.56	4,963.98	176,515.74	171,551.76
394.00	1,377.94	566.37		566.37-
395.00		830.86-	44,128.93	44,959.79
396.00	6,233.38	911.22	132,386.80	131,475.58
397.00	25,065.55	1,142.09	88,257.87	87,115.78
	641,330.89	139,037.98	441,833.34	302,795.36

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2017 TRANSACTION YEAR				
354.30	26,000.00	4,160.00		4,160.00-
354.70	400.00			
355.00	68,000.00	5,440.00		5,440.00-
361.10	465,682.00	190,930.00		190,930.00-
361.20	1,500.00	7,500.00	60.00	7,440.00-
363.00	21,201.00	6,148.00		6,148.00-
380.00	56,300.00	11,823.00		11,823.00-
390.00	3,200.00			
393.00	46,861.66			
394.00	26,598.02			
397.00	55,000.62			
	770,743.30	226,001.00	60.00	225,941.00-
TOTAL	3,731,701.93	686,281.57	441,893.34	244,388.23-

**PENNSYLVANIA-AMERICAN WATER COMPANY**

**HERSHEY, PENNSYLVANIA**

**WASTEWATER OPERATIONS**

**(Excluding Scranton Wastewater)**

**2018 DEPRECIATION STUDY**

**CALCULATED ANNUAL DEPRECIATION ACCRUALS**

**RELATED TO WASTEWATER PLANT**

**AS OF DECEMBER 31, 2018**

*Prepared by:*



***Gannett Fleming***

*Excellence Delivered As Promised*



Exhibit No. 11-F  
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY  
Hershey, Pennsylvania

WASTEWATER OPERATIONS  
(Excluding Scranton Wastewater)

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS  
RELATED TO WASTEWATER PLANT  
AS OF DECEMBER 31, 2018

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC  
Camp Hill, Pennsylvania



**Gannett Fleming**

*Excellence Delivered As Promised*

April 21, 2017

Pennsylvania-American Water Company  
800 West Hersheypark Drive  
Hershey, PA 17033

Attention Mr. John R. Cox  
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2018. The results of our study at December 31, 2017 are presented in our report titled "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2017". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION  
AND RATE CONSULTANTS, LLC

JOHN J. SPANOS  
Sr. Vice President

JJS:mlw

062027.100

**Gannett Fleming Valuation and Rate Consultants, LLC**

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**PART I. RESULTS OF STUDY**

**PENNSYLVANIA-AMERICAN WATER COMPANY**

**WASTEWATER OPERATIONS  
(Excluding Scranton Wastewater)**

**DEPRECIATION STUDY**

**PART I. RESULTS OF STUDY**

**SUMMARY OF RESULTS**

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2018. Table 1 sets forth the development of the net original cost by account as of December 31, 2018. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2018, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2018. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2018. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2014 through 2018.

**DESCRIPTION OF DETAILED TABULATIONS**

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-2. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2014 through 2018, beginning on pages III-2 through III-6.

PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2018

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2018 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2018 (6)
<b>DEPRECIABLE PLANT</b>					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	3,546,056.86				3,546,056.86
354.30 STRUCTURES AND IMPROVEMENTS - SPP	18,780,037.90		2,734,528.70		16,045,509.20
354.40 STRUCTURES AND IMPROVEMENTS - TDP	50,958,423.67		1,853,012.73		49,105,410.94
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	2,364,969.53				2,364,969.53
355.00 POWER GENERATING EQUIPMENT	6,445,040.73		144,517.16		6,300,523.57
360.10 COLLECTION SEWERS - FORCE MAINS	32,690,825.21	241,303.14	11,251,126.61		21,198,395.46
361.10 COLLECTION SEWERS - GRAVITY MAINS	88,194,843.63	143,423.53	9,911,882.12		78,139,537.98
361.20 MANHOLES	15,233,873.35		4,387,312.76		10,846,560.59
363.00 SERVICES	16,811,563.95	70,197.45	3,737,893.58		13,003,472.92
364.00 FLOW MEASURING DEVICES	533,521.59		14,726.81		518,794.78
365.00 FLOW MEASURING INSTALLATIONS	20,918.30				20,918.30
370.00 RECEIVING WELLS	103,531.95				103,531.95
371.00 PUMPING EQUIPMENT	9,023,697.39		66,626.22		8,957,071.17
380.00 TREATMENT EQUIPMENT	57,618,431.17		2,200,080.47		55,418,350.70
381.00 PLANT SEWERS	6,450,916.81		30,192.33		6,420,724.48
382.00 OUTFALL SEWER LINES	674,274.67				674,274.67
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	378,149.74				378,149.74
390.00 OFFICE FURNITURE AND EQUIPMENT	196,475.37				196,475.37
391.00 TRANSPORTATION EQUIPMENT	632,469.70				632,469.70
392.00 STORES EQUIPMENT	64,249.97				64,249.97
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	566,783.05				566,783.05
394.00 LABORATORY EQUIPMENT	316,159.95				316,159.95
395.00 POWER OPERATED EQUIPMENT	532,736.59		10,000.00		522,736.59
396.00 COMMUNICATION EQUIPMENT	1,522,349.38				1,522,349.38
397.00 MISCELLANEOUS EQUIPMENT	3,061,648.01		29,000.00		3,032,648.01
<b>TOTAL DEPRECIABLE PLANT</b>	<b>316,721,948.47</b>	<b>454,924.12</b>	<b>36,370,899.49</b>	<b>0.00</b>	<b>279,896,124.86</b>
<b>NONDEPRECIABLE PLANT</b>					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,677,525.60		125,000.00		1,552,525.60
<b>TOTAL NONDEPRECIABLE PLANT</b>	<b>3,077,708.65</b>	<b>0.00</b>	<b>125,000.00</b>	<b>0.00</b>	<b>2,952,708.65</b>
<b>TOTAL WASTEWATER PLANT IN SERVICE</b>	<b>319,799,657.12</b>	<b>454,924.12</b>	<b>36,495,899.49</b>	<b>0.00</b>	<b>282,848,833.51</b>

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND  
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2018

	DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST		BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL		COMPOSITE REMAINING LIFE (8)
			AS OF DECEMBER 31, 2018 (3)	AS OF DECEMBER 31, 2018 (3)			ACCURAL AMOUNT (6)	ACCURAL RATE (7)=(6)/(3)	
<b>DEPRECIABLE PLANT</b>									
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3		3,546,056.86	182,207	3,363,850	78,822	2.22	42.7
354.30	STRUCTURES AND IMPROVEMENTS - SPP	50-R2.5		16,045,509.20	4,581,016	11,464,494	265,296	1.65	43.2
354.40	STRUCTURES AND IMPROVEMENTS - TDP	65-R2		49,105,410.94	11,377,304	37,728,107	687,668	1.40	54.9
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1		2,364,969.53	1,355,706	1,009,263	31,614	1.34	31.9
355.00	POWER GENERATING EQUIPMENT	35-R2.5		6,300,523.57	2,686,016	3,614,507	119,954	1.90	30.1
360.10	COLLECTION SEWERS - FORCE MAINS	70-S2		21,198,395.46	951,240	20,247,155	385,112	1.82	52.6
361.10	COLLECTION SEWERS - GRAVITY MAINS	70-R2.5		78,139,537.98	12,831,511	65,308,027	1,135,328	1.45	57.5
361.20	MANHOLES	50-S1.5		10,846,560.59	1,541,490	9,305,071	228,252	2.10	40.8
363.00	SERVICES	38-R3		13,003,472.92	3,820,002	9,183,471	400,192	3.08	22.9
364.00	FLOW MEASURING DEVICES	20-L3		518,794.78	73,722	445,072	37,004	7.13	12.0
365.00	FLOW MEASURING INSTALLATIONS	30-S1.5		20,918.30	5,484	15,434	726	3.47	21.3
370.00	RECEIVING WELLS	50-R3		103,531.95	20,425	83,107	2,036	1.97	40.8
371.00	PUMPING EQUIPMENT	40-S0		8,957,071.17	1,669,288	7,287,783	208,388	2.33	35.0
380.00	TREATMENT EQUIPMENT	45-R2		55,418,350.70	12,607,762	42,810,589	1,180,165	2.13	36.3
381.00	PLANT SEWERS	50-R3		6,420,724.48	1,092,030	5,328,694	129,306	2.01	41.2
382.00	OUTFALL SEWER LINES	50-R3		674,274.67	185,068	489,207	13,561	2.01	36.1
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT	20-S2.5		378,149.74	110,704	267,446	19,509	5.16	13.7
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ		196,475.37	74,006	122,470	12,047	6.13	10.2
391.00	TRANSPORTATION EQUIPMENT	15-L4		632,469.70	304,135	328,334	33,815	5.35	9.7
392.00	STORES EQUIPMENT	25-SQ		64,249.97	22,813	41,437	2,314	3.60	17.9
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ		566,783.05	166,801	399,982	31,425	5.54	12.7
394.00	LABORATORY EQUIPMENT	15-SQ		316,159.95	193,334	122,826	13,420	4.24	9.2
395.00	POWER OPERATED EQUIPMENT	16-L2.5		522,736.59	288,476	234,261	31,086	5.95	7.5
396.00	COMMUNICATION EQUIPMENT	15-SQ		1,522,349.38	938,010	584,340	72,866	4.79	8.0
397.00	MISCELLANEOUS EQUIPMENT	15-SQ		3,032,648.01	798,676	2,233,972	235,764	7.77	9.5
<b>TOTAL DEPRECIABLE PLANT</b>				<b>279,896,124.86</b>	<b>57,877,226</b>	<b>222,018,899</b>	<b>5,355,670</b>	<b>1.91</b>	
<b>AMORTIZATION OF NET SALVAGE</b>							<b>42,007</b>		
<b>NONDEPRECIABLE PLANT</b>									
352.10	FRANCHISES			221,139.78					
353.20	LAND AND LAND RIGHTS - COLLECTION			1,093,483.20					
353.30	LAND AND LAND RIGHTS - SPP			85,560.07					
353.40	LAND AND LAND RIGHTS - TDP			1,552,525.60					
<b>TOTAL NONDEPRECIABLE PLANT</b>				<b>2,952,708.65</b>					
<b>TOTAL WASTEWATER PLANT IN SERVICE</b>				<b>282,848,833.51</b>	<b>57,877,226</b>	<b>222,018,899</b>	<b>5,397,677</b>		

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2018, OF BOOK RESERVE AS OF DECEMBER 31, 2017

ACCOUNT (1)	BOOK RESERVE BALANCE AS OF 12/31/2017 (2)	+	PROJECTED DEPRECIATION ACCRUALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2018 (8)
354.20	99,386		82,821										182,207
354.30	4,368,896		256,920		40,000		4,800						4,581,016
354.40	10,681,129		696,175										11,377,304
354.70	1,330,906		25,201		400								1,355,706
355.00	2,656,734		102,042		68,000		4,760						2,686,016
360.10	557,783		393,457										951,240
361.10	11,748,979		1,174,486		65,682		26,273						12,831,511
361.20	1,310,372		240,058		1,500		7,500		60				1,541,490
363.00	3,429,457		418,106		21,201		6,360						3,820,002
364.00	35,480		38,243										73,722
365.00	4,754		730										5,484
370.00	18,386		2,040										20,425
371.00	1,456,901		212,387										1,669,288
380.00	11,729,038		1,109,844		216,000		15,120						12,607,762
381.00	961,910		130,121										1,092,030
382.00	171,448		13,620										185,068
389.10	88,954		21,749										110,704
390.00	62,005		12,001										74,006
391.00	270,361		33,774										304,135
392.00	20,500		2,313										22,813
393.00	178,389		(9,889)		1,699								166,801
394.00	179,845		13,489										193,334
395.00	265,685		22,790										288,476
396.00	894,251		43,758										938,010
397.00	681,622		256,457		139,403								798,676
<b>TOTAL</b>	<b>53,203,171</b>		<b>5,292,693</b>		<b>553,885</b>		<b>64,813</b>		<b>60</b>		<b>0</b>		<b>57,877,226</b>



PENNSYLVANIA-AMERICAN WATER COMPANY  
 WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2018

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2017 (2)	NET ORIGINAL COST AS OF 12/31/2018 (3)	ACCRUAL RATE (4)	DEPRECIATION ACCRUALS (5)	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.20	3,546,056.86	3,546,056.86	2.23	79,077	3,744	82,821
354.30	15,517,613.20	16,045,509.20	1.63	254,975	1,945	256,920
354.40	49,105,410.94	49,105,410.94	1.40	687,476	8,699	696,175
354.70	2,135,369.53	2,364,969.53	1.17	25,105	96	25,201
355.00	5,518,523.57	6,300,523.57	1.72	99,340	2,702	102,042
360.10	21,240,170.46	21,198,395.46	1.83	388,313	5,144	393,457
361.10	74,842,230.98	78,139,537.98	1.46	1,111,709	62,777	1,174,486
361.20	10,679,045.59	10,846,560.59	2.11	226,471	13,587	240,058
363.00	12,384,673.92	13,003,472.92	3.16	400,612	17,494	418,106
364.00	518,794.78	518,794.78	7.34	38,080	163	38,243
365.00	20,918.30	20,918.30	3.49	730	0	730
370.00	103,531.95	103,531.95	1.97	2,040	0	2,040
371.00	8,876,123.17	8,957,071.17	2.34	207,780	4,607	212,387
380.00	51,498,907.70	55,418,350.70	2.12	1,096,835	13,009	1,109,844
381.00	6,420,724.48	6,420,724.48	2.02	129,699	422	130,121
382.00	674,274.67	674,274.67	2.02	13,620	0	13,620
389.10	322,149.74	378,149.74	5.31	21,749	0	21,749
390.00	196,475.37	196,475.37	6.08	11,946	55	12,001
391.00	632,469.70	632,469.70	5.34	33,774	0	33,774
392.00	64,249.97	64,249.97	3.60	2,313	0	2,313
393.00	523,481.05	566,783.05	4.45	24,325	(34,214)	(9,889)
394.00	316,159.95	316,159.95	4.23	13,374	115	13,489
395.00	522,736.59	522,736.59	6.08	31,782	(8,992)	22,790
396.00	1,522,349.38	1,522,349.38	4.52	68,810	(25,052)	43,758
397.00	3,172,050.94	3,032,648.01	8.65	273,880	(17,423)	256,457
<b>TOTAL</b>	<b>270,354,492.79</b>	<b>279,896,124.86</b>		<b>5,243,815</b>	<b>48,878</b>	<b>5,292,693</b>

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

Account (1)	EXPERIENCED AND ESTIMATED NET SALVAGE					5 - YEAR AMORT. (7)
	2014 (2)	2015 (3)	2016 (4)	2017 (5)	2018 (5)	
354.20	(17,282)	(1,398)	(42)	0	0	3,744
354.30	(0)	(4,141)	0	(4,160)	(4,800)	2,620
354.40	(10,305)	(1,027)	(4,581)	0	0	3,182
354.70	0	(480)	0	0	0	96
355.00	(510)	(1,666)	(4,934)	(5,440)	(4,760)	3,462
360.10	(1,577)	(3,256)	(12,703)	0	0	3,507
361.10	(16,027)	(65,334)	(6,970)	(190,930)	(26,273)	61,107
361.20	0	(7,497)	(53,000)	(7,440)	(7,440)	15,075
363.00	(26,515)	(27,377)	(11,694)	(6,148)	(6,360)	15,619
364.00	(816)	0	0	0	0	163
371.00	(4,325)	(4,902)	(11,515)	0	0	4,148
380.00	(21,655)	(1,623)	(23,917)	(11,823)	(15,120)	14,828
381.00	0	0	(2,110)	0	0	422
382.00	0	0	0	0	0	0
390.00	0	0	(276)	0	0	55
391.00	0	0	0	0	0	0
392.00	0	0	0	0	0	0
393.00	(240)	0	171,552	0	0	(34,262)
394.00	0	0	(566)	0	0	113
395.00	0	0	44,960	0	0	(8,992)
396.00	0	(4,190)	131,476	0	0	(25,457)
397.00	0	0	87,116	0	0	(17,423)
TOTAL	(99,252)	(122,889)	302,795	(225,941)	(64,753)	42,007

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## PART II. DETAILED DEPRECIATION CALCULATIONS

**CUMULATIVE DEPRECIATED ORIGINAL COST**

**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018**

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT (2)-(3) (4)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
1915	49,777	42,631	7,146	7,146	0.00
1920	125,890	105,894	19,996	27,142	0.01
1929	16,390	13,415	2,975	30,117	0.01
1930	192,487	155,517	36,970	67,087	0.03
1932	602	602	0	67,087	0.03
1935	38,488	30,352	8,136	75,223	0.03
1939	227,234	176,134	51,100	126,323	0.05
1945	42,363	31,359	11,004	137,327	0.05
1955	45,120	30,779	14,341	151,667	0.06
1957	1,838,700	1,292,263	546,437	698,104	0.28
1961	402,616	364,285	38,331	736,435	0.29
1962	32,531	20,793	11,738	748,173	0.30
1965	838,719	563,604	275,115	1,023,288	0.40
1967	260,163	229,331	30,832	1,054,120	0.42
1968	81,441	49,695	31,746	1,085,867	0.43
1969	514,535	293,355	221,180	1,307,046	0.52
1970	485	375	110	1,307,156	0.52
1971	546	420	126	1,307,282	0.52
1972	1,036	896	140	1,307,423	0.52
1973	241,320	56,491	184,829	1,492,252	0.59
1974	1,646,295	258,898	1,387,397	2,879,649	1.14
1975	2,855,472	1,250,252	1,605,220	4,484,868	1.77
1976	1,448,084	391,919	1,056,165	5,541,033	2.19
1977	1,044,691	446,598	598,093	6,139,126	2.43
1978	401,288	109,174	292,114	6,431,241	2.54
1979	147,760	52,513	95,247	6,526,488	2.58
1980	440,204	262,944	177,260	6,703,748	2.65
1981	237,108	69,399	167,709	6,871,457	2.71
1982	194,186	99,498	94,688	6,966,145	2.75
1983	871,297	394,500	476,797	7,442,942	2.94
1984	3,061,051	1,650,783	1,410,268	8,853,210	3.50
1985	2,217,892	1,068,439	1,149,453	10,002,663	3.95
1986	2,953,399	1,785,127	1,168,272	11,170,935	4.41
1987	1,573,465	797,669	775,796	11,946,731	4.72
1988	3,120,659	1,427,674	1,692,985	13,639,716	5.39
1989	3,276,459	1,366,660	1,909,799	15,549,515	6.14
1990	301,155	121,100	180,055	15,729,570	6.21
1991	569,046	339,635	229,411	15,958,981	6.30
1992	4,138,821	2,150,712	1,988,109	17,947,090	7.09
1993	11,774,795	4,851,264	6,923,531	24,870,621	9.83
1994	894,254	290,954	603,300	25,473,921	10.06
1995	889,085	283,218	605,867	26,079,788	10.30
1996	1,212,490	435,083	777,407	26,857,195	10.61
1997	6,488,620	1,662,549	4,826,071	31,683,266	12.52
1998	3,593,634	1,075,990	2,517,644	34,200,911	13.51
1999	507,550	139,252	368,298	34,569,208	13.66
2000	8,725,913	2,744,077	5,981,836	40,551,044	16.02
2001	2,855,961	694,737	2,161,224	42,712,269	16.87
2002	2,862,293	734,512	2,127,781	44,840,050	17.71
2003	1,519,652	408,953	1,110,699	45,950,749	18.15
2004	4,059,055	699,641	3,359,414	49,310,163	19.48
2005	6,765,469	1,706,317	5,059,152	54,369,315	21.48
2006	5,690,030	1,209,702	4,480,328	58,849,643	23.25
2007	8,062,736	1,311,352	6,751,384	65,601,027	25.92
2008	10,595,717	1,875,717	8,720,000	74,321,027	29.36
2009	58,379,516	12,464,329	45,915,187	120,236,214	47.50

**PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)**

**CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018**

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT (2)-(3) (4)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
2010	23,283,421	4,146,386	19,137,035	139,373,249	55.06
2011	1,583,174	410,329	1,172,845	140,546,094	55.52
2012	2,775,238	394,503	2,380,735	142,926,829	56.46
2013	9,472,729	987,859	8,484,870	151,411,699	59.82
2014	45,268,009	4,911,203	40,356,806	191,768,505	75.76
2015	18,348,464	1,439,469	16,908,995	208,677,501	82.44
2016	11,582,781	437,882	11,144,899	219,822,400	86.84
2017	23,572,671	642,151	22,930,520	242,752,919	95.90
2018	10,509,915	132,204	10,377,711	253,130,630	100.00
SUBTOTAL	316,721,948	63,591,318	253,130,630		
UNDATED	(36,825,824)	(5,714,092)	(31,111,732)		
NONDEPRECIABLE	2,952,709	0	2,952,709		
TOTAL	282,848,834	57,877,226	224,971,608		

**NET UTILITY PLANT IN SERVICE**

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R3						
NET SALVAGE PERCENT.. 0						
2007	20,658.88	5,082	5,057	15,602	33.93	460
2008	113,755.87	25,633	25,508	88,248	34.86	2,531
2009	178,514.40	36,456	36,277	142,237	35.81	3,972
2011	8,586.64	1,391	1,384	7,203	37.71	191
2013	64,846.18	7,738	7,700	57,146	39.63	1,442
2014	14,766.25	1,444	1,437	13,329	40.60	328
2015	41,897.14	3,193	3,177	38,720	41.57	931
2016	36,271.50	1,975	1,965	34,306	42.55	806
2017	3,066,760.00	100,191	99,702	2,967,058	43.53	68,161
	3,546,056.86	183,103	182,207	3,363,850		78,822

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 42.7 2.22



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
1965	46,590.62	36,853	46,591			
1967	12,074.77	9,351	12,075			
1976	25,722.14	17,558	25,722			
1977	28,511.85	19,126	28,512			
1978	10,942.89	7,207	10,943			
1980	3,196.99	2,026	3,197			
1982	29,078.91	17,663	29,079			
1983	85,391.89	50,723	84,351	1,041	20.30	51
1984	48,385.34	28,073	46,685	1,700	20.99	81
1985	141,301.19	80,033	133,093	8,208	21.68	379
1986	470,774.81	259,962	432,311	38,464	22.39	1,718
1987	29,353.74	15,786	26,252	3,102	23.11	134
1988	99,359.70	51,985	86,450	12,910	23.84	542
1989	53,924.32	27,415	45,590	8,334	24.58	339
1991	282,960.09	135,312	225,021	57,939	26.09	2,221
1992	323,001.09	149,485	248,590	74,411	26.86	2,770
1993	483,476.19	216,307	359,713	123,763	27.63	4,479
1994	48,722.83	21,029	34,971	13,752	28.42	484
1996	24,017.33	9,597	15,960	8,057	30.02	268
1997	103,840.73	39,792	66,173	37,668	30.84	1,221
1998	222,779.67	81,716	135,892	86,888	31.66	2,744
1999	11,096.08	3,886	6,462	4,634	32.49	143
2000	6,999.68	2,334	3,881	3,119	33.33	94
2001	178,132.89	56,361	93,727	84,406	34.18	2,469
2002	9,678.94	2,898	4,819	4,860	35.03	139
2003	269,910.07	76,169	126,667	143,243	35.89	3,991
2004	101,000.19	26,745	44,476	56,524	36.76	1,538
2005	9,080.38	2,245	3,733	5,347	37.64	142
2006	925,450.23	212,483	353,354	572,096	38.52	14,852
2007	514,888.36	109,053	181,353	333,535	39.41	8,463
2008	50,086.29	9,717	16,159	33,927	40.30	842
2009	2,924,464.82	514,706	855,944	2,068,521	41.20	50,207
2010	1,286,750.99	203,049	337,666	949,085	42.11	22,538
2011	14,537.37	2,029	3,374	11,163	43.02	259
2013	181,282.01	18,636	30,991	150,291	44.86	3,350
2014	6,952,801.43	586,816	975,861	5,976,940	45.78	130,558
2015	1,549,904.35	101,984	169,597	1,380,307	46.71	29,551
2016	543,928.26	25,565	42,514	501,414	47.65	10,523

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R2.5						
NET SALVAGE PERCENT.. 0						
2017	108,742.47	3,067	5,100	103,642	48.59	2,133
2018	567,896.00	5,338	8,878	559,018	49.53	11,286
9999	2,734,528.70-	471,782-	780,711-	1,953,817-		45,213-
	16,045,509.20	2,768,298	4,581,016	11,464,494		265,296
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 43.2						1.65

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2						
NET SALVAGE PERCENT.. 0						
1932	602.40	513	602			
1957	140,486.42	97,908	134,447	6,039	19.70	307
1961	391,131.16	259,891	356,882	34,249	21.81	1,570
1965	53,961.55	33,996	46,683	7,279	24.05	303
1967	67,934.06	41,565	57,077	10,857	25.23	430
1973	38,481.00	21,336	29,299	9,182	28.96	317
1975	419,410.21	224,095	307,727	111,683	30.27	3,690
1976	50,336.60	26,376	36,220	14,117	30.94	456
1977	8,681.00	4,459	6,123	2,558	31.61	81
1984	693,417.71	303,717	417,064	276,354	36.53	7,565
1985	133,860.33	57,128	78,448	55,412	37.26	1,487
1986	246,413.42	102,395	140,609	105,804	37.99	2,785
1987	821,866.00	332,034	455,949	365,917	38.74	9,445
1988	1,266,453.86	497,032	682,524	583,930	39.49	14,787
1989	17,260.28	6,575	9,029	8,231	40.24	205
1991	123,376.00	44,092	60,547	62,829	41.77	1,504
1992	1,496,329.14	516,802	709,672	786,657	42.55	18,488
1993	319,290.14	106,445	146,170	173,120	43.33	3,995
1994	16,680.06	5,358	7,358	9,322	44.12	211
1995	11,077.00	3,424	4,702	6,375	44.91	142
1996	602,783.45	178,888	245,649	357,134	45.71	7,813
1997	69,732.72	19,836	27,239	42,494	46.51	914
1998	600,489.64	163,333	224,289	376,201	47.32	7,950
2000	6,605,956.92	1,630,152	2,238,523	4,367,434	48.96	89,204
2001	461,562.96	108,075	148,408	313,155	49.78	6,291
2002	162,693.43	36,017	49,459	113,234	50.61	2,237
2004	15,555.13	3,042	4,177	11,378	52.29	218
2005	537,200.04	98,103	134,715	402,485	53.13	7,575
2006	451,068.80	76,402	104,915	346,154	53.99	6,411
2007	24,985.47	3,905	5,362	19,623	54.84	358
2008	163,724.12	23,426	32,169	131,555	55.70	2,362
2009	16,500,764.39	2,139,984	2,938,624	13,562,140	56.57	239,741
2010	5,022,247.56	584,138	802,138	4,220,110	57.44	73,470
2011	293,205.72	30,177	41,439	251,767	58.31	4,318
2012	9,700.00	867	1,191	8,509	59.19	144
2013	162,285.83	12,309	16,903	145,383	60.07	2,420
2014	12,894,243.39	801,377	1,100,449	11,793,794	60.96	193,468

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R2						
NET SALVAGE PERCENT.. 0						
2015	44,549.99	2,159	2,965	41,585	61.85	672
2016	18,625.77	645	885	17,741	62.75	283
9999	1,853,012.73-	312,650-	429,327-	1,423,686-		25,949-
	49,105,410.94	8,285,326	11,377,304	37,728,107		687,668
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 54.9						1.40

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-S1						
NET SALVAGE PERCENT.. 0						
1939	3,452.02	3,452	3,452			
1972	446.52	358	447			
1984	11,202.11	7,537	11,202			
1992	14,917.17	8,464	14,917			
1993	16,933.00	9,362	16,933			
1994	29,134.78	15,666	29,135			
1997	5,841.41	2,862	5,841			
2002	1,064.74	427	1,065			
2003	42,833.69	16,350	42,834			
2007	16,181.84	4,822	16,182			
2008	362,672.62	99,891	362,673			
2009	80,876.96	20,381	80,877			
2010	38,918.53	8,885	38,852	67	27.01	2
2011	7,102.81	1,445	6,319	784	27.88	28
2012	28,458.72	5,074	22,188	6,271	28.76	218
2013	25,253.61	3,846	16,818	8,436	29.67	284
2014	413,621.43	51,996	227,367	186,254	30.60	6,087
2015	1,021,880.15	100,727	440,457	581,423	31.55	18,429
2016	9,177.45	650	2,842	6,335	32.52	195
2017	4,999.97	213	931	4,069	33.51	121
2018	230,000.00	3,287	14,374	215,626	34.50	6,250
	2,364,969.53	365,695	1,355,706	1,009,263		31,614

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 31.9 1.34

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-R2.5						
NET SALVAGE PERCENT.. 0						
1983	11,674.36	8,959	11,674			
1987	14,079.28	10,008	14,079			
1989	38,504.21	26,117	38,504			
1992	74,808.86	46,766	74,809			
1993	174,329.84	105,743	174,330			
1994	17,914.79	10,518	17,915			
1997	28,035.00	14,755	28,035			
1998	11,709.47	5,915	11,709			
2001	36,687.50	16,122	36,688			
2002	64,982.15	27,088	62,696	2,286	20.41	112
2005	68,315.75	23,676	54,799	13,517	22.87	591
2007	16,358.52	4,880	11,295	5,064	24.56	206
2008	226,476.04	61,925	143,328	83,148	25.43	3,270
2009	2,876,290.33	714,959	1,654,805	1,221,485	26.30	46,444
2010	20,403.96	4,559	10,552	9,852	27.18	362
2011	14,210.83	2,810	6,504	7,707	28.08	274
2012	27,375.18	4,709	10,899	16,476	28.98	569
2013	26,534.53	3,882	8,985	17,550	29.88	587
2014	897,590.18	107,711	249,302	648,288	30.80	21,048
2015	90,366.92	8,468	19,599	70,768	31.72	2,231
2016	10,442.49	701	1,622	8,820	32.65	270
2017	847,950.54	34,164	79,075	768,876	33.59	22,890
2018	850,000.00	11,416	26,423	823,577	34.53	23,851
9999	144,517.16-	28,160-	61,611-	82,907-		2,751-
	6,300,523.57	1,227,691	2,686,016	3,614,507		119,954
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						30.1 1.90

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-S2						
NET SALVAGE PERCENT.. 0						
1957	19,260.35	13,378	2,892	16,368	21.38	766
1965	13,337.78	8,500	1,838	11,500	25.39	453
1973	199,477.92	113,760	24,593	174,885	30.08	5,814
1974	1,503,776.46	843,829	182,424	1,321,352	30.72	43,013
1975	849,779.52	468,959	101,382	748,398	31.37	23,857
1976	1,013,708.88	549,724	118,842	894,867	32.04	27,930
1977	458,850.00	244,434	52,843	406,007	32.71	12,412
1978	270,355.19	141,358	30,560	239,795	33.40	7,179
1979	73,749.33	37,812	8,174	65,575	34.11	1,922
1980	75,105.93	37,746	8,160	66,946	34.82	1,923
1981	160,944.25	79,207	17,123	143,821	35.55	4,046
1982	53,478.41	25,754	5,568	47,910	36.29	1,320
1983	192,381.70	90,556	19,577	172,805	37.05	4,664
1985	309,939.29	139,073	30,066	279,873	38.59	7,252
1986	93,600.62	40,931	8,849	84,752	39.39	2,152
1987	225,949.78	96,223	20,802	205,148	40.19	5,104
1988	404,167.30	167,382	36,186	367,981	41.01	8,973
1989	92,110.83	37,055	8,011	84,100	41.84	2,010
1991	75,459.60	28,524	6,166	69,294	43.54	1,592
1992	34,682.29	12,679	2,741	31,941	44.41	719
1993	542,846.21	191,625	41,427	501,419	45.29	11,071
1994	316,329.79	107,644	23,271	293,059	46.18	6,346
1996	132,298.94	41,599	8,993	123,306	47.99	2,569
1997	1,385,627.69	417,476	90,252	1,295,376	48.91	26,485
1998	466,886.30	134,463	29,069	437,817	49.84	8,784
1999	210,238.89	57,725	12,479	197,760	50.78	3,894
2000	489,230.36	127,689	27,605	461,625	51.73	8,924
2001	874,316.30	216,332	46,768	827,548	52.68	15,709
2002	556,204.52	129,991	28,102	528,103	53.64	9,845
2003	385,945.70	84,854	18,344	367,602	54.61	6,731
2004	2,024,605.33	417,069	90,164	1,934,441	55.58	34,805
2005	181,427.72	34,834	7,531	173,897	56.56	3,075
2006	1,574,938.13	280,118	60,558	1,514,380	57.55	26,314
2007	1,291,675.57	211,654	45,756	1,245,920	58.53	21,287
2008	3,009,439.71	450,543	97,401	2,912,039	59.52	48,925
2009	605,043.84	82,026	17,733	587,311	60.51	9,706
2010	416,803.74	50,554	10,929	405,875	61.51	6,599
2013	259,083.62	20,356	4,401	254,683	64.50	3,949
2014	4,335,920.72	278,756	60,263	4,275,658	65.50	65,277
2015	2,381,716.21	119,086	25,745	2,355,971	66.50	35,428

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-S2						
NET SALVAGE PERCENT.. 0						
2016	3,105,739.49	110,906	23,976	3,081,763	67.50	45,656
2017	2,024,391.00	43,383	9,378	2,015,013	68.50	29,416
9999	11,492,429.75-	2,385,460-	515,702-	10,976,728-		208,784-
	21,198,395.46	4,400,107	951,240	20,247,155		385,112
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						52.6 1.82



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. 0						
1915	49,777.21	45,084	42,631	7,146	6.60	1,083
1920	125,889.66	111,988	105,894	19,996	7.73	2,587
1929	15,780.10	13,542	12,805	2,975	9.93	300
1930	192,487.29	164,467	155,517	36,970	10.19	3,628
1935	38,487.90	32,099	30,352	8,136	11.62	700
1939	173,099.23	141,150	133,469	39,630	12.92	3,067
1945	42,362.78	33,164	31,359	11,004	15.20	724
1955	36,517.65	26,100	24,680	11,838	19.97	593
1957	1,464,635.69	1,023,780	968,068	496,568	21.07	23,568
1961	10,601.57	7,056	6,672	3,930	23.41	168
1962	29,597.82	19,442	18,384	11,214	24.02	467
1965	540,425.77	340,393	321,869	218,557	25.91	8,435
1968	33,984.52	20,449	19,336	14,649	27.88	525
1969	414,716.28	245,512	232,152	182,564	28.56	6,392
1974	112,636.53	61,049	57,727	54,910	32.06	1,713
1975	1,401,483.21	744,986	704,445	697,038	32.79	21,258
1976	244,233.12	127,280	120,354	123,879	33.52	3,696
1977	178,603.08	91,189	86,227	92,376	34.26	2,696
1978	78,720.23	39,349	37,208	41,512	35.01	1,186
1979	32,361.54	15,829	14,968	17,394	35.76	486
1982	45,384.17	20,708	19,581	25,803	38.06	678
1983	440,212.16	195,894	185,234	254,978	38.85	6,563
1984	1,336,752.33	579,963	548,402	788,350	39.63	19,893
1985	799,995.21	337,942	319,552	480,443	40.43	11,883
1986	623,261.50	256,160	242,220	381,042	41.23	9,242
1987	70,035.48	27,984	26,461	43,574	42.03	1,037
1988	802,724.63	311,345	294,402	508,323	42.85	11,863
1989	2,330,399.85	876,557	828,856	1,501,544	43.67	34,384
1990	220,300.23	80,284	75,915	144,385	44.49	3,245
1992	363,035.43	123,639	116,911	246,124	46.16	5,332
1993	5,827,182.19	1,914,637	1,810,446	4,016,736	47.00	85,462
1994	239,439.49	75,766	71,643	167,796	47.85	3,507
1995	731,333.27	222,537	210,427	520,906	48.70	10,696
1996	237,277.86	69,285	65,515	171,763	49.56	3,466
1997	3,370,609.91	942,793	891,488	2,479,122	50.42	49,169
1998	1,675,515.41	447,849	423,478	1,252,037	51.29	24,411
1999	46,363.28	11,816	11,173	35,190	52.16	675
2000	956,264.45	231,693	219,085	737,179	53.04	13,899
2001	644,722.69	148,009	139,955	504,768	53.93	9,360
2002	1,106,061.06	240,015	226,954	879,107	54.81	16,039
2003	365,967.78	74,764	70,695	295,273	55.70	5,301

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 70-R2.5						
NET SALVAGE PERCENT.. 0						
2004	367,679.63	70,385	66,555	301,125	56.60	5,320
2005	2,927,187.39	522,708	494,263	2,432,924	57.50	42,312
2006	1,125,452.72	186,341	176,201	949,252	58.41	16,252
2007	3,978,010.33	607,482	574,424	3,403,586	59.31	57,386
2008	3,788,344.07	528,739	499,966	3,288,378	60.23	54,597
2009	7,885,709.97	998,094	943,779	6,941,931	61.14	113,542
2010	3,782,762.31	429,079	405,729	3,377,033	62.06	54,416
2011	417,264.48	41,847	39,570	377,694	62.98	5,997
2012	1,444,097.31	125,636	118,799	1,325,298	63.91	20,737
2013	5,259,912.11	387,708	366,609	4,893,303	64.84	75,467
2014	4,587,645.15	277,231	262,144	4,325,501	65.77	65,767
2015	4,223,915.11	198,524	187,721	4,036,194	66.71	60,504
2016	5,542,260.86	186,830	176,663	5,365,598	67.64	79,326
2017	11,679,750.63	236,982	224,086	11,455,665	68.58	167,041
2018	3,735,612.00	25,066	23,702	3,711,910	69.53	53,386
9999	10,055,305.65-	1,746,237-	1,651,210-	8,404,095-		146,099-
	78,139,537.98	13,569,963	12,831,511	65,308,027		1,135,328
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						57.5 1.45

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-S1.5						
NET SALVAGE PERCENT.. 0						
1939	43,345.67	38,786	31,877	11,469	5.26	2,180
1955	6,573.18	5,302	4,358	2,215	9.67	229
1965	50,195.91	37,125	30,512	19,684	13.02	1,512
1968	35,295.30	25,300	20,793	14,502	14.16	1,024
1969	84,382.50	59,810	49,156	35,226	14.56	2,419
1974	17,961.87	11,966	9,834	8,128	16.69	487
1977	42,705.67	27,263	22,407	20,299	18.08	1,123
1984	95,805.99	54,111	44,472	51,334	21.76	2,359
1985	181,590.11	100,492	82,591	98,999	22.33	4,433
1986	107,124.38	58,019	47,684	59,440	22.92	2,593
1990	2,817.14	1,384	1,137	1,680	25.43	66
1992	101,486.72	47,130	38,735	62,752	26.78	2,343
1993	107,301.88	48,329	39,720	67,582	27.48	2,459
1994	55,109.86	24,039	19,757	35,353	28.19	1,254
1995	20,053.78	8,455	6,949	13,105	28.92	453
1996	39,632.28	16,122	13,250	26,382	29.66	889
1997	1,035,865.01	405,645	333,386	702,479	30.42	23,093
1998	214,300.52	80,577	66,224	148,077	31.20	4,746
1999	9,524.84	3,431	2,820	6,705	31.99	210
2000	166,104.34	57,140	46,961	119,143	32.80	3,632
2001	232,422.67	76,142	62,579	169,844	33.62	5,052
2002	199,905.83	62,131	51,063	148,843	34.46	4,319
2003	115,533.31	33,944	27,897	87,636	35.31	2,482
2004	241,011.23	66,616	54,749	186,262	36.18	5,148
2005	875,829.27	226,665	186,288	689,541	37.06	18,606
2006	3,648.29	879	722	2,926	37.96	77
2007	1,566,060.49	348,605	286,507	1,279,553	38.87	32,919
2008	677,678.47	138,382	113,732	563,946	39.79	14,173
2009	121,501.08	22,551	18,534	102,967	40.72	2,529
2010	212,788.17	35,493	29,171	183,617	41.66	4,408
2011	37,445.07	5,534	4,548	32,897	42.61	772
2012	21,648.86	2,780	2,285	19,364	43.58	444
2013	15,585.36	1,699	1,396	14,189	44.55	318
2015	6,304,435.82	440,050	361,662	5,942,774	46.51	127,774
2017	2,022,187.48	60,666	49,860	1,972,327	48.50	40,667
2018	169,015.00	1,690	1,389	167,626	49.50	3,386
9999	4,387,312.76-	758,657-	623,515-	3,763,798-		92,326-
	10,846,560.59	1,875,596	1,541,490	9,305,071		228,252

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 40.8 2.10

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 38-R3						
NET SALVAGE PERCENT.. 0						
1929	609.66	610	610			
1939	5,734.48	5,734	5,734			
1955	2,028.89	2,015	1,741	288	0.26	288
1957	168,098.88	165,223	142,777	25,322	0.65	25,322
1961	883.49	846	731	152	1.62	94
1962	2,932.76	2,788	2,409	524	1.87	280
1965	53,149.38	49,457	42,738	10,411	2.64	3,944
1968	12,161.54	11,070	9,566	2,596	3.41	761
1969	15,435.84	13,941	12,047	3,389	3.68	921
1970	484.55	434	375	110	3.94	28
1971	546.37	486	420	126	4.22	30
1972	589.79	520	449	141	4.50	31
1973	2,433.17	2,126	1,837	596	4.80	124
1974	11,919.97	10,314	8,913	3,007	5.12	587
1975	179,814.90	154,026	133,101	46,714	5.45	8,571
1976	57,191.90	48,463	41,879	15,313	5.80	2,640
1977	56,203.04	47,077	40,681	15,522	6.17	2,516
1978	32,862.06	27,181	23,488	9,374	6.57	1,427
1979	41,649.24	33,988	29,371	12,278	6.99	1,757
1980	361,901.13	291,139	251,587	110,314	7.43	14,847
1981	71,777.95	56,856	49,132	22,646	7.90	2,867
1982	59,074.36	46,016	39,765	19,309	8.40	2,299
1983	141,637.28	108,389	93,664	47,973	8.92	5,378
1984	249,316.19	187,249	161,810	87,506	9.46	9,250
1985	168,028.22	123,677	106,875	61,153	10.03	6,097
1986	174,572.23	125,785	108,697	65,875	10.62	6,203
1987	212,871.00	149,906	129,541	83,330	11.24	7,414
1988	210,124.88	144,488	124,859	85,266	11.87	7,183
1989	307,809.75	206,313	178,284	129,526	12.53	10,337
1990	73,184.00	47,743	41,257	31,927	13.21	2,417
1991	78,791.90	49,971	43,182	35,610	13.90	2,562
1992	87,577.06	53,906	46,583	40,994	14.61	2,806
1993	585,447.49	349,114	301,685	283,762	15.34	18,498
1994	92,299.36	53,242	46,009	46,290	16.08	2,879
1995	88,867.92	49,485	42,762	46,106	16.84	2,738
1996	94,241.65	50,544	43,677	50,565	17.62	2,870
1997	436,476.50	225,017	194,448	242,028	18.41	13,147
1998	357,860.08	176,951	152,911	204,949	19.21	10,669
1999	151,359.25	71,576	61,852	89,507	20.03	4,469
2000	478,810.65	215,968	186,628	292,183	20.86	14,007
2001	171,433.14	73,536	63,546	107,887	21.70	4,972

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 38-R3						
NET SALVAGE PERCENT.. 0						
2002	285,338.70	115,939	100,188	185,151	22.56	8,207
2003	196,768.02	75,496	65,240	131,528	23.42	5,616
2004	735,236.22	265,075	229,063	506,173	24.30	20,830
2005	332,039.88	111,934	96,727	235,313	25.19	9,342
2006	873,997.98	273,928	236,714	637,284	26.09	24,426
2007	496,610.19	143,754	124,224	372,386	27.00	13,792
2008	516,345.41	136,966	118,359	397,986	27.92	14,255
2009	2,533,040.74	609,931	527,070	2,005,971	28.85	69,531
2010	474,430.04	102,501	88,576	385,854	29.79	12,952
2011	172,125.48	32,931	28,457	143,668	30.73	4,675
2012	216,563.77	36,019	31,126	185,438	31.68	5,853
2013	570,065.76	80,408	69,484	500,582	32.64	15,336
2014	978,074.49	113,251	97,865	880,209	33.60	26,197
2015	1,175,397.00	106,091	91,678	1,083,719	34.57	31,349
2016	679,477.66	43,806	37,855	641,623	35.55	18,048
2017	637,860.71	24,672	21,320	616,541	36.53	16,878
2018	640,000.00	8,250	7,129	632,871	37.51	16,872
9999	3,808,091.03-	1,294,341-	1,118,694-	2,689,397-		117,197-
	13,003,472.92	4,419,781	3,820,002	9,183,471		400,192
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.9						3.08

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 20-L3						
NET SALVAGE PERCENT.. 0						
1988	4,249.82	3,478	1,384	2,866	3.63	790
1992	8,806.29	6,754	2,688	6,118	4.66	1,313
2002	10,523.98	6,962	2,771	7,753	6.77	1,145
2003	7,550.27	4,866	1,937	5,613	7.11	789
2004	1,498.38	933	371	1,127	7.54	149
2005	38,651.31	23,075	9,185	29,466	8.06	3,656
2006	17,284.31	9,792	3,898	13,386	8.67	1,544
2007	9,030.61	4,804	1,912	7,119	9.36	761
2008	29,418.95	14,533	5,785	23,634	10.12	2,335
2009	92,082.61	41,713	16,604	75,479	10.94	6,899
2010	19,205.24	7,874	3,134	16,071	11.80	1,362
2013	12,166.10	3,309	1,317	10,849	14.56	745
2014	270,185.46	60,522	24,091	246,094	15.52	15,857
2015	4,972.70	868	346	4,627	16.51	280
2016	7,895.56	987	392	7,504	17.50	429
9999	14,726.81-	5,258-	2,093-	12,634-		1,050-
	518,794.78	185,212	73,722	445,072		37,004
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.0 7.13

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 30-S1.5						
NET SALVAGE PERCENT.. 0						
2009	14,938.00	4,471	4,026	10,912	21.02	519
2010	5,980.30	1,619	1,458	4,522	21.88	207
	20,918.30	6,090	5,484	15,434		726

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 21.3 3.47

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 370.00 RECEIVING WELLS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
2007	7,369.99	1,638	1,755	5,615	38.89	144
2009	92,112.20	16,985	18,203	73,909	40.78	1,812
2013	4,049.76	436	467	3,582	44.62	80
	103,531.95	19,059	20,425	83,107		2,036
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						40.8 1.97



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 40-S0						
NET SALVAGE PERCENT.. 0						
1957	12,038.26	9,944	12,038			
1967	5,140.50	3,731	5,091	50	10.97	5
1976	56,891.00	35,841	48,902	7,989	14.80	540
1977	7,043.00	4,360	5,949	1,094	15.24	72
1978	8,408.00	5,112	6,975	1,433	15.68	91
1982	7,169.88	4,035	5,505	1,665	17.49	95
1984	1,371.62	740	1,010	362	18.42	20
1985	6,476.79	3,418	4,664	1,813	18.89	96
1986	150,338.52	77,537	105,793	44,546	19.37	2,300
1988	17,594.81	8,648	11,799	5,796	20.34	285
1992	140,883.19	62,200	84,867	56,016	22.34	2,507
1993	24,770.06	10,614	14,482	10,288	22.86	450
1994	19,130.99	7,949	10,846	8,285	23.38	354
1996	56,678.77	22,034	30,064	26,615	24.45	1,089
1997	32,695.30	12,269	16,740	15,955	24.99	638
1999	41,804.10	14,516	19,806	21,998	26.11	843
2001	19,670.79	6,265	8,548	11,123	27.26	408
2003	129,284.98	37,331	50,935	78,350	28.45	2,754
2004	170,436.90	46,614	63,601	106,836	29.06	3,676
2005	94,833.67	24,443	33,350	61,484	29.69	2,071
2006	55,301.96	13,369	18,241	37,061	30.33	1,222
2007	33,125.48	7,470	10,192	22,933	30.98	740
2008	393,641.83	82,271	112,252	281,390	31.64	8,893
2009	1,122,432.97	215,227	293,659	828,774	32.33	25,635
2010	540,134.69	94,118	128,416	411,719	33.03	12,465
2011	42,064.06	6,573	8,968	33,096	33.75	981
2012	39,573.39	5,451	7,437	32,136	34.49	932
2013	47,427.88	5,632	7,684	39,744	35.25	1,127
2014	2,707,612.58	268,054	365,738	2,341,875	36.04	64,980
2015	329,257.18	25,929	35,378	293,879	36.85	7,975
2016	801,426.24	46,082	62,875	738,551	37.70	19,590
2017	1,828,090.00	64,897	88,547	1,739,543	38.58	45,089
2018	80,948.00	992	1,354	79,594	39.51	2,015
9999	66,626.22-	9,109-	12,418-	54,209-		1,550-
	8,957,071.17	1,224,557	1,669,288	7,287,783		208,388

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 35.0 2.33

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2						
NET SALVAGE PERCENT.. 0						
1939	1,602.27	1,565	1,602			
1957	22,040.60	19,004	21,425	616	6.20	99
1965	81,058.34	65,081	73,373	7,685	8.87	866
1967	175,013.78	137,561	155,088	19,926	9.63	2,069
1973	928.10	676	762	166	12.21	14
1977	264,093.52	180,817	203,856	60,238	14.19	4,245
1981	4,386.10	2,789	3,144	1,242	16.39	76
1984	624,799.73	372,656	420,138	204,662	18.16	11,270
1985	476,700.36	277,759	313,150	163,550	18.78	8,709
1986	1,079,788.53	614,043	692,282	387,507	19.41	19,964
1987	199,310.04	110,505	124,585	74,725	20.05	3,727
1988	285,791.55	154,327	173,991	111,801	20.70	5,401
1989	436,449.56	229,184	258,386	178,064	21.37	8,332
1990	4,853.49	2,476	2,791	2,062	22.04	94
1991	8,458.57	4,186	4,719	3,740	22.73	165
1992	1,483,294.18	711,329	801,963	681,331	23.42	29,092
1993	3,397,208.53	1,575,557	1,776,307	1,620,902	24.13	67,174
1994	59,492.39	26,653	30,049	29,443	24.84	1,185
1995	37,752.92	16,301	18,378	19,375	25.57	758
1996	25,559.70	10,622	11,975	13,585	26.30	517
1997	19,895.50	7,936	8,947	10,948	27.05	405
1998	20,393.36	7,795	8,788	11,605	27.80	417
1999	17,085.50	6,238	7,033	10,052	28.57	352
2001	220,279.92	72,840	82,121	138,159	30.12	4,587
2002	355,591.53	111,339	125,525	230,067	30.91	7,443
2004	354,621.68	98,429	110,970	243,652	32.51	7,495
2005	1,403,245.74	364,226	410,634	992,612	33.32	29,790
2006	280,275.61	67,577	76,187	204,089	34.15	5,976
2007	33,655.28	7,494	8,449	25,206	34.98	721
2008	845,353.91	172,638	194,635	650,719	35.81	18,171
2009	18,208,568.13	3,374,594	3,804,571	14,403,997	36.66	392,908
2010	9,670,535.51	1,609,564	1,814,648	7,855,888	37.51	209,434
2011	18,098.40	2,671	3,011	15,087	38.36	393
2012	744,185.81	95,420	107,578	636,608	39.23	16,228
2013	2,452,256.00	267,026	301,049	2,151,207	40.10	53,646
2014	7,581,098.30	677,220	763,509	6,817,589	40.98	166,364
2015	1,093,169.06	76,281	86,000	1,007,169	41.86	24,060
2016	418,659.78	20,933	23,600	395,060	42.75	9,241

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R2						
NET SALVAGE PERCENT.. 0						
2017	1,077,436.89	32,323	36,442	1,040,995	43.65	23,849
2018	4,135,443.00	41,354	46,623	4,088,820	44.55	91,780
9999	2,200,080.47-	443,961-	500,522-	1,699,558-		46,852-
	55,418,350.70	11,183,028	12,607,762	42,810,589		1,180,165
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						36.3 2.13

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 381.00 PLANT SEWERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
1988	30,192.33	16,612	16,079	14,113	22.49	628
2008	294,411.86	59,824	57,904	236,508	39.84	5,936
2009	4,434,866.70	817,789	791,543	3,643,324	40.78	89,341
2010	1,187,964.50	196,252	189,953	998,012	41.74	23,910
2011	8,717.46	1,274	1,233	7,484	42.69	175
2012	1,684.33	214	207	1,477	43.66	34
2014	440,381.98	38,842	37,596	402,786	45.59	8,835
2015	7,458.23	512	496	6,962	46.57	149
2016	45,239.42	2,226	2,154	43,085	47.54	906
9999	30,192.33-	5,305-	5,135-	25,058-		608-
	6,420,724.48	1,128,240	1,092,030	5,328,694		129,306
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						41.2 2.01

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 382.00 OUTFALL SEWER LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. 0						
1957	12,139.53	10,724	10,616	1,524	5.83	261
1975	4,984.00	3,634	3,597	1,387	13.54	102
1993	202,475.94	95,245	94,287	108,189	26.48	4,086
2004	1,695.94	471	466	1,230	36.11	34
2005	9,240.93	2,397	2,373	6,868	37.03	185
2006	201,123.34	48,431	47,944	153,179	37.96	4,035
2009	26,051.26	4,804	4,756	21,295	40.78	522
2010	27,827.93	4,597	4,551	23,277	41.74	558
2014	188,735.80	16,646	16,478	172,258	45.59	3,778
	674,274.67	186,949	185,068	489,207		13,561

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 36.1 2.01

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 20-S2.5						
NET SALVAGE PERCENT.. 0						
2010	273,149.74	112,811	105,938	167,212	11.74	14,243
2017	49,000.00	3,675	3,451	45,549	18.50	2,462
2018	56,000.00	1,400	1,315	54,685	19.50	2,804
	378,149.74	117,886	110,704	267,446		19,509

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.7 5.16

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1999	1,200.00	1,170	983	217	0.50	217
2000	1,847.00	1,708	1,435	412	1.50	275
2001	15,016.00	13,139	11,039	3,977	2.50	1,591
2008	3,929.23	2,063	1,733	2,196	9.50	231
2009	107,117.95	50,881	42,750	64,368	10.50	6,130
2010	20,831.92	8,854	7,439	13,393	11.50	1,165
2012	7,908.11	2,570	2,159	5,749	13.50	426
2013	18,309.85	5,035	4,230	14,080	14.50	971
2015	2,488.32	435	366	2,122	16.50	129
2016	17,826.99	2,228	1,872	15,955	17.50	912
	196,475.37	88,083	74,006	122,470		12,047
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.2 6.13

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 15-L4						
NET SALVAGE PERCENT.. 0						
1998	23,700.00	20,635	23,630	70	1.94	36
2000	20,700.00	17,429	19,959	741	2.37	313
2002	22,872.16	18,694	21,408	1,464	2.74	534
2006	73,113.90	54,835	62,795	10,319	3.75	2,752
2011	161,067.57	79,567	91,118	69,950	7.59	9,216
2012	73,865.31	31,860	36,485	37,380	8.53	4,382
2013	62,726.96	22,958	26,291	36,436	9.51	3,831
2016	2,423.80	404	463	1,961	12.50	157
2017	192,000.00	19,200	21,986	170,014	13.50	12,594
	632,469.70	265,582	304,135	328,334		33,815

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.7 5.35



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 392.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
2003	5,858.64	3,632	4,404	1,455	9.50	153
2012	58,391.33	15,182	18,409	39,983	18.50	2,161
	64,249.97	18,814	22,813	41,437		2,314

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.9 3.60

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
1999	18,877.58	18,406	16,644	2,234	0.50	2,234
2001	1,716.33	1,502	1,358	358	2.50	143
2002	14,591.33	12,038	10,886	3,705	3.50	1,059
2005	8,276.87	5,587	5,052	3,225	6.50	496
2006	75,526.99	47,204	42,686	32,841	7.50	4,379
2007	8,466.61	4,868	4,402	4,065	8.50	478
2008	8,976.47	4,713	4,262	4,714	9.50	496
2009	378.54	180	163	216	10.50	21
2010	61,467.53	26,124	23,623	37,845	11.50	3,291
2011	7,372.47	2,765	2,500	4,872	12.50	390
2012	65,999.81	21,450	19,397	46,603	13.50	3,452
2013	16,093.74	4,426	4,002	12,092	14.50	834
2014	36,417.63	8,194	7,410	29,008	15.50	1,871
2015	56,943.11	9,965	9,011	47,932	16.50	2,905
2016	107,176.04	13,397	12,115	95,061	17.50	5,432
2017	33,501.00	2,513	2,273	31,228	18.50	1,688
2018	45,001.00	1,125	1,017	43,984	19.50	2,256
	566,783.05	184,457	166,801	399,982		31,425

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.7    5.54

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	2,348.43	2,114	2,348			
2006	7,401.23	6,168	7,401			
2007	17,398.19	13,339	17,008	390	3.50	111
2008	62,811.98	43,968	56,062	6,750	4.50	1,500
2009	41,773.44	26,456	33,733	8,040	5.50	1,462
2010	31,269.93	17,720	22,595	8,675	6.50	1,335
2011	16,488.52	8,244	10,512	5,977	7.50	797
2012	17,016.66	7,374	9,402	7,615	8.50	896
2013	5,917.50	2,170	2,767	3,150	9.50	332
2014	36,775.07	11,033	14,068	22,707	10.50	2,163
2015	12,751.71	2,975	3,793	8,959	11.50	779
2016	64,207.29	10,701	13,645	50,562	12.50	4,045
	316,159.95	152,262	193,334	122,826		13,420

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.2 4.24

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 16-L2.5						
NET SALVAGE PERCENT.. 0						
1986	7,525.00	6,481	6,682	843	2.22	380
1992	10,000.00	7,988	8,236	1,764	3.22	548
1993	93,533.45	73,482	75,764	17,769	3.43	5,180
2002	72,784.90	48,083	49,576	23,209	5.43	4,274
2011	345,636.00	148,409	153,018	192,618	9.13	21,097
2015	3,257.24	696	718	2,539	12.58	202
9999	10,000.00-	5,352-	5,518-	4,482-		595-
	522,736.59	279,787	288,476	234,261		31,086

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.5 5.95

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	234,211.01	210,790	234,211			
2006	4,491.50	3,743	4,236	256	2.50	102
2007	1,116.47	856	969	147	3.50	42
2008	28,601.90	20,021	22,658	5,944	4.50	1,321
2009	526,717.63	333,586	377,528	149,190	5.50	27,125
2010	185,786.54	105,280	119,148	66,639	6.50	10,252
2011	4,370.98	2,185	2,473	1,898	7.50	253
2012	3,344.78	1,449	1,640	1,705	8.50	201
2013	263,689.84	96,687	109,424	154,266	9.50	16,239
2014	98,016.16	29,405	33,278	64,738	10.50	6,166
2016	172,002.57	28,668	32,445	139,558	12.50	11,165
	1,522,349.38	832,670	938,010	584,340		72,866
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.0						4.79

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

ACCOUNT 397.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL  
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2004	45,714.26	44,191	35,049	10,665	0.50	10,665
2005	43,580.31	39,222	31,108	12,472	1.50	8,315
2006	20,954.98	17,462	13,850	7,105	2.50	2,842
2007	27,143.48	20,810	16,505	10,638	3.50	3,039
2008	20,048.36	14,034	11,131	8,917	4.50	1,982
2009	6,270.00	3,971	3,150	3,120	5.50	567
2010	4,161.94	2,358	1,870	2,292	6.50	353
2011	14,880.36	7,440	5,901	8,979	7.50	1,197
2012	15,424.61	6,684	5,301	10,124	8.50	1,191
2013	25,242.12	9,256	7,341	17,901	9.50	1,884
2014	2,834,123.45	850,237	674,347	2,159,776	10.50	205,693
2015	4,104.14	958	760	3,344	11.50	291
9999	29,000.00-	9,629-	7,637-	21,363-		2,255-
	3,032,648.01	1,006,994	798,676	2,233,972		235,764

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.5 7.77

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**PART III. EXPERIENCED NET SALVAGE**

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2014 TRANSACTION YEAR				
354.20		17,281.50		17,281.50-
354.30	8,419.83	.04		.04-
354.40	279,496.09	10,304.75		10,304.75-
354.70	142,282.00			
355.00	57,994.23	509.91		509.91-
360.10	12,882.20	1,577.22		1,577.22-
361.10	15,832.47	16,027.16		16,027.16-
363.00	47,729.22	26,515.13		26,515.13-
364.00	197,628.45	815.62		815.62-
371.00	81,694.15	4,325.21		4,325.21-
380.00	611,695.18	21,655.33		21,655.33-
389.10	8,491.79			
390.00	50,807.41			
391.00	14,522.98			
392.00	920.00			
393.00	39,015.82	240.08		240.08-
394.00	36,678.40			
395.00	24,152.00			
396.00	19,639.00			
397.00	16,720.00			
	1,666,601.22	99,251.95		99,251.95-



PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2015 TRANSACTION YEAR				
354.20		1,397.69		1,397.69-
354.30	43,759.87	4,140.75		4,140.75-
354.40	62,674.33	1,026.52		1,026.52-
354.70	2,111.56	480.36		480.36-
355.00		1,665.75		1,665.75-
360.10	19.02	3,255.59		3,255.59-
361.10	41,514.63	65,334.39		65,334.39-
361.20	12,188.26	7,496.94		7,496.94-
363.00	182,967.14	27,377.40		27,377.40-
371.00	19,187.25	4,901.57		4,901.57-
380.00	17,199.80	1,622.52		1,622.52-
390.00	5,416.12			
395.00	55,927.14			
396.00	22,514.95	4,189.54		4,189.54-
397.00	1,573.00			
	467,053.07	122,889.02		122,889.02-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2016 TRANSACTION YEAR				
354.20	.01	41.70		41.70-
354.30	571.02			
354.40	34,034.72	4,580.92		4,580.92-
355.00	57,572.55	4,933.68		4,933.68-
360.10	1,368.17	12,703.29		12,703.29-
361.10	245,871.29	7,077.34	106.90	6,970.44-
361.20		53,436.99	437.10	52,999.89-
363.00	34,819.43	11,693.51		11,693.51-
371.00	54,772.73	11,514.65		11,514.65-
380.00	147,475.80	23,916.89		23,916.89-
381.00	13,300.05	2,109.73		2,109.73-
390.00	3,416.69	276.48		276.48-
393.00	15,451.56	4,963.98	176,515.74	171,551.76
394.00	1,377.94	566.37		566.37-
395.00		830.86-	44,128.93	44,959.79
396.00	6,233.38	911.22	132,386.80	131,475.58
397.00	25,065.55	1,142.09	88,257.87	87,115.78
	641,330.89	139,037.98	441,833.34	302,795.36

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2017 TRANSACTION YEAR				
354.30	26,000.00	4,160.00		4,160.00-
354.70	400.00			
355.00	68,000.00	5,440.00		5,440.00-
361.10	465,682.00	190,930.00		190,930.00-
361.20	1,500.00	7,500.00	60.00	7,440.00-
363.00	21,201.00	6,148.00		6,148.00-
380.00	56,300.00	11,823.00		11,823.00-
390.00	3,200.00			
393.00	46,861.66			
394.00	26,598.02			
397.00	55,000.62			
	770,743.30	226,001.00	60.00	225,941.00-

PENNSYLVANIA-AMERICAN WATER COMPANY  
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

EXPERIENCED RETIREMENTS BY ACCOUNT AND ASSOCIATED  
COST OF REMOVAL, GROSS SALVAGE, AND NET SALVAGE

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2018 TRANSACTION YEAR				
354.30	40,000.00	4,800.00		4,800.00-
354.70	400.00			
355.00	68,000.00	4,760.00		4,760.00-
361.10	65,682.00	26,273.00		26,273.00-
361.20	1,500.00	7,500.00	60.00	7,440.00-
363.00	21,201.00	6,360.00		6,360.00-
380.00	216,000.00	15,120.00		15,120.00-
393.00	1,699.00			
397.00	139,402.93			
	553,884.93	64,813.00	60.00	64,753.00-
TOTAL	4,099,613.41	651,992.95	441,953.34	210,039.61-