

PENNSYLVANIA-AMERICAN WATER COMPANY

**2020 GENERAL BASE RATE CASE
R-2020-3019369 (WATER)
R-2020-3019371 (WASTEWATER)**

**EXHIBITS NO. 11-Y, 11-Z, 11-AA, 11-AB, 11-AC, 11-AD, 11-AE
DEPRECIATION STUDY**

**WASTEWATER CSS OPERATIONS
MCKEESPORT AND KANE
AS OF DECEMBER 31, 2019, 2020, 2021, 2022**

EXHIBIT NO. 11-Y - DEPRECIATION STUDY

WASTEWATER CSS MCKEESPORT OPERATIONS

AS OF DECEMBER 31, 2019

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

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS MCKEESPORT OPERATIONS

2019 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WASTEWATER PLANT

AS OF DECEMBER 31, 2019

Prepared by:



Gannett Fleming

*Excellence Delivered **As Promised***

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

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER CSS MCKEESPORT OPERATIONS

2019 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2019

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2019. 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 "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020".

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

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PART I. RESULTS OF STUDY

**PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS**

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

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, 2019, 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, 2015-2019.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-5. 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 2015 through 2019, on page III-2.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2019

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2019 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2019 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	14,409,708.87				14,409,708.87
354.40 STRUCTURES AND IMPROVEMENTS - TDP	51,333,674.58				51,333,674.58
355.00 POWER GENERATION EQUIPMENT	908,630.54				908,630.54
360.10 COLLECTION SEWERS - FORCE MAINS	1,512,125.53				1,512,125.53
361.10 COLLECTION SEWERS - GRAVITY MAINS	222,703,343.61				222,703,343.61
361.20 MANHOLES	15,237,344.89				15,237,344.89
364.00 FLOW MEASURING DEVICES	558,990.13				558,990.13
371.00 PUMPING EQUIPMENT	7,444,616.76				7,444,616.76
380.00 TREATMENT EQUIPMENT	31,086,630.84				31,086,630.84
390.00 OFFICE FURNITURE AND EQUIPMENT	440,995.50				440,995.50
391.00 TRANSPORTATION EQUIPMENT	1,211,654.70				1,211,654.70
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	211,448.99				211,448.99
394.00 LABORATORY EQUIPMENT	119,685.05				119,685.05
395.00 POWER OPERATED EQUIPMENT	714,356.28				714,356.28
396.00 COMMUNICATION EQUIPMENT	1,087,683.57				1,087,683.57
TOTAL DEPRECIABLE PLANT	348,980,889.84	0.00	0.00	0.00	348,980,889.84
NONDEPRECIABLE PLANT					
353.30 LAND AND LAND RIGHTS - SPP	1,110,000.00				1,110,000.00
TOTAL NONDEPRECIABLE PLANT	1,110,000.00	0.00	0.00	0.00	1,110,000.00
TOTAL UTILITY PLANT	350,090,889.84	0.00	0.00	0.00	350,090,889.84

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2019

	(1) DEPRECIABLE GROUP	(2) SURVIVOR CURVE	(3) ORIGINAL COST AS OF DECEMBER 31, 2019	(4) BOOK RESERVE	(5) FUTURE ACCRUALS	(6) CALCULATED ANNUAL ACCRUAL AMOUNT	(7)=(6)/(3) ANNUAL ACCRUAL RATE	(8) COMPOSITE REMAINING LIFE
DEPRECIABLE PLANT								
354.30	STRUCTURES AND IMPROVEMENTS - SPP	55-S0	14,409,708.87	4,581,213	9,828,495	304,385	2.11	32.3
354.40	STRUCTURES AND IMPROVEMENTS - TDP	55-S0	51,333,674.58	29,609,734	21,723,940	704,784	1.37	30.8
355.00	POWER GENERATION EQUIPMENT	35-S0.5	908,630.54	191,370	717,261	33,517	3.69	21.4
360.10	COLLECTION SEWERS - FORCE MAINS	75-R3	1,512,125.53	126,441	1,385,684	22,882	1.51	60.6
361.10	COLLECTION SEWERS - GRAVITY MAINS	80-R2.5	222,703,343.61	120,046,751	102,656,592	2,677,329	1.20	38.3
361.20	MANHOLES	50-S2.5	15,237,344.89	13,158,892	2,078,453	173,490	1.14	12.0
364.00	FLOW MEASURING DEVICES	15-L2.5	558,990.13	119,789	439,201	56,175	10.05	7.8
371.00	PUMPING EQUIPMENT	30-S0.5	7,444,616.76	1,853,324	5,591,293	303,133	4.07	18.4
380.00	TREATMENT EQUIPMENT	35-S1.5	31,086,630.84	15,622,042	15,464,589	1,049,963	3.38	14.7
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	440,995.50	86,696	354,300	20,471	4.64	17.3
391.00	TRANSPORTATION EQUIPMENT	14-L4	1,211,654.70	537,841	673,813	78,185	6.45	8.6
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	211,448.99	33,924	177,525	9,601	4.54	18.5
394.00	LABORATORY EQUIPMENT	15-SQ	119,685.05	37,352	82,333	10,674	8.92	7.7
395.00	POWER OPERATED EQUIPMENT	22-R2	714,356.28	363,196	351,161	28,919	4.05	12.1
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,087,683.57	437,067	650,617	62,269	5.72	10.4
	TOTAL DEPRECIABLE PLANT		348,980,889.84	186,805,632	162,175,257	5,535,777	1.59	29.3
NONDEPRECIABLE AND ACCOUNTS NOT STUDIED								
353.30	LAND AND LAND RIGHTS - SPP		1,110,000.00					
	TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED		1,110,000.00					
AMORTIZATION OF NET SALVAGE								
	TOTAL UTILITY PLANT		350,090,889.84	186,805,632	162,175,257	201,145		
						5,736,922		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 3. AMORTIZATION OF EXPERIENCED NET SALVAGE

ACCOUNT (1)	2015		2016		2017		2018		2019		NET SALVAGE (12)*	SALVAGE ACCRUAL (13)=(12)/5
	GROSS SALVAGE (2)	COST OF REMOVAL (3)	GROSS SALVAGE (4)	COST OF REMOVAL (5)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	GROSS SALVAGE (8)	COST OF REMOVAL (9)	GROSS SALVAGE (10)	COST OF REMOVAL (11)		
354.40											(2,791)	(558)
360.10								62		2,729	(2,368)	(474)
361.10							(1,753)			2,368	(898,576)	(179,715)
361.20										900,330	(60,343)	(12,069)
371.00										60,343	(23,928)	(4,786)
380.00										23,928	(276)	(55)
389.10							3,678			276	(3,678)	(736)
390.00										9,976	(9,976)	(1,995)
391.00										2,818	(2,818)	(564)
393.00										327	(327)	(65)
394.00										641	(641)	(128)
TOTAL	0	0	0	0	0	0	1,987	0	0	1,003,734	(1,005,721)	(201,145)

* Column (12) equals the summation of Columns (2) through (11).

PART II. DETAILED DEPRECIATION CALCULATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	DEPRECIATED ORIGINAL COST		CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
			AMOUNT (2) - (3) (4)			
1952						0.0
1953						0.0
1955	20,661,280	15,399,372	5,261,908		5,261,908	3.2
1959	68,956,064	51,754,380	17,201,684		22,463,592	13.9
1960	13,352,885	12,537,839	815,046		23,278,638	14.4
1962	11,680,052	8,037,627	3,642,425		26,921,063	16.6
1963	28,918,420	20,129,131	8,789,289		35,710,352	22.0
1968	671,327	543,911	127,416		35,837,768	22.1
1970	60,405	47,724	12,681		35,850,449	22.1
1975	33,044,993	26,731,197	6,313,796		42,164,245	26.0
1976	37,224,937	21,019,695	16,205,242		58,369,487	36.0
1980	312,037	161,481	150,556		58,520,043	36.1
1984	223,677	105,692	117,985		58,638,028	36.2
1989	22,721,607	9,563,587	13,158,020		71,796,048	44.3
1990	115,979	69,700	46,279		71,842,327	44.3
1991	83,578	61,050	22,528		71,864,855	44.3
1995	156,644	93,137	63,507		71,928,362	44.4
1998	3,764	3,764			71,928,362	44.4
1999	12,072,015	3,799,695	8,272,320		80,200,682	49.5
2000	105,072	46,382	58,690		80,259,372	49.5
2001	1,803,860	876,222	927,638		81,187,010	50.1
2002	87,451	45,958	41,493		81,228,503	50.1
2003	107,563	61,463	46,100		81,274,603	50.1
2004	422,913	196,663	226,250		81,500,853	50.3
2005	69,030	29,455	39,575		81,540,428	50.3
2006	60,636	28,595	32,041		81,572,469	50.3
2007	4,719,202	1,040,393	3,678,809		85,251,278	52.6
2008	4,023,484	976,515	3,046,969		88,298,247	54.4
2009	9,708,733	1,699,659	8,009,074		96,307,321	59.4
2010	8,901,292	2,141,913	6,759,379		103,066,700	63.6
2011	3,718,295	596,036	3,122,259		106,188,959	65.5
2012	2,338,273	699,696	1,638,577		107,827,536	66.5
2013	826,260	211,237	615,023		108,442,559	66.9
2014	27,691,375	4,835,281	22,856,094		131,298,653	81.0
2015	18,352,514	2,974,307	15,378,207		146,676,860	90.4
2016	381,199	61,184	320,015		146,996,875	90.6
2017	291,552	46,008	245,544		147,242,419	90.8
2018	621,068	31,691	589,377		147,831,796	91.2
2019	14,491,455	147,991	14,343,464		162,175,260	100.0
SUBTOTAL	348,980,891	186,805,631	162,175,260			
NONDEPRECIABLE	1,110,000		1,110,000			
TOTAL	350,090,891	186,805,631	163,285,260			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	2,307,636.72	1,771,342	2,004,954	302,683	18.02	16,797
1968	671,326.79	480,536	543,911	127,416	20.45	6,231
1970	60,405.27	42,163	47,724	12,681	21.42	592
1990	89,924.53	46,419	52,541	37,384	27.65	1,352
1995	131,932.60	60,452	68,425	63,508	28.97	2,192
2000	105,072.37	40,978	46,382	58,690	30.50	1,924
2004	244,354.55	80,686	91,327	153,028	31.45	4,866
2005	52,725.90	16,514	18,692	34,034	31.80	1,070
2011	7,145.91	1,463	1,656	5,490	33.00	166
2013	142,598.74	23,272	26,341	116,258	33.34	3,487
2014	10,489,746.72	1,476,956	1,671,744	8,818,003	33.56	262,753
2015	27,552.90	3,248	3,676	23,877	33.67	709
2018	79,285.87	3,393	3,840	75,445	33.59	2,246
	14,409,708.87	4,047,422	4,581,213	9,828,495		304,385
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						32.3 2.11

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	10,601,204.15	8,137,484	10,163,756	437,448	18.02	24,276
1975	17,982,761.29	11,843,447	14,792,521	3,190,240	23.07	138,285
2001	236,542.84	88,845	110,968	125,575	30.76	4,082
2008	403,482.34	105,793	132,136	271,346	32.36	8,385
2009	11,500.45	2,802	3,500	8,000	32.60	245
2010	4,714,315.41	1,056,950	1,320,136	3,394,179	32.87	103,261
2011	393,025.03	80,492	100,535	292,490	33.00	8,863
2012	258,899.65	47,767	59,661	199,239	33.15	6,010
2014	16,626,028.87	2,340,945	2,923,851	13,702,178	33.56	408,289
2018	20,374.91	872	1,089	19,286	33.59	574
2019	85,539.64	1,266	1,581	83,958	33.40	2,514
	51,333,674.58	23,706,663	29,609,734	21,723,940		704,784
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						30.8 1.37

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	21,295.06	14,506	12,671	8,624	13.34	646
2002	19,740.16	9,949	8,690	11,050	17.22	642
2004	38,295.54	17,746	15,501	22,795	17.95	1,270
2012	403,177.35	105,552	92,199	310,978	21.15	14,703
2015	426,122.43	71,333	62,309	363,814	22.38	16,256
	908,630.54	219,086	191,370	717,261		33,517
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.4 3.69

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 75-R3						
NET SALVAGE PERCENT.. 0						
1955	4,054.63	3,138	3,406	649	18.83	34
1960	17,379.90	12,719	13,805	3,575	21.80	164
2015	1,459,170.56	100,391	108,960	1,350,211	60.86	22,186
2019	31,520.44	249	270	31,250	62.79	498
	1,512,125.53	116,497	126,441	1,385,684		22,882
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						60.6 1.51

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1955	20,657,225.52	14,922,780	15,395,966	5,261,260	24.79	212,233
1959	58,137,228.13	40,451,883	41,734,570	16,402,658	26.45	620,138
1960	117,305.81	80,261	82,806	34,500	27.46	1,256
1962	11,680,052.44	7,790,595	8,037,627	3,642,425	28.71	126,870
1963	27,097,985.26	17,911,768	18,479,731	8,618,254	28.97	297,489
1976	36,008,390.82	19,422,926	20,038,806	15,969,585	37.15	429,868
1980	312,037.02	156,518	161,481	150,556	39.24	3,837
1984	223,676.69	102,444	105,692	117,985	42.02	2,808
1989	22,165,417.72	8,923,797	9,206,762	12,958,656	45.26	286,316
1999	10,843,120.84	3,067,519	3,164,787	7,678,334	51.96	147,774
2007	4,256,530.57	766,176	790,471	3,466,060	56.94	60,872
2008	2,161,307.90	360,506	371,937	1,789,371	57.46	31,141
2009	9,154,444.79	1,403,376	1,447,875	7,706,570	57.99	132,895
2010	3,556,498.15	496,487	512,230	3,044,268	58.53	52,012
2011	3,040,253.74	382,464	394,592	2,645,662	59.07	44,789
2016	11,645.19	631	651	10,994	61.02	180
2018	181,266.38	4,405	4,545	176,721	60.23	2,934
2019	13,098,956.64	112,651	116,222	12,982,734	57.98	223,917
	222,703,343.61	116,357,187	120,046,751	102,656,592		2,677,329
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						38.3 1.20

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-S2.5						
NET SALVAGE PERCENT.. 0						
1959	10,818,835.91	9,622,273	10,019,810	799,026	7.52	106,253
1963	1,820,434.96	1,583,960	1,649,400	171,035	8.44	20,265
1976	1,216,546.67	941,972	980,889	235,658	12.68	18,585
1989	556,188.94	342,668	356,825	199,364	19.00	10,493
1999	169,442.42	74,334	77,405	92,037	26.23	3,509
2008	221,695.85	56,089	58,407	163,289	33.95	4,810
2011	56,507.69	10,567	11,004	45,504	36.95	1,232
2018	35,749.05	1,187	1,236	34,513	43.75	789
2019	341,943.40	3,761	3,916	338,027	44.75	7,554
	15,237,344.89	12,636,811	13,158,892	2,078,453		173,490
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.0 1.14

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-L2.5						
NET SALVAGE PERCENT.. 0						
1960	34,668.83	34,669	34,669			
2008	91,182.72	63,864	27,187	63,996	4.92	13,007
2010	5,997.31	3,772	1,606	4,391	5.61	783
2011	24,727.41	14,441	6,147	18,580	6.06	3,066
2013	175,978.36	83,273	35,449	140,529	7.24	19,410
2015	40,642.36	13,916	5,924	34,718	8.64	4,018
2016	57,410.23	15,552	6,621	50,789	9.42	5,392
2019	128,382.91	5,135	2,186	126,197	12.02	10,499
	558,990.13	234,622	119,789	439,201		56,175

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.8 10.05

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	62,282.91	45,977	48,379	13,904	10.11	1,375
2002	46,706.88	26,072	27,434	19,273	13.85	1,392
2004	107,296.16	55,215	58,099	49,197	14.62	3,365
2005	8,726.79	4,290	4,514	4,213	15.00	281
2006	49,119.86	23,008	24,210	24,910	15.32	1,626
2007	12,937.95	5,725	6,024	6,914	15.75	439
2008	5,053.80	2,104	2,214	2,840	16.12	176
2009	422,063.99	163,972	172,538	249,526	16.53	15,095
2010	104,733.76	37,704	39,674	65,060	16.89	3,852
2011	128,559.92	42,399	44,614	83,946	17.27	4,861
2012	1,485,149.02	442,277	465,382	1,019,767	17.69	57,647
2013	392,348.71	103,541	108,950	283,399	18.13	15,631
2014	70,772.35	16,193	17,039	53,733	18.54	2,898
2015	3,805,502.30	731,418	769,627	3,035,875	18.92	160,459
2016	245,832.60	37,686	39,655	206,178	19.33	10,666
2017	85,221.90	9,587	10,088	75,134	19.72	3,810
2018	93,577.02	6,494	6,833	86,744	20.10	4,316
2019	318,730.84	7,650	8,050	310,681	20.38	15,244
	7,444,616.76	1,761,312	1,853,324	5,591,293		303,133
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.4 4.07

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-S1.5						
NET SALVAGE PERCENT.. 0						
1960	274,689.51	263,153	237,849	36,841	2.61	14,115
1975	15,039,537.69	13,183,659	11,915,982	3,123,556	6.26	498,971
1990	26,054.86	18,984	17,159	8,896	10.99	809
1999	1,059,451.41	616,813	557,503	501,948	14.71	34,123
2001	1,567,317.58	846,665	765,254	802,064	15.75	50,925
2002	21,003.52	10,880	9,834	11,170	16.28	686
2003	81,981.54	40,581	36,679	45,303	16.83	2,692
2006	11,515.96	4,851	4,385	7,131	18.55	384
2007	294,938.32	116,501	105,299	189,639	19.15	9,903
2008	1,128,495.46	413,932	374,130	754,365	19.85	38,003
2010	10,740.58	3,326	3,006	7,735	21.17	365
2012	7,847.89	1,954	1,766	6,082	22.62	269
2013	49,308.02	10,705	9,676	39,632	23.44	1,691
2014	22,892.34	4,244	3,836	19,056	24.17	788
2015	11,429,578.59	1,744,154	1,576,443	9,853,136	25.00	394,125
2016	22,983.32	2,744	2,480	20,503	25.82	794
2018	5,336.00	274	248	5,088	27.66	184
2019	32,958.25	567	513	32,446	28.57	1,136
	31,086,630.84	17,283,987	15,622,042	15,464,589		1,049,963
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.7 3.38

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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						
1995	12,696.60	12,697	12,697			
1998	3,764.18	3,764	3,764			
2005	7,577.02	5,493	6,249	1,328	5.50	241
2009	32,371.63	16,995	19,335	13,037	9.50	1,372
2010	16,786.48	7,974	9,072	7,714	10.50	735
2013	29,977.26	9,743	11,084	18,893	13.50	1,399
2015	5,309.81	1,195	1,360	3,950	15.50	255
2016	8,708.04	1,524	1,734	6,974	16.50	423
2017	105,131.15	13,141	14,950	90,181	17.50	5,153
2018	4,072.60	305	347	3,726	18.50	201
2019	214,600.73	5,365	6,104	208,497	19.50	10,692
	440,995.50	78,196	86,696	354,300		20,471
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						17.3 4.64

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 14-L4						
NET SALVAGE PERCENT.. 0						
2003	25,581.36	22,665	24,784	797	2.12	376
2004	26,888.14	23,463	25,657	1,231	2.26	545
2007	154,794.96	126,746	138,599	16,196	2.77	5,847
2008	12,265.49	9,606	10,504	1,761	3.18	554
2009	23,189.06	17,093	18,691	4,498	3.75	1,199
2010	8,206.63	5,598	6,122	2,085	4.43	471
2011	22,172.79	13,796	15,086	7,087	5.16	1,373
2013	20,696.46	10,104	11,049	9,647	6.81	1,417
2014	481,934.34	200,099	218,811	263,123	7.75	33,951
2015	69,362.46	23,625	25,834	43,528	8.71	4,997
2016	34,619.20	9,184	10,043	24,576	9.69	2,536
2017	101,198.46	19,177	20,970	80,228	10.69	7,505
2018	25,671.24	2,919	3,192	22,479	11.69	1,923
2019	205,074.11	7,772	8,499	196,575	12.69	15,491
	1,211,654.70	491,847	537,841	673,813		78,185

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.6 6.45

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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						
1975	22,693.85	22,694	22,694			
2015	7,450.89	1,676	1,327	6,124	15.50	395
2018	159,464.53	11,960	9,470	149,995	18.50	8,108
2019	21,839.72	546	433	21,407	19.50	1,098
	211,448.99	36,876	33,924	177,525		9,601
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.5 4.54

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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						
1995	12,015.30	12,015	12,015			
2010	61,264.39	38,801	21,236	40,028	5.50	7,278
2015	18,226.62	5,468	2,993	15,234	10.50	1,451
2018	16,270.55	1,627	891	15,380	13.50	1,139
2019	11,908.19	397	217	11,691	14.50	806
	119,685.05	58,308	37,352	82,333		10,674
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						7.7 8.92

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 22-R2						
NET SALVAGE PERCENT.. 0						
2009	65,163.00	31,474	37,720	27,443	11.24	2,442
2010	412,276.19	183,710	220,169	192,107	11.82	16,253
2011	45,902.54	18,692	22,402	23,501	12.38	1,898
2012	183,198.71	67,326	80,688	102,511	12.91	7,940
2015	7,815.84	1,850	2,217	5,599	14.51	386
	714,356.28	303,052	363,196	351,161		28,919
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.1 4.05

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	6,078.99	6,079	6,079			
2010	10,472.81	6,633	8,662	1,811	5.50	329
2013	15,352.54	6,653	8,688	6,665	8.50	784
2015	1,055,779.23	316,734	413,638	642,141	10.50	61,156
	1,087,683.57	336,099	437,067	650,617		62,269
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.4 5.72

PART III. EXPERIENCED NET SALVAGE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

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		62.37		62.37-
355.00	3,187.39			
361.10		1,753.32-		1,753.32
389.10		3,678.20		3,678.20-
	3,187.39	1,987.25		1,987.25-
2019 TRANSACTION YEAR				
354.30	66,016.96			
354.40	60,486.88	2,728.82		2,728.82-
360.10	3,403.50	2,367.76		2,367.76-
361.10		900,329.51		900,329.51-
361.20		60,342.93		60,342.93-
371.00	429.89	23,928.05		23,928.05-
380.00	291,843.01	275.53		275.53-
390.00	4,008.24	9,975.61		9,975.61-
391.00	8,792.82	2,818.43		2,818.43-
393.00		326.90		326.90-
394.00		640.50		640.50-
395.00	37,549.11			
	472,530.41	1,003,734.04		1,003,734.04-
TOTAL	475,717.80	1,005,721.29		1,005,721.29-

EXHIBIT NO. 11-Z - DEPRECIATION STUDY

WASTEWATER CSS MCKEESPORT OPERATIONS

AS OF DECEMBER 31, 2020

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

PENNSYLVANIA-AMERICAN WATER COMPANY
MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS MCKEESPORT OPERATIONS

2020 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2020

Prepared by:



*Excellence Delivered **As Promised***

PENNSYLVANIA-AMERICAN WATER COMPANY
Mechanicsburg, Pennsylvania

WASTEWATER CSS MCKEESPORT OPERATIONS

2020 DEPRECIATION STUDY
CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2020



Excellence Delivered **As Promised**

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention Ashley E. Everette
Director, Rates & Regulatory

Ladies and 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, 2020, are presented in the attached report. The results of our study as of December 31, 2019, are presented in our report, "2019 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2019." 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, 2020.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

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PART I. INTRODUCTION

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

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, 2020. 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, 2020.

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 2016-2020.

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, 2020. 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 Pennsylvania-American Water Company Wastewater Operations; (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 Iowa 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.

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

Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."¹ 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,"² "Engineering Valuation and Depreciation,"³ and "Depreciation Systems."⁴

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.

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

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

³Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

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

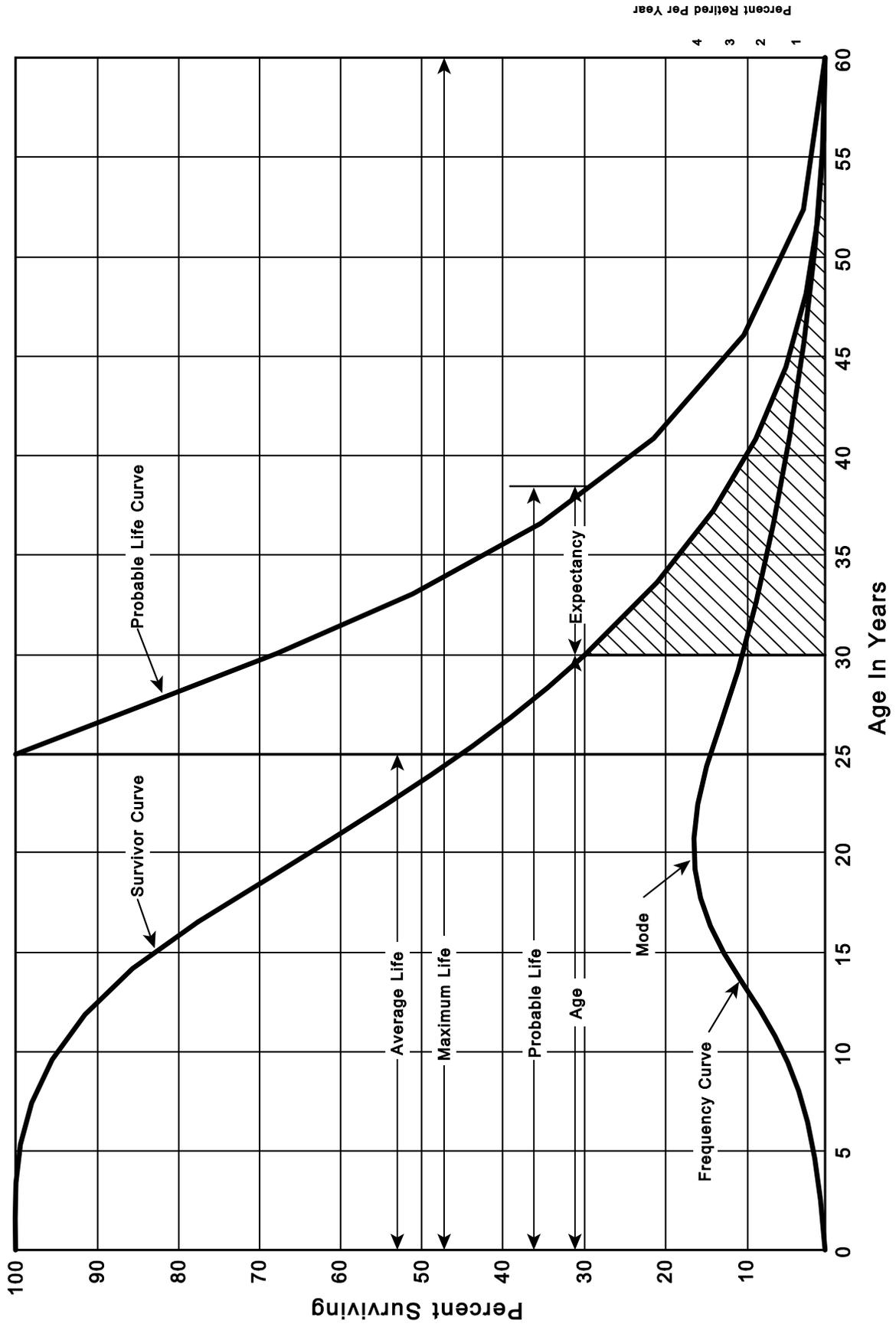


Figure 1. A Typical Survivor Curve and Derived Curves

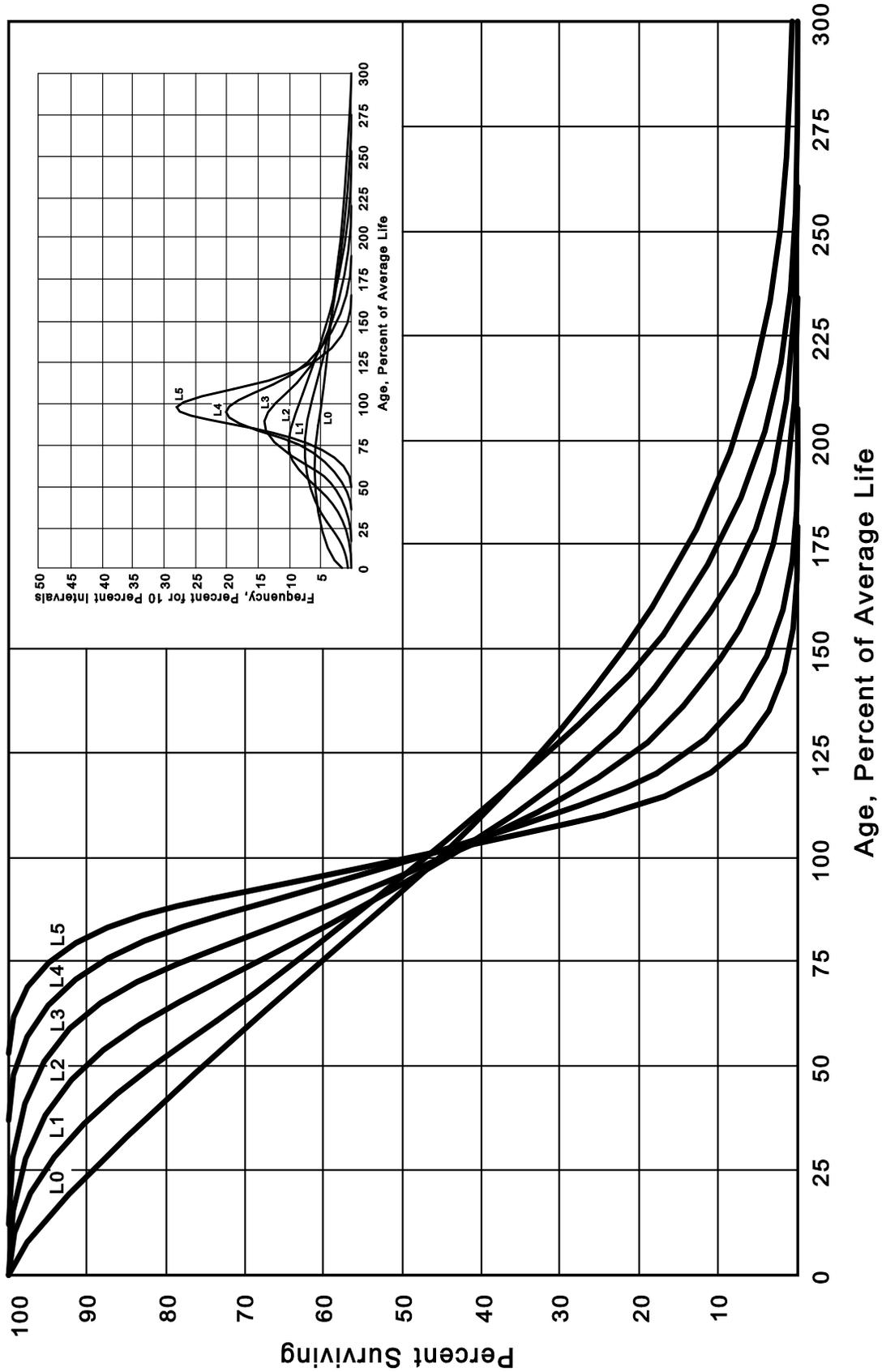


Figure 2. Left Modal or "L" lowa Type Survivor Curves

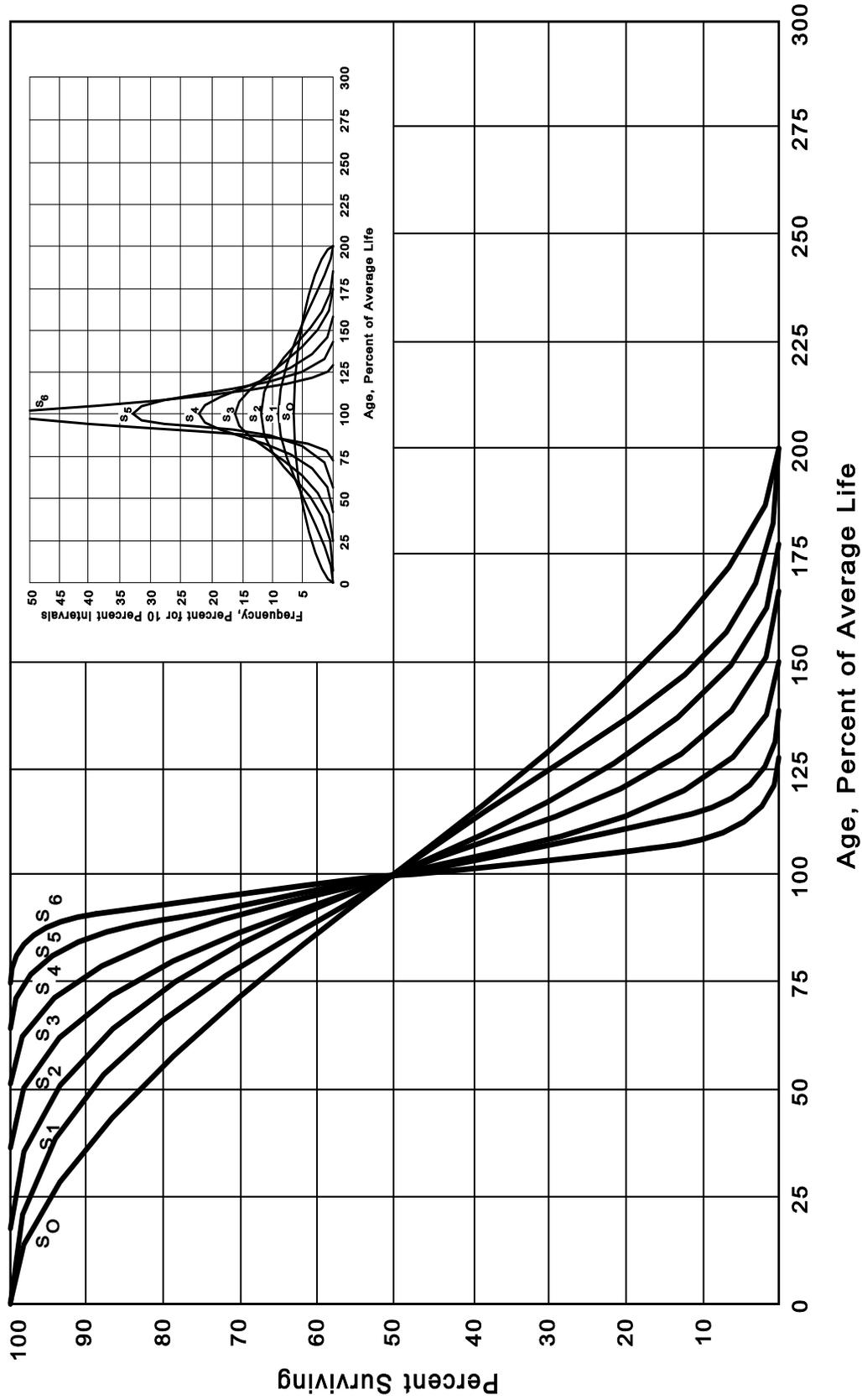


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves

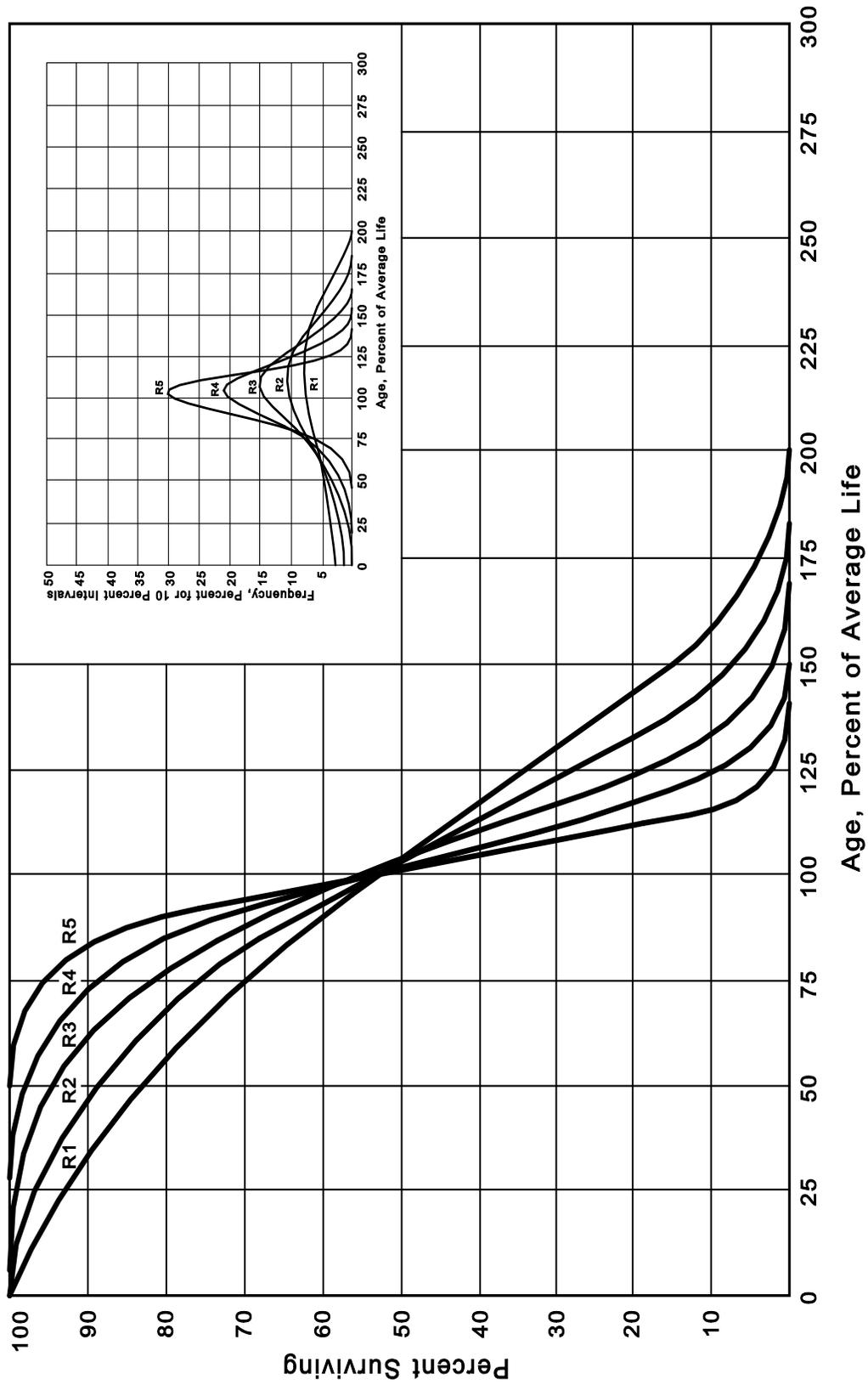


Figure 4. Right Modal or "R" IOWA Type Survivor Curves

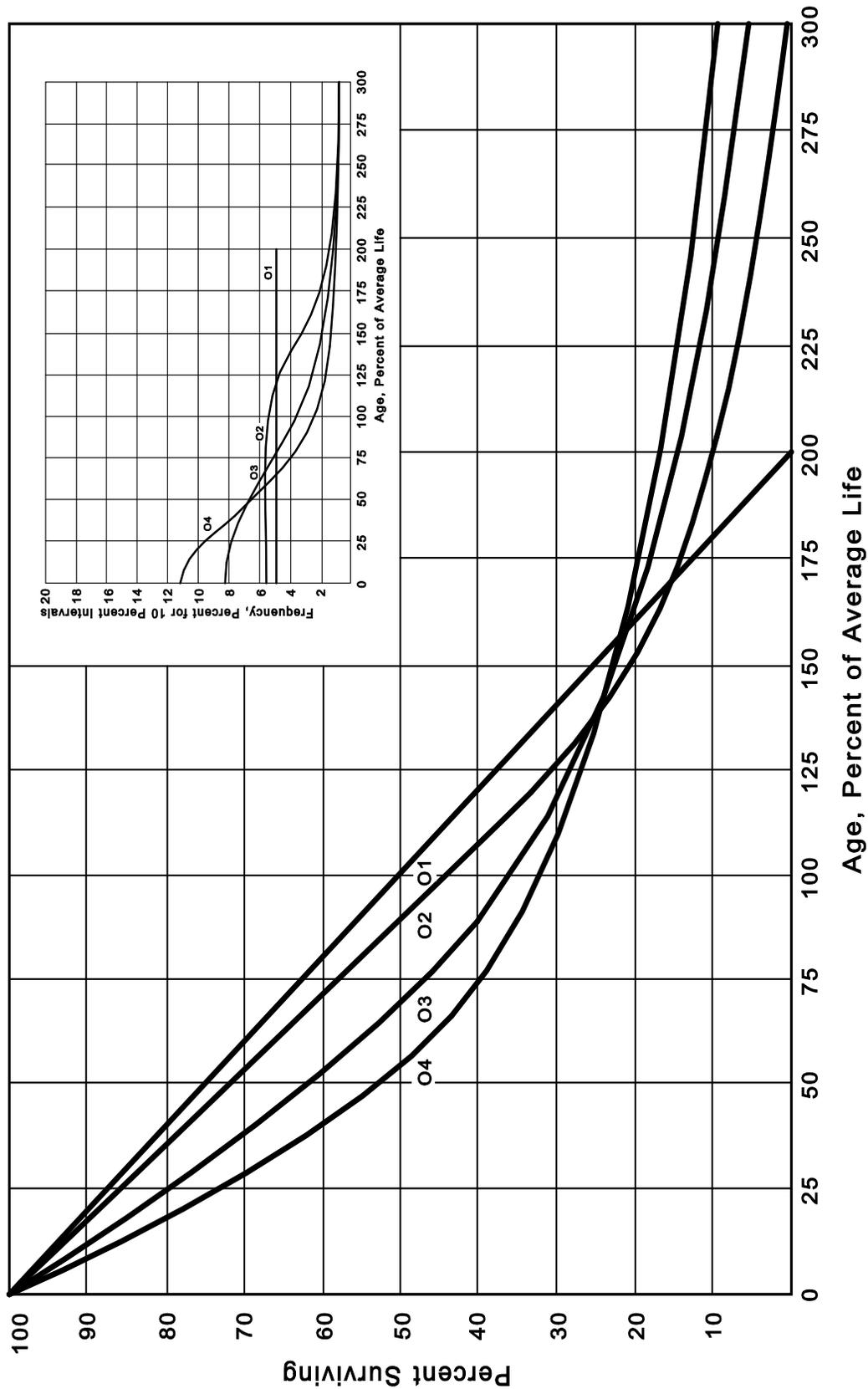


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

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 2010-2019 during which there were placements (or installations) during the years 2005-2019. 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 2005 were retired in 2010. 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 2010 retirements of 2005 installations and ending with the 2019 retirements of the 2014 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 2010-2019
SUMMARIZED BY AGE INTERVAL

Year Placed (1)	Retirements, Thousands of Dollars										Total During		Age Interval (13)
	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	2017 (9)	2018 (10)	2019 (11)	Age Interval (12)	Age Interval (13)	
2005	10	11	12	13	14	16	23	24	25	26	26	13½-14½	
2006	11	12	13	15	16	18	20	21	22	19	44	12½-13½	
2007	11	12	13	14	16	17	19	21	22	18	64	11½-12½	
2008	8	9	10	11	11	13	14	15	16	17	83	10½-11½	
2009	9	10	11	12	13	14	16	17	19	20	93	9½-10½	
2010	4	9	10	11	12	13	14	15	16	20	105	8½-9½	
2011		5	11	12	13	14	15	16	18	20	113	7½-8½	
2012			6	12	13	15	16	17	19	19	124	6½-7½	
2013				6	13	15	16	17	19	19	131	5½-6½	
2014					13	14	16	17	19	20	143	4½-5½	
2015					7	8	18	20	22	23	146	3½-4½	
2016						9	9	20	22	25	150	2½-3½	
2017								11	23	25	151	1½-2½	
2018									11	24	153	½-1½	
2019										13	80	0-½	
Total	53	68	86	106	128	157	196	231	273	308	1,606		

Experience Band 2010-2019

Placement Band 2005-2019

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2010-2019
SUMMARIZED BY AGE INTERVAL

Year Placed	During Year										Total During Age Interval (12)	Age Interval (13)	
	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	2017 (9)	2018 (10)	2019 (11)			
2005	-	-	-	-	-	-	60 ^a	-	-	-	-	-	13½-14½
2006	-	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2007	-	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2008	-	-	-	-	-	-	-	(5) ^b	-	-	60	-	10½-11½
2009	-	-	-	-	-	-	-	6 ^a	-	-	-	-	9½-10½
2010	-	-	-	-	-	-	-	-	-	-	(5)	-	8½-9½
2011	-	-	-	-	-	-	-	-	-	-	6	-	7½-8½
2012	-	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2013	-	-	-	-	-	-	-	(12) ^b	-	-	-	-	5½-6½
2014	-	-	-	-	-	-	-	-	22 ^a	-	-	-	4½-5½
2015	-	-	-	-	-	-	-	(19) ^b	-	-	10	-	3½-4½
2016	-	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2017	-	-	-	-	-	-	-	-	-	(102) ^c	(121)	-	1½-2½
2018	-	-	-	-	-	-	-	-	-	-	-	-	½-1½
2019	-	-	-	-	-	-	-	-	-	-	-	-	0-½
Total	-	-	-	-	-	-	60	(30)	22	(102)	(50)	-	

^a Transfer Affecting Exposures at Beginning of Year

^b Transfer Affecting Exposures at End of Year

^c 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 2010 through 2019 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 2015 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 2010-2019
 SUMMARIZED BY AGE INTERVAL

Year Placed	Exposures, Thousands of Dollars										Total at Beginning of Age Interval	Age Interval	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)			(11)
2005	255	279	245	234	222	209	195	239	216	192	167	167	13½-14½
2006	279	268	268	256	243	228	212	194	174	153	131	323	12½-13½
2007	307	296	296	284	271	257	241	224	205	184	162	531	11½-12½
2008	338	330	330	321	311	300	289	276	262	242	226	823	10½-11½
2009	376	367	367	357	346	334	321	307	297	280	261	1,097	9½-10½
2010	420 ^a	416	416	407	397	386	374	361	347	332	316	1,503	8½-9½
2011		460 ^a	460 ^a	455	444	432	419	405	390	374	356	1,952	7½-8½
2012				510 ^a	504	492	479	464	448	431	412	2,463	6½-7½
2013					580 ^a	574	561	546	530	501	482	3,057	5½-6½
2014						660 ^a	653	639	623	628	609	3,789	4½-5½
2015							750 ^a	742	724	685	663	4,332	3½-4½
2016								850 ^a	841	821	799	4,955	2½-3½
2017									960 ^a	949	926	5,719	1½-2½
2018										1,080 ^a	1,069	6,579	½-1½
2019											1,220 ^a	7,490	0-½
Total	1,975	2,382	2,382	2,824	3,318	3,872	4,494	5,247	6,017	6,852	7,799	44,780	

^aAdditions during the year

For the entire experience band 2010-2019, 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 2010-2019

Placement Band 2005-2019

(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

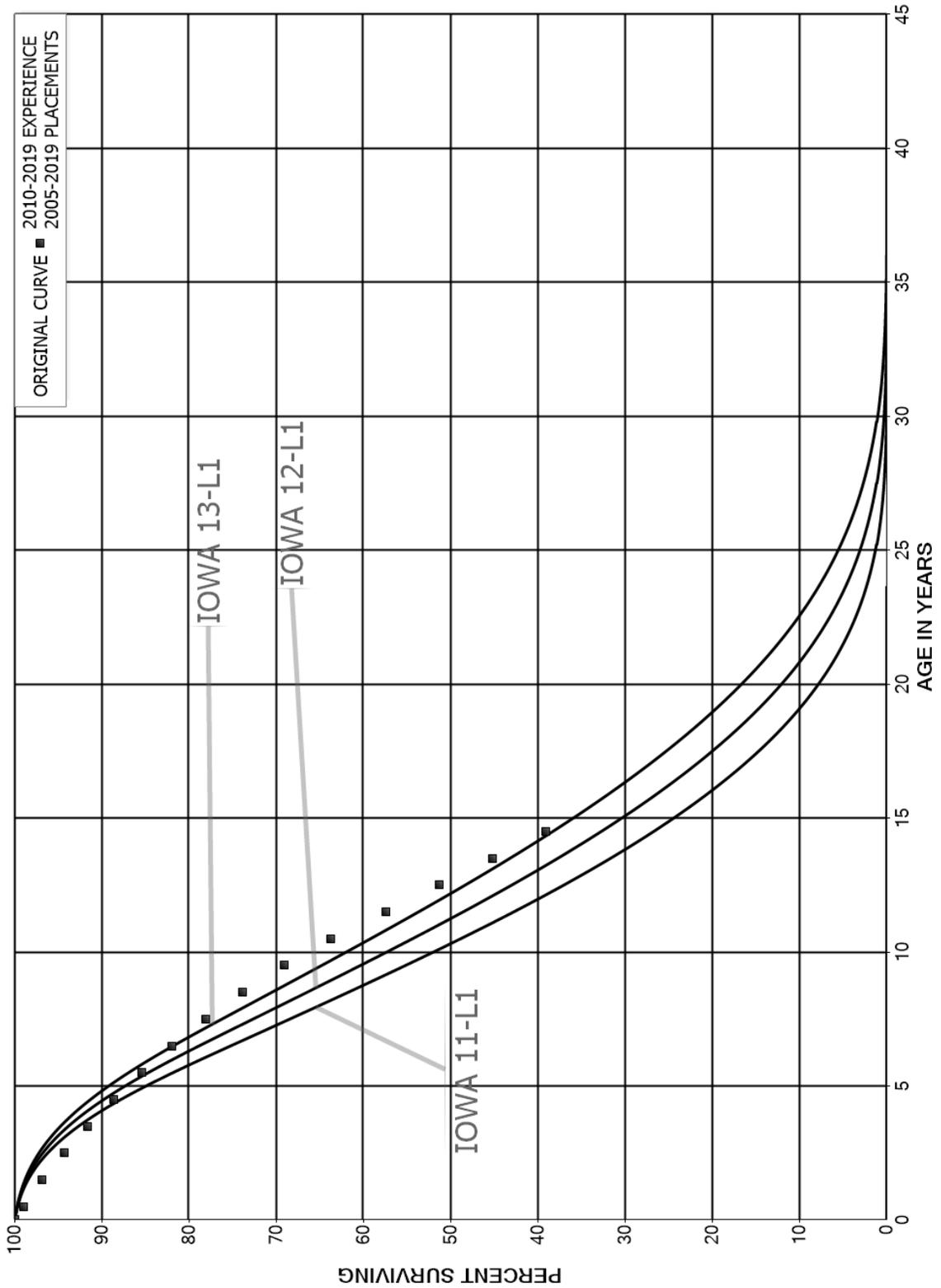


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

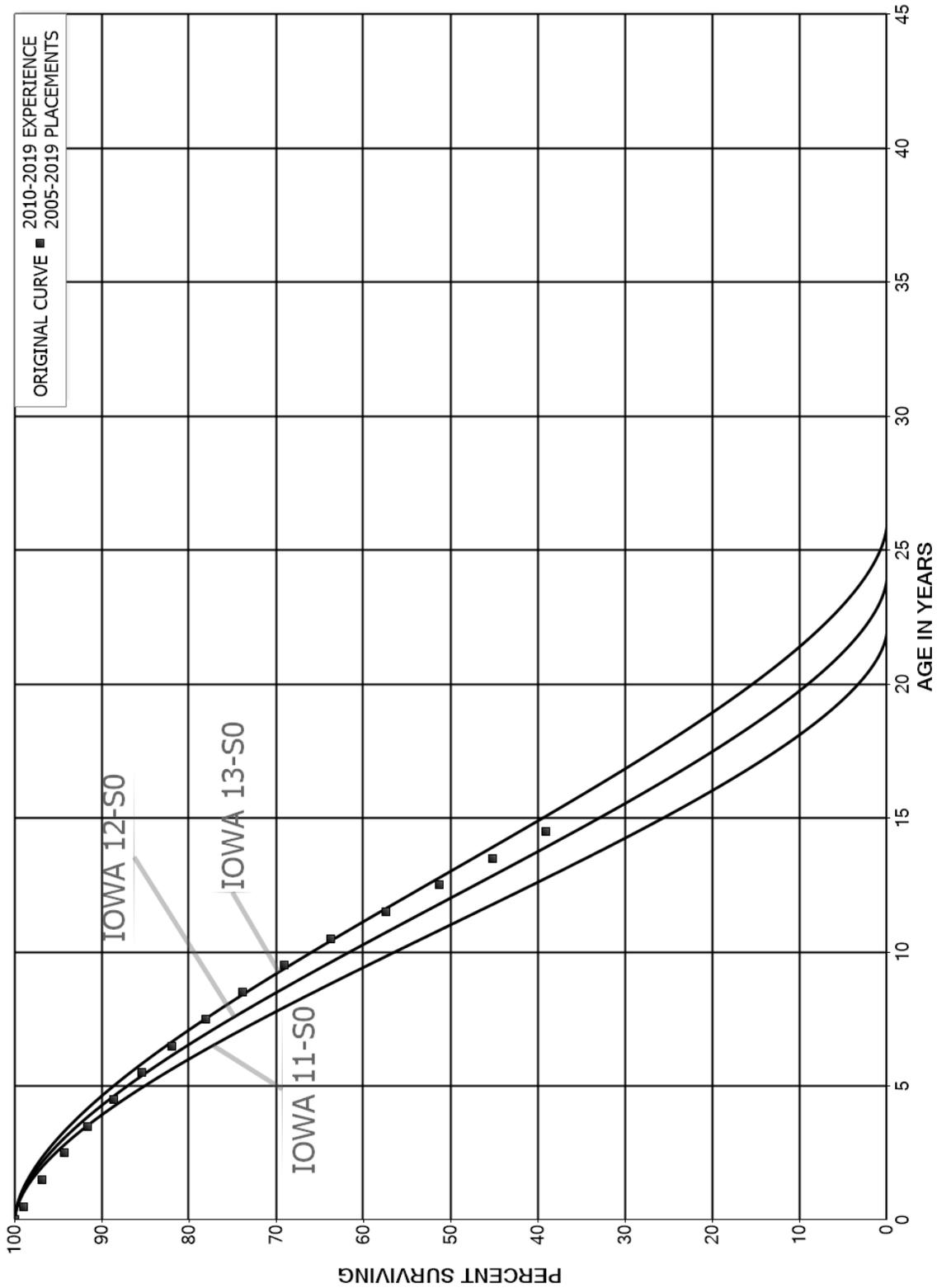


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

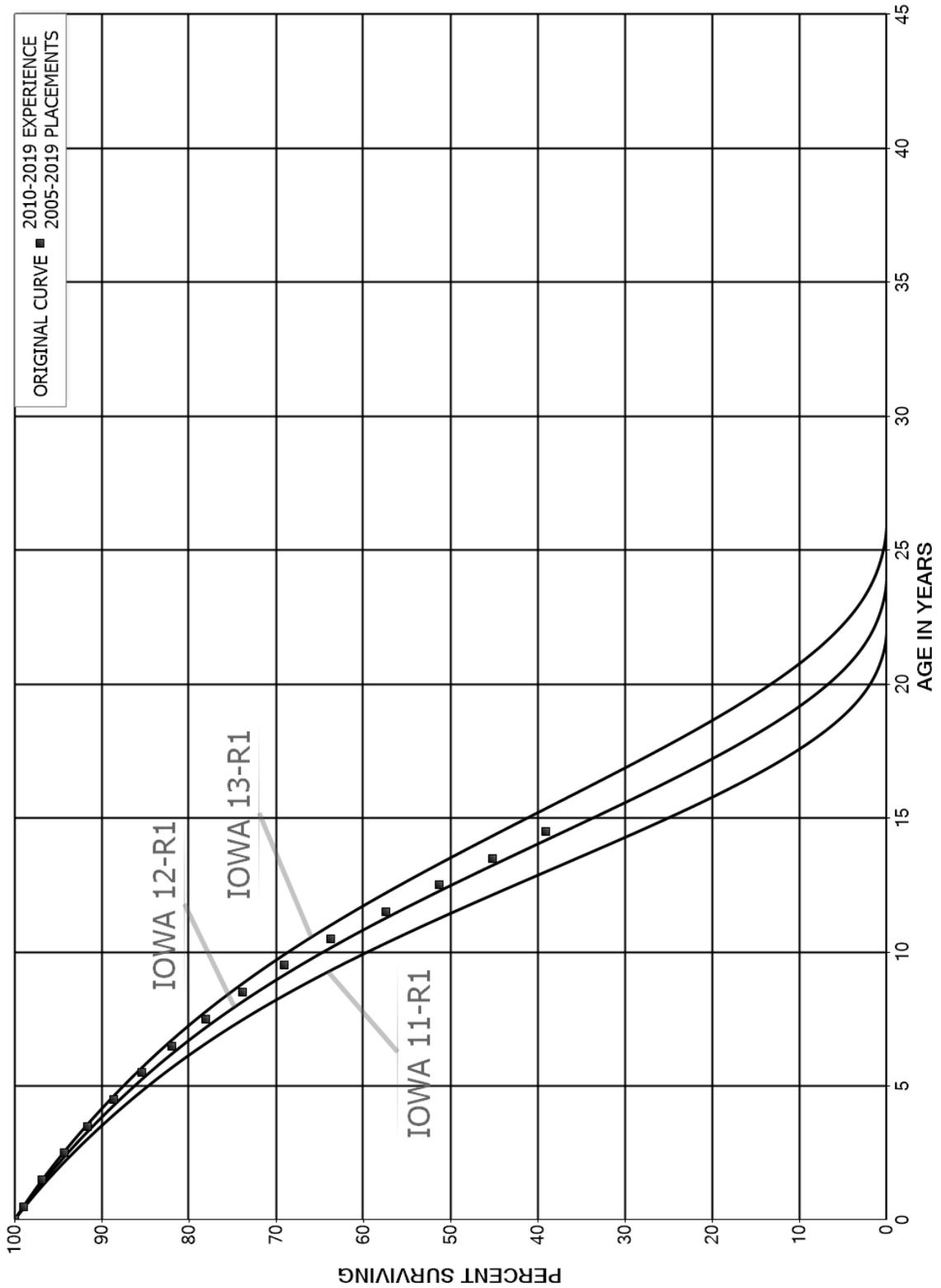
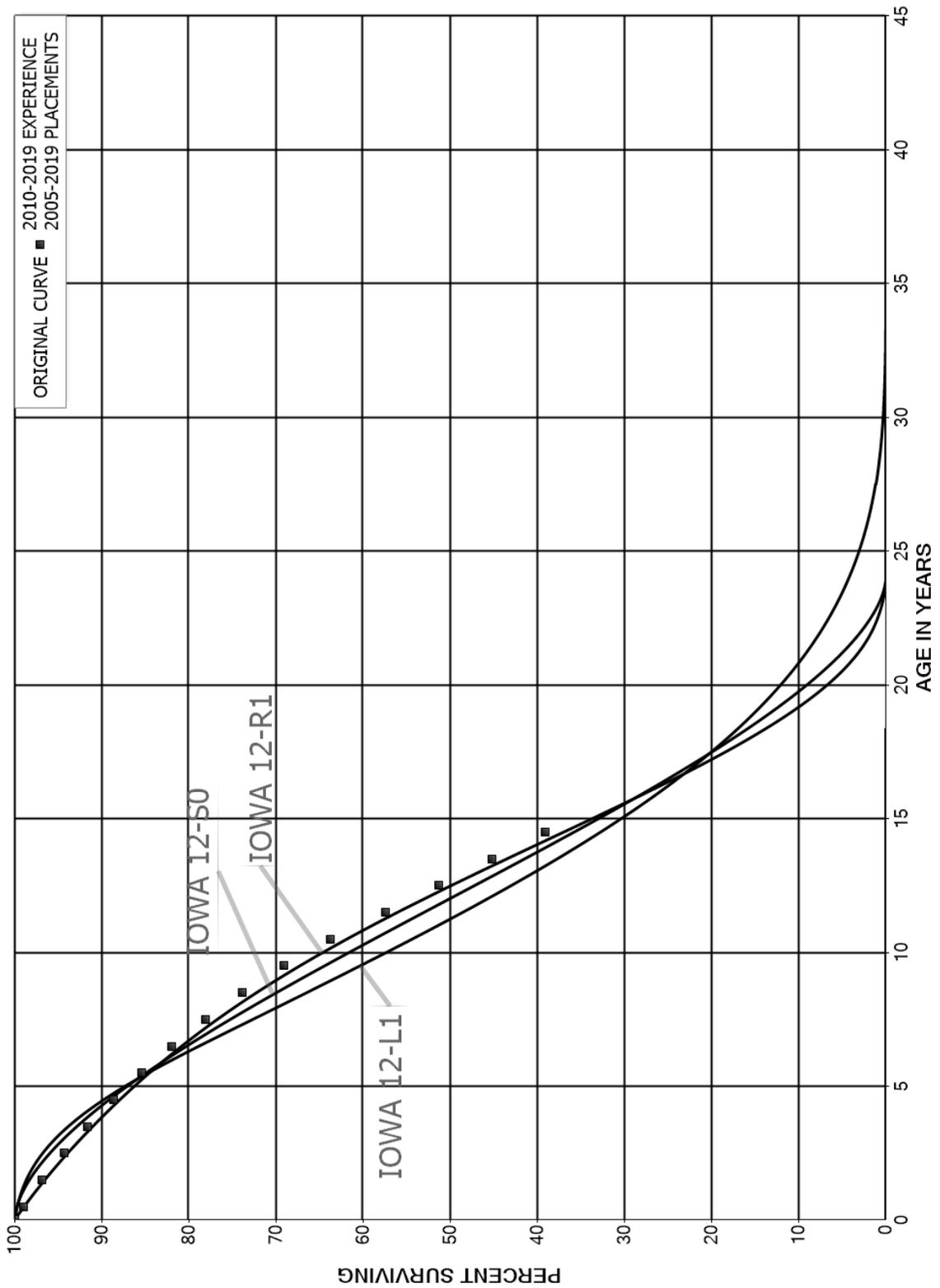


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



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 have been conducted for the system. 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 trip.

January 28, 2020

McKeesport Wastewater Treatment Plant
West Shore Pump Station
28th Street Pump Station
Long Run Pump Station
Dravosburg Wastewater Treatment Plant
Duquesne Wastewater 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 other Pennsylvania-American wastewater systems. 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.

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

**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, 2019, is the result of a bringforward of the book reserves established by the Commission for the McKeesport wastewater operation as of the acquisition date. The projected book reserve as of December 31, 2020, is a bringforward of the December 31, 2019 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, 2020, 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, 2020, are set forth in the Results of Study section of the report.

Equal Life Group Procedure

In the equal life group procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the composite remaining life for the surviving original cost of that vintage. The composite remaining life is derived by compositing the individual equal life group remaining lives in accordance with the following equation:

$$\text{Composite Remaining Life} = \frac{\sum \left(\frac{\text{Book Cost}}{\text{Life}} \times \text{Remaining Life} \right)}{\sum \frac{\text{Book Cost}}{\text{Life}}}.$$

The book costs and lives of the several equal life groups which are summed in the foregoing equation are defined by the estimated survivor curve.

Inasmuch as book cost divided by life equals the whole life annual accrual, the foregoing equation reduces to the following form:

$$\text{Composite Remaining Life} = \frac{\sum \text{Whole Life Future Accruals}}{\sum \text{Whole Life Annual Accruals}}$$

or

$$\text{Composite Remaining Life} = \frac{\sum \text{Book Cost} - \text{Calc. Reserve}}{\sum \text{Whole Life Annual Accrual}}$$

The annual accrual rate for each account is equal to the sum of the remaining life annual accruals for all vintages divided by the account's total original cost. The account's "composite remaining life" is calculated by dividing the sum of the future book accruals for all vintages by the sum of the remaining life annual accruals for all vintages.

The calculated accrued depreciation in the equal life group procedure also represents that portion of depreciable cost which will not be allocated to expense through future accruals. However, the calculation is based at the equal life group level rather than the vintage group level, and does not require the use of averages. The equal life group accrued depreciation ratio is calculated as follows:

$$\text{Ratio} = 1 - \left(\frac{\text{Remaining Life}}{\text{Service Life}} \right)$$

Inasmuch as service life minus remaining life equals age, when averages are not employed, the foregoing equation reduces to:

$$\text{Ratio} = \left(\frac{\text{Age}}{\text{Service Life}} \right)$$

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, 393, 394 and 396; 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
393	Tools, Shop and Garage Equipment	20
394	Laboratory Equipment	15
396	Communication 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, 2016 through December 31, 2019, and estimated for the period January 1, 2020 through December 31, 2020. 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.

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, 2020 of the book reserve as of December 31, 2019. Table 4 sets forth the calculation of estimated depreciation accruals for the twelve months ended December 31, 2020. Table 5 presents the amortization of experienced and estimated net salvage, by account, based on the five-year period, 2016-2020. 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 2016-2020 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 2016-2020, 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 CSS MCKEESPORT OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2020

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2020 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2020 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	14,936,960.64				14,936,960.64
354.40 STRUCTURES AND IMPROVEMENTS - TDP	53,211,975.60				53,211,975.60
355.00 POWER GENERATION EQUIPMENT	1,009,702.49				1,009,702.49
360.10 COLLECTION SEWERS - FORCE MAINS	1,813,298.11				1,813,298.11
361.10 COLLECTION SEWERS - GRAVITY MAINS	234,726,686.92				234,726,686.92
361.20 MANHOLES	15,366,203.81				15,366,203.81
364.00 FLOW MEASURING DEVICES	558,990.13				558,990.13
371.00 PUMPING EQUIPMENT	8,297,806.43				8,297,806.43
380.00 TREATMENT EQUIPMENT	31,447,713.02				31,447,713.02
382.00 OUTFALL SEWER LINES	45,000.00				45,000.00
390.00 OFFICE FURNITURE AND EQUIPMENT	471,514.72				471,514.72
391.00 TRANSPORTATION EQUIPMENT	1,211,654.70				1,211,654.70
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	353,185.14				353,185.14
394.00 LABORATORY EQUIPMENT	107,669.75				107,669.75
395.00 POWER OPERATED EQUIPMENT	714,356.28				714,356.28
396.00 COMMUNICATION EQUIPMENT	1,105,094.58				1,105,094.58
TOTAL DEPRECIABLE PLANT	365,377,812.32	0.00	0.00	0.00	365,377,812.32
NONDEPRECIABLE PLANT					
353.30 LAND AND LAND RIGHTS - SPP	1,110,000.00				1,110,000.00
TOTAL NONDEPRECIABLE PLANT	1,110,000.00	0.00	0.00	0.00	1,110,000.00
TOTAL UTILITY PLANT	366,487,812.32	0.00	0.00	0.00	366,487,812.32

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2020

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2020 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL ACCRUAL AMOUNT (6)	CALCULATED ANNUAL ACCRUAL RATE (7)=(6)/(3)	COMPOSITE REMAINING LIFE (8)
DEPRECIABLE PLANT							
354.30	STRUCTURES AND IMPROVEMENTS - SPP	14,936,960.64	4,831,215	10,105,746	314,548	2.11	32.1
354.40	STRUCTURES AND IMPROVEMENTS - TDP	53,211,975.60	30,103,472	23,108,504	752,592	1.41	30.7
355.00	POWER GENERATION EQUIPMENT	1,009,702.49	215,336	794,366	37,188	3.68	21.4
360.10	COLLECTION SEWERS - FORCE MAINS	1,813,298.11	94,141	1,719,157	28,276	1.56	60.8
361.10	COLLECTION SEWERS - GRAVITY MAINS	234,726,686.92	122,467,109	112,259,578	2,847,706	1.21	39.4
361.20	MANHOLES	15,366,203.81	13,336,260	2,029,944	163,949	1.07	12.4
364.00	FLOW MEASURING DEVICES	558,990.13	175,968	383,022	51,979	9.30	7.4
371.00	PUMPING EQUIPMENT	8,297,806.43	2,004,853	6,292,954	342,844	4.13	18.4
380.00	TREATMENT EQUIPMENT	31,447,713.02	16,633,755	14,813,958	991,325	3.15	14.9
382.00	OUTFALL SEWER LINES	45,000.00	450	44,550	1,064	2.36	41.9
390.00	OFFICE FURNITURE AND EQUIPMENT	471,514.72	93,400	378,115	22,734	4.82	16.6
391.00	TRANSPORTATION EQUIPMENT	1,211,654.70	616,557	595,097	76,403	6.31	7.8
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	353,185.14	24,112	329,073	17,866	5.06	18.4
394.00	LABORATORY EQUIPMENT	107,689.75	35,605	72,065	10,698	9.94	6.7
395.00	POWER OPERATED EQUIPMENT	714,356.28	392,127	322,230	27,827	3.90	11.6
396.00	COMMUNICATION EQUIPMENT	1,105,094.58	493,701	611,394	63,881	5.78	9.6
TOTAL DEPRECIABLE PLANT		365,377,812.32	191,518,060	173,859,753	5,750,880	1.57	30.2
NONDEPRECIABLE AND ACCOUNTS NOT STUDIED							
353.30	LAND AND LAND RIGHTS - SPP	1,110,000.00					
TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED		1,110,000.00					
AMORTIZATION OF NET SALVAGE							
TOTAL UTILITY PLANT		366,487,812.32	191,518,060	173,859,753	223,467		
TOTAL UTILITY PLANT					5,974,347		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2020, OF BOOK RESERVE AS OF DECEMBER 31, 2019

ACCOUNT (1)	BOOK RESERVE BALANCE AS OF 12/31/2019 (2)	+	PROJECTED DEPRECIATION ACCURALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	+	TRANSFERS (8)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2020 (9)
354.30	4,581,213		309,607		59,606										4,831,215
354.40	29,609,734		716,696		212,342		10,617								30,103,472
355.00	191,370		35,393		11,426										215,336
360.10	126,441		25,581		34,047		23,833								94,141
361.10	120,046,751		2,924,295		503,937										122,467,109
361.20	13,158,892		186,509		9,141										13,336,260
364.00	119,789		56,179												175,968
371.00	1,853,324		325,144		96,453		77,162								2,004,853
380.00	15,622,042		1,056,885		45,908								736		16,633,755
382.00	0		450												450
389.10	0		736												0
390.00	86,696		23,165		16,461										93,400
391.00	537,841		78,716		0										616,557
393.00	33,924		12,882		22,694										24,112
394.00	37,352		10,268		12,015										35,605
395.00	363,196		28,931		0										392,127
396.00	437,067		62,713		6,079										493,701
TOTAL	186,805,632	+	5,854,150	-	1,030,109	-	111,613	+	0	+	0	+	0	=	191,518,060

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2019 (2)	NET ORIGINAL COST AS OF 12/31/2020 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)=((2)+(3))/2*(4)	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCUALS (7)=(5)+(6)
354.30	14,409,708.87	14,936,960.64	2.11	309,607		309,607
354.40	51,333,674.58	53,211,975.60	1.37	716,138	558	716,696
355.00	908,630.54	1,009,702.49	3.69	35,393		35,393
360.10	1,512,125.53	1,813,298.11	1.51	25,107	474	25,581
361.10	222,703,343.61	234,726,686.92	1.20	2,744,580	179,715	2,924,295
361.20	15,237,344.89	15,366,203.81	1.14	174,440	12,069	186,509
364.00	558,990.13	558,990.13	10.05	56,179		56,179
371.00	7,444,616.76	8,297,806.43	4.07	320,358	4,786	325,144
380.00	31,086,630.84	31,447,713.02	3.38	1,056,830	55	1,056,885
382.00	0.00	45,000.00	2.00	450		450
389.10	0.00	0.00	0.00	0	736	736
390.00	440,995.50	471,514.72	4.64	21,170	1,995	23,165
391.00	1,211,654.70	1,211,654.70	6.45	78,152	564	78,716
393.00	211,448.99	353,185.14	4.54	12,817	65	12,882
394.00	119,685.05	107,669.75	8.92	10,140	128	10,268
395.00	714,356.28	714,356.28	4.05	28,931		28,931
396.00	1,087,683.57	1,105,094.58	5.72	62,713		62,713
TOTAL	348,980,889.84	365,377,812.32		5,653,005	201,145	5,854,150

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

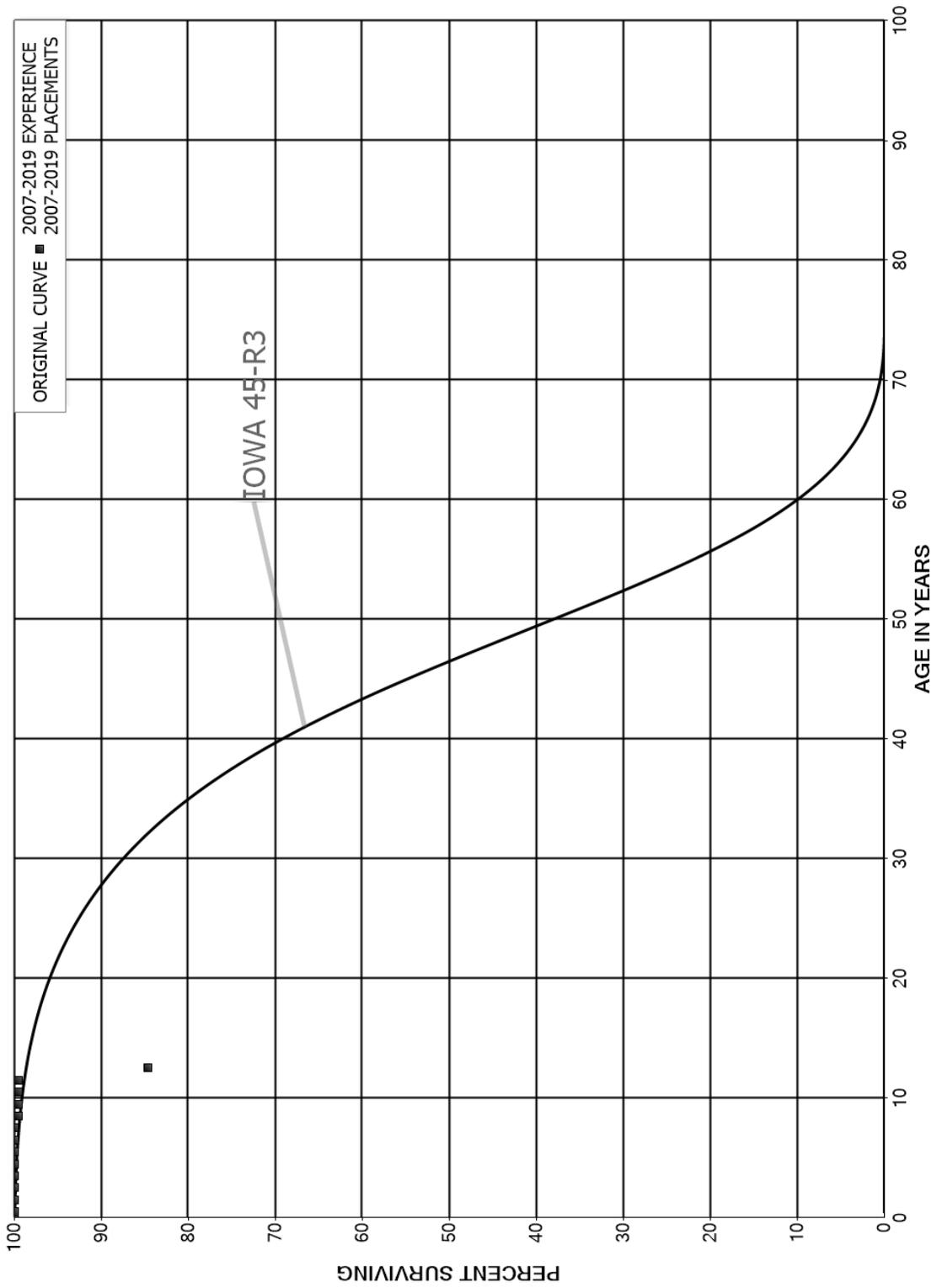
TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2016		2017		2018		2019		PROJECTED 2020		NET SALVAGE (12)*	SALVAGE ACCRUAL (13)=(12)/5
	GROSS SALVAGE (2)	COST OF REMOVAL (3)	GROSS SALVAGE (4)	COST OF REMOVAL (5)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	GROSS SALVAGE (8)	COST OF REMOVAL (9)	GROSS SALVAGE (10)	COST OF REMOVAL (11)		
354.40	-	(3)	-	(5)	-	62	-	2,729	(10)	10,617	(13,408)	(2,682)
360.10	-	(3)	-	(5)	-	2,368	-	2,368	(10)	23,833	(26,201)	(5,240)
361.10	-	(3)	-	(5)	-	(1,753)	-	900,330	(10)	-	(898,576)	(179,715)
361.20	-	(3)	-	(5)	-	60,343	-	60,343	(10)	77,162	(60,343)	(12,069)
371.00	-	(3)	-	(5)	-	23,928	-	23,928	(10)	-	(101,090)	(20,218)
389.10	-	(3)	-	(5)	-	276	-	276	(10)	-	(276)	(55)
390.00	-	(3)	-	(5)	-	3,678	-	9,976	(10)	-	(3,678)	(736)
391.00	-	(3)	-	(5)	-	2,818	-	2,818	(10)	-	(9,976)	(1,995)
393.00	-	(3)	-	(5)	-	327	-	327	(10)	-	(2,818)	(564)
394.00	-	(3)	-	(5)	-	641	-	641	(10)	-	(327)	(65)
TOTAL	0	0	0	0	1,987	1,003,734	0	111,613	0	111,613	(1,117,334)	(223,467)

* Column (12) equals the summation of Columns (2) through (11).

PART VI. SERVICE LIFE STATISTICS

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION
 ORIGINAL AND SMOOTH SURVIVOR CURVES



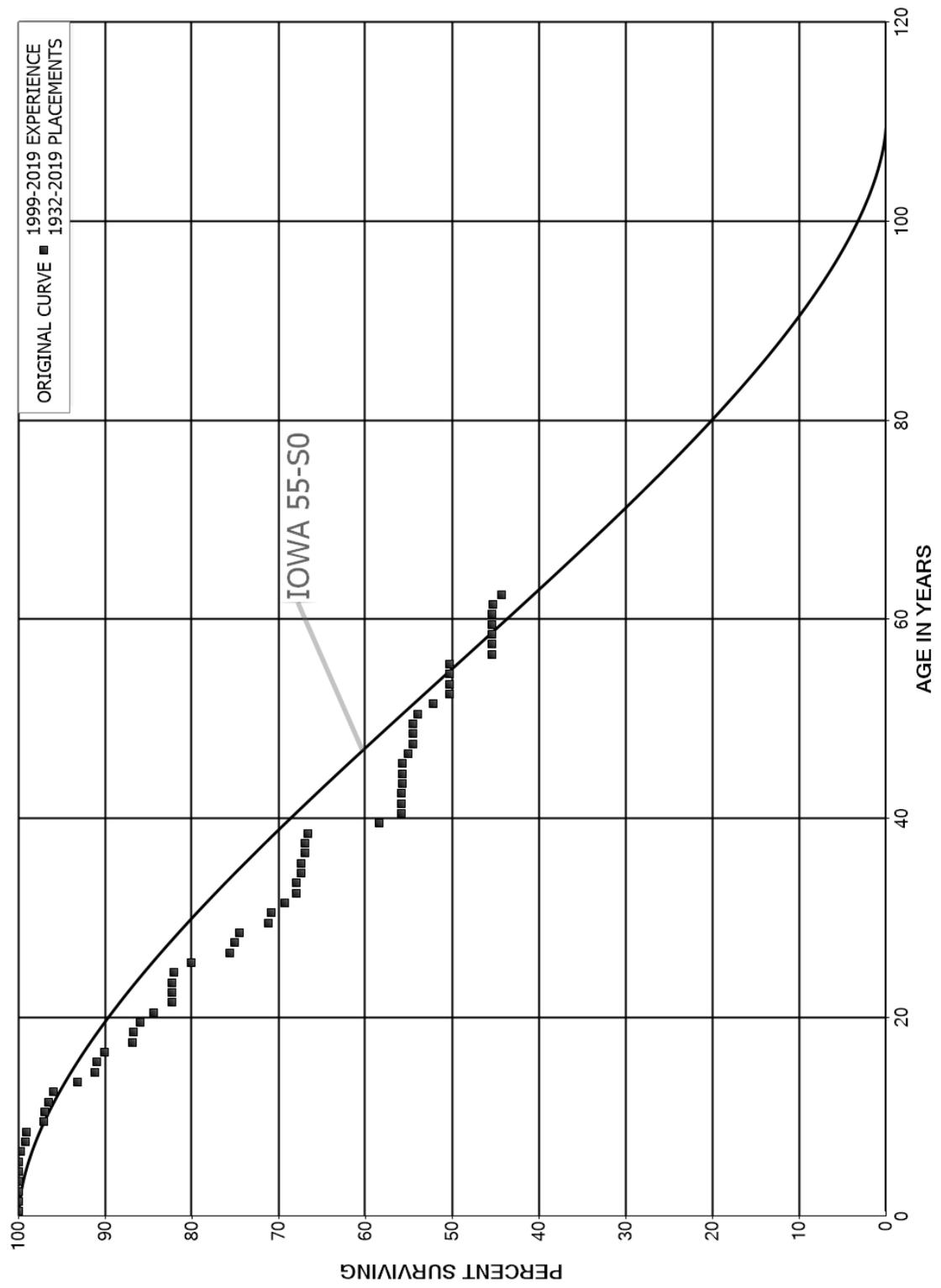
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION

ORIGINAL LIFE TABLE

PLACEMENT BAND 2007-2019			EXPERIENCE BAND 2007-2019		
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	4,844,636		0.0000	1.0000	100.00
0.5	3,478,774		0.0000	1.0000	100.00
1.5	1,864,154		0.0000	1.0000	100.00
2.5	516,452	0	0.0000	1.0000	100.00
3.5	479,797		0.0000	1.0000	100.00
4.5	437,900	416	0.0010	0.9990	100.00
5.5	422,717		0.0000	1.0000	99.90
6.5	321,516		0.0000	1.0000	99.90
7.5	321,516	1,408	0.0044	0.9956	99.90
8.5	311,522		0.0000	1.0000	99.47
9.5	311,522		0.0000	1.0000	99.47
10.5	134,415		0.0000	1.0000	99.47
11.5	20,659	3,076	0.1489	0.8511	99.47
12.5					84.66

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP

ORIGINAL LIFE TABLE

PLACEMENT BAND 1932-2019

EXPERIENCE BAND 1999-2019

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	70,500,767		0.0000	1.0000	100.00
0.5	76,131,665		0.0000	1.0000	100.00
1.5	80,233,751	6,642	0.0001	0.9999	100.00
2.5	105,447,960		0.0000	1.0000	99.99
3.5	85,605,007	28,836	0.0003	0.9997	99.99
4.5	79,002,174	4,425	0.0001	0.9999	99.96
5.5	46,624,214	105,422	0.0023	0.9977	99.95
6.5	51,444,895	277,564	0.0054	0.9946	99.73
7.5	50,906,335	75,090	0.0015	0.9985	99.19
8.5	50,793,050	1,027,715	0.0202	0.9798	99.04
9.5	34,780,266	28,544	0.0008	0.9992	97.04
10.5	15,695,508	65,025	0.0041	0.9959	96.96
11.5	15,618,899	88,716	0.0057	0.9943	96.56
12.5	20,002,643	601,564	0.0301	0.9699	96.01
13.5	17,169,269	353,428	0.0206	0.9794	93.12
14.5	16,203,968	41,247	0.0025	0.9975	91.20
15.5	16,204,082	163,309	0.0101	0.9899	90.97
16.5	13,585,539	481,677	0.0355	0.9645	90.06
17.5	12,995,837	17,548	0.0014	0.9986	86.86
18.5	12,210,208	114,143	0.0093	0.9907	86.74
19.5	7,393,964	134,551	0.0182	0.9818	85.93
20.5	6,513,761	157,405	0.0242	0.9758	84.37
21.5	6,711,244	2,801	0.0004	0.9996	82.33
22.5	7,374,817	1,543	0.0002	0.9998	82.30
23.5	6,783,698	15,823	0.0023	0.9977	82.28
24.5	6,921,413	166,617	0.0241	0.9759	82.09
25.5	6,763,696	380,532	0.0563	0.9437	80.11
26.5	5,899,041	38,147	0.0065	0.9935	75.60
27.5	4,281,769	34,820	0.0081	0.9919	75.12
28.5	3,967,252	175,318	0.0442	0.9558	74.50
29.5	4,051,668	21,732	0.0054	0.9946	71.21
30.5	5,300,696	114,682	0.0216	0.9784	70.83
31.5	4,027,463	76,382	0.0190	0.9810	69.30
32.5	2,813,504	2,190	0.0008	0.9992	67.98
33.5	2,649,698	20,846	0.0079	0.9921	67.93
34.5	1,122,954		0.0000	1.0000	67.40
35.5	398,615	2,457	0.0062	0.9938	67.40
36.5	369,394		0.0000	1.0000	66.98
37.5	339,885	1,942	0.0057	0.9943	66.98
38.5	249,055	30,753	0.1235	0.8765	66.60

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1932-2019			EXPERIENCE BAND 1999-2019		
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	877,505	37,754	0.0430	0.9570	58.37
40.5	1,351,121		0.0000	1.0000	55.86
41.5	19,298,436	4,893	0.0003	0.9997	55.86
42.5	19,293,543	30,808	0.0016	0.9984	55.85
43.5	32,745,779		0.0000	1.0000	55.76
44.5	14,343,608	10,968	0.0008	0.9992	55.76
45.5	14,332,640	153,806	0.0107	0.9893	55.72
46.5	14,199,715	156,087	0.0110	0.9890	55.12
47.5	552,598		0.0000	1.0000	54.51
48.5	1,223,925		0.0000	1.0000	54.51
49.5	1,265,936	12,500	0.0099	0.9901	54.51
50.5	1,284,936	43,517	0.0339	0.9661	53.98
51.5	570,093	20,853	0.0366	0.9634	52.15
52.5	524,823		0.0000	1.0000	50.24
53.5	524,823		0.0000	1.0000	50.24
54.5	447,474		0.0000	1.0000	50.24
55.5	447,474	42,843	0.0957	0.9043	50.24
56.5	13,313,486	1,903	0.0001	0.9999	45.43
57.5	13,311,583		0.0000	1.0000	45.42
58.5	13,049,341	13	0.0000	1.0000	45.42
59.5	140,486		0.0000	1.0000	45.42
60.5	140,486	363	0.0026	0.9974	45.42
61.5	140,123	3,040	0.0217	0.9783	45.31
62.5					44.32
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	40,428		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		

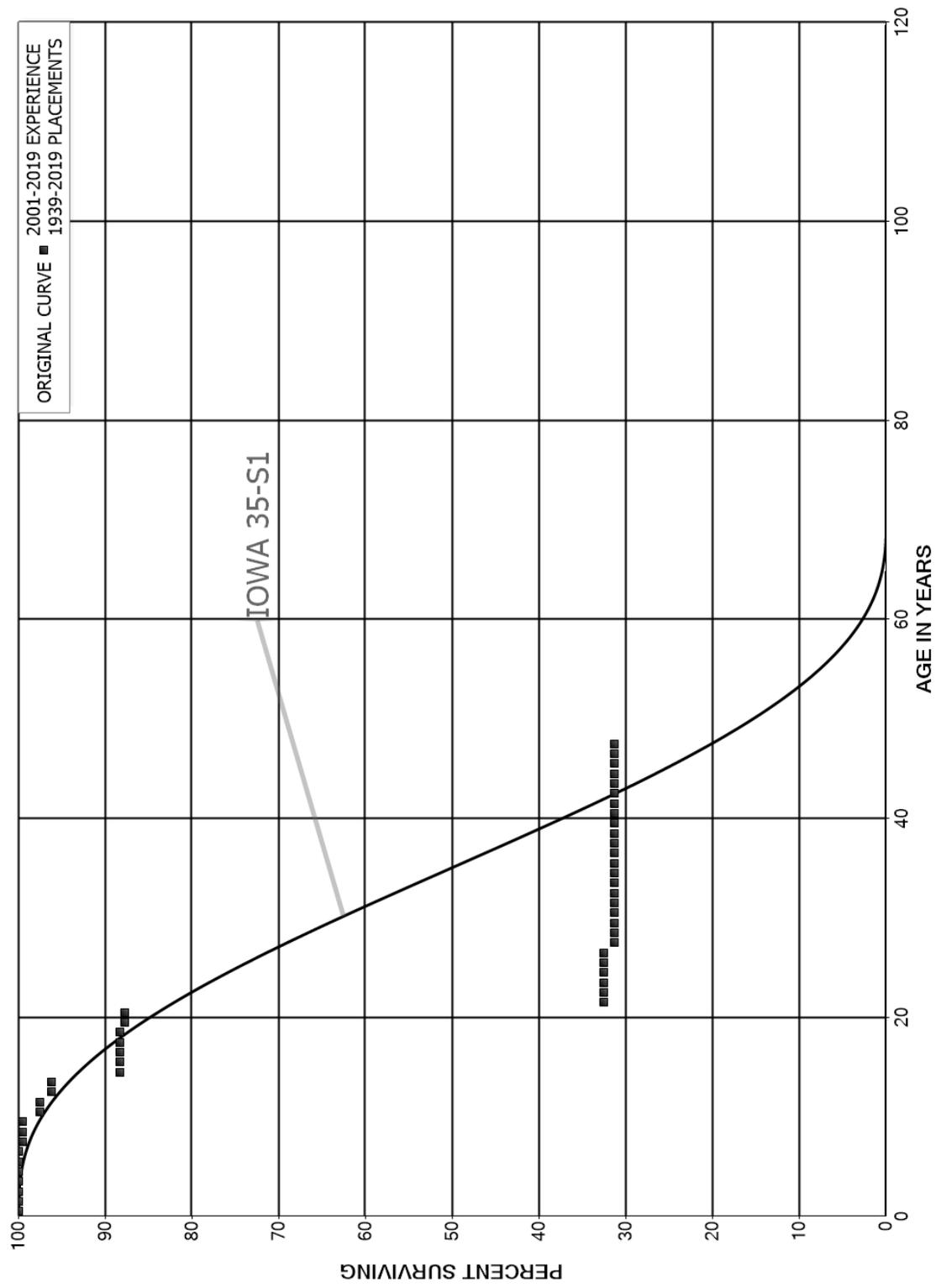
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1932-2019			EXPERIENCE BAND 1999-2019		
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	602		0.0000		
85.5	602		0.0000		
86.5	602		0.0000		
87.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 2001-2019		
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	2,331,347		0.0000	1.0000	100.00
0.5	2,248,872	400	0.0002	0.9998	100.00
1.5	2,139,519		0.0000	1.0000	99.98
2.5	2,007,976		0.0000	1.0000	99.98
3.5	1,998,798		0.0000	1.0000	99.98
4.5	978,189		0.0000	1.0000	99.98
5.5	566,034		0.0000	1.0000	99.98
6.5	540,776	2,524	0.0047	0.9953	99.98
7.5	668,631		0.0000	1.0000	99.52
8.5	661,526		0.0000	1.0000	99.52
9.5	622,592	12,303	0.0198	0.9802	99.52
10.5	529,371	373	0.0007	0.9993	97.55
11.5	209,362	2,752	0.0131	0.9869	97.48
12.5	204,311		0.0000	1.0000	96.20
13.5	220,425	18,073	0.0820	0.9180	96.20
14.5	208,207		0.0000	1.0000	88.31
15.5	208,207		0.0000	1.0000	88.31
16.5	165,317		0.0000	1.0000	88.31
17.5	193,471		0.0000	1.0000	88.31
18.5	210,457	1,510	0.0072	0.9928	88.31
19.5	223,914		0.0000	1.0000	87.68
20.5	223,914	140,772	0.6287	0.3713	87.68
21.5	67,028		0.0000	1.0000	32.56
22.5	73,481		0.0000	1.0000	32.56
23.5	73,481		0.0000	1.0000	32.56
24.5	73,481		0.0000	1.0000	32.56
25.5	44,261		0.0000	1.0000	32.56
26.5	27,275	1,047	0.0384	0.9616	32.56
27.5	11,260		0.0000	1.0000	31.31
28.5	11,260		0.0000	1.0000	31.31
29.5	11,260		0.0000	1.0000	31.31
30.5	11,260		0.0000	1.0000	31.31
31.5	11,260		0.0000	1.0000	31.31
32.5	11,260		0.0000	1.0000	31.31
33.5	11,260		0.0000	1.0000	31.31
34.5	11,260		0.0000	1.0000	31.31
35.5	450		0.0000	1.0000	31.31
36.5	450		0.0000	1.0000	31.31
37.5	450		0.0000	1.0000	31.31
38.5	450		0.0000	1.0000	31.31

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 2001-2019		
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	1.0000	31.31
40.5	450		0.0000	1.0000	31.31
41.5	450		0.0000	1.0000	31.31
42.5	450		0.0000	1.0000	31.31
43.5	450		0.0000	1.0000	31.31
44.5	450		0.0000	1.0000	31.31
45.5	450		0.0000	1.0000	31.31
46.5	450		0.0000	1.0000	31.31
47.5					31.31
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	3,519		0.0000		
78.5	3,519		0.0000		

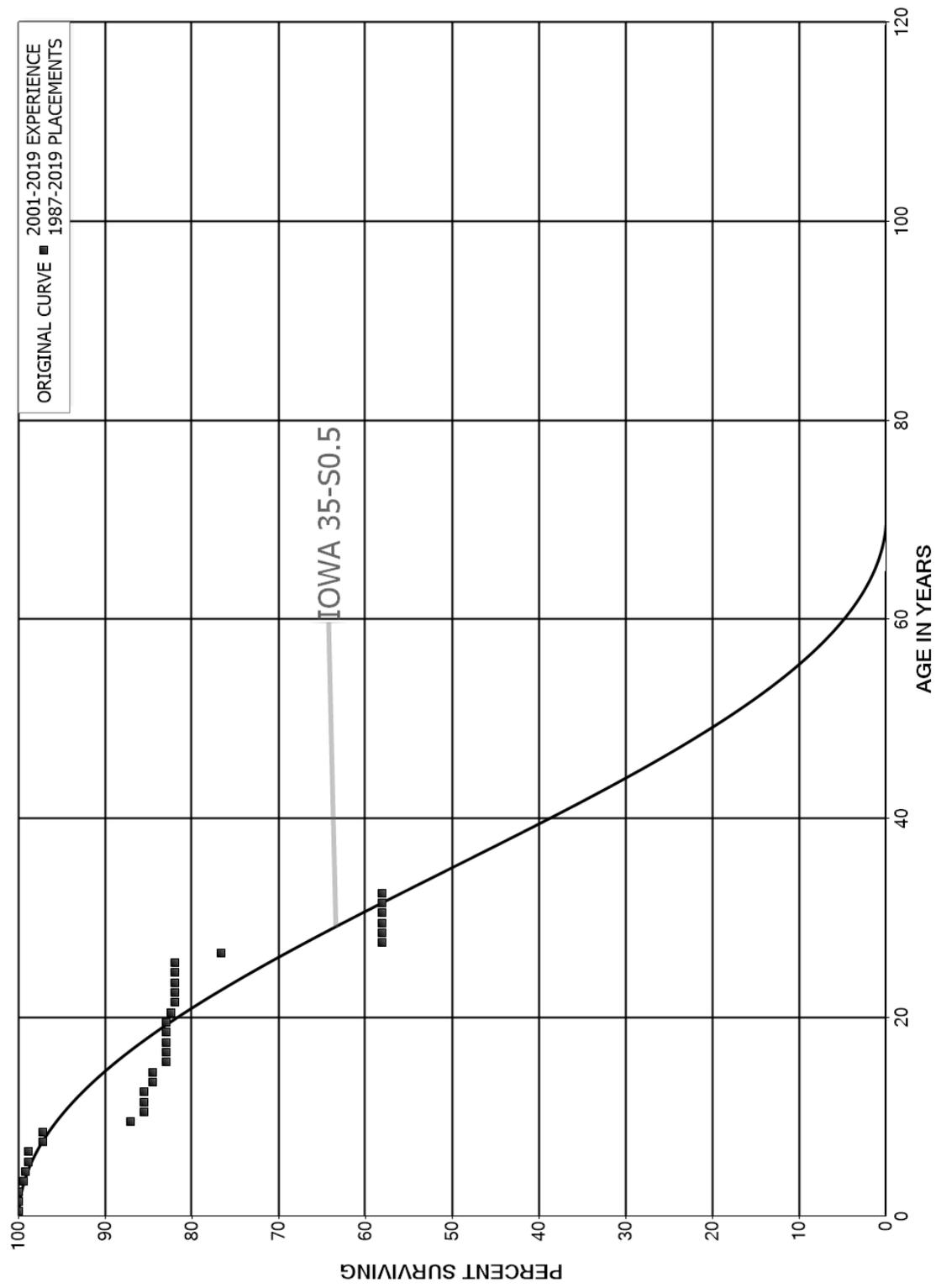
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 2001-2019		
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	3,519		0.0000		

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 355.00 POWER GENERATION EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

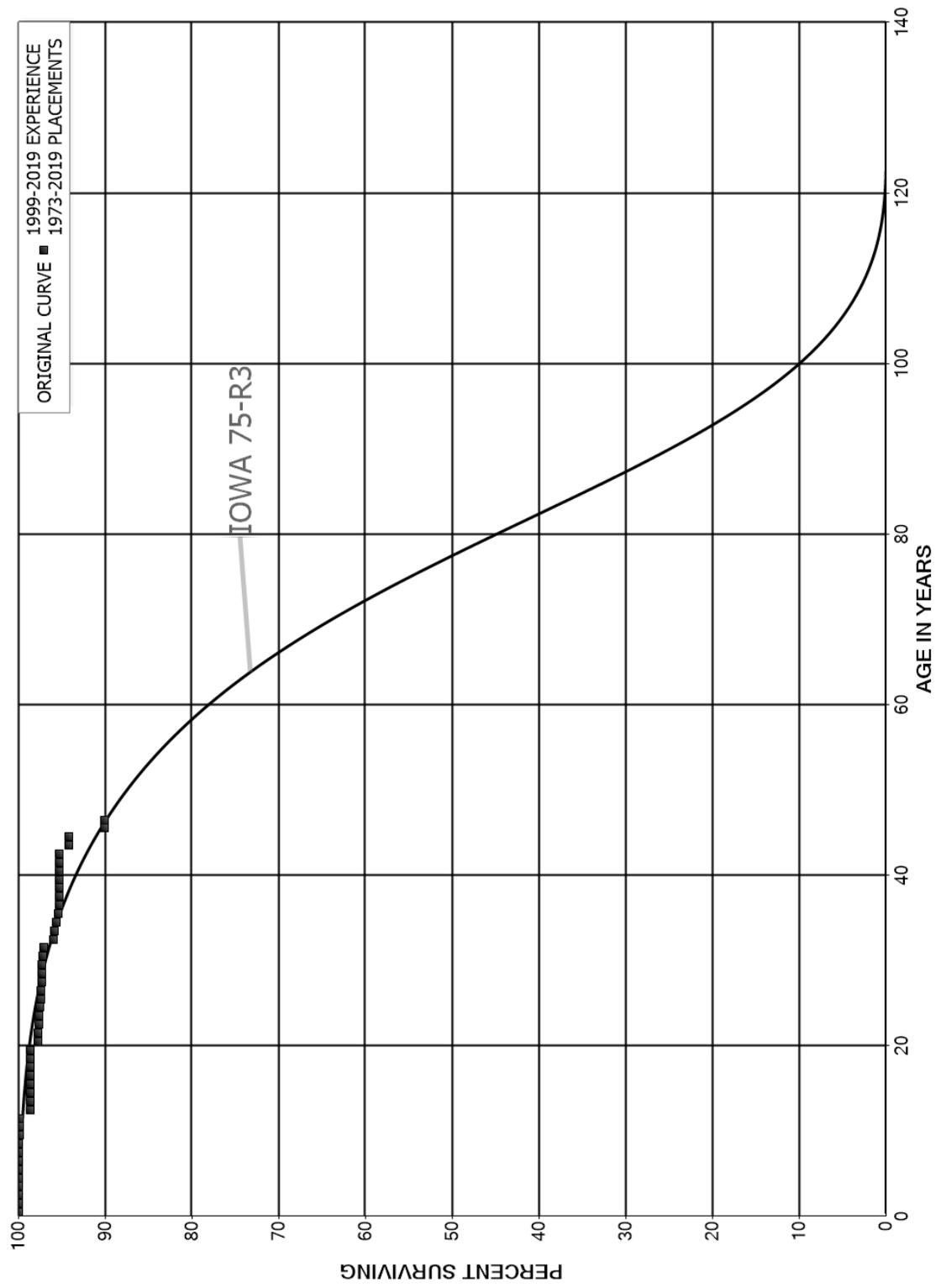
ORIGINAL LIFE TABLE

PLACEMENT BAND 1987-2019

EXPERIENCE BAND 2001-2019

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	3,656,122		0.0000	1.0000	100.00
0.5	3,685,338		0.0000	1.0000	100.00
1.5	4,385,880		0.0000	1.0000	100.00
2.5	4,494,639	26,926	0.0060	0.9940	100.00
3.5	4,479,665	10,161	0.0023	0.9977	99.40
4.5	4,398,000	14,523	0.0033	0.9967	99.18
5.5	3,773,674	1,387	0.0004	0.9996	98.85
6.5	3,828,658	61,470	0.0161	0.9839	98.81
7.5	3,336,361		0.0000	1.0000	97.23
8.5	3,321,984	347,576	0.1046	0.8954	97.23
9.5	2,953,727	51,388	0.0174	0.9826	87.05
10.5	328,249		0.0000	1.0000	85.54
11.5	144,528		0.0000	1.0000	85.54
12.5	267,555	3,097	0.0116	0.9884	85.54
13.5	327,093		0.0000	1.0000	84.55
14.5	278,538	5,336	0.0192	0.9808	84.55
15.5	281,064		0.0000	1.0000	82.93
16.5	293,645		0.0000	1.0000	82.93
17.5	241,944		0.0000	1.0000	82.93
18.5	203,466		0.0000	1.0000	82.93
19.5	203,466	1,204	0.0059	0.9941	82.93
20.5	202,262	1,103	0.0055	0.9945	82.44
21.5	432,455		0.0000	1.0000	81.99
22.5	402,008		0.0000	1.0000	81.99
23.5	402,008		0.0000	1.0000	81.99
24.5	402,008		0.0000	1.0000	81.99
25.5	402,978	26,388	0.0655	0.9345	81.99
26.5	174,978	42,310	0.2418	0.7582	76.62
27.5	89,880		0.0000	1.0000	58.09
28.5	68,585		0.0000	1.0000	58.09
29.5	68,585		0.0000	1.0000	58.09
30.5	19,246		0.0000	1.0000	58.09
31.5	19,246		0.0000	1.0000	58.09
32.5					58.09

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1973-2019			EXPERIENCE BAND 1999-2019			
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	31,766,704	19	0.0000	1.0000	100.00	
0.5	28,215,316	26	0.0000	1.0000	100.00	
1.5	35,558,986	33	0.0000	1.0000	100.00	
2.5	23,783,577	70	0.0000	1.0000	100.00	
3.5	21,373,939	350	0.0000	1.0000	100.00	
4.5	18,774,036	315	0.0000	1.0000	100.00	
5.5	14,425,014	397	0.0000	1.0000	100.00	
6.5	14,188,090	1,611	0.0001	0.9999	99.99	
7.5	14,122,868	1,747	0.0001	0.9999	99.98	
8.5	13,850,582	16,747	0.0012	0.9988	99.97	
9.5	13,465,099	64	0.0000	1.0000	99.85	
10.5	13,318,392	82	0.0000	1.0000	99.85	
11.5	10,748,868	127,626	0.0119	0.9881	99.85	
12.5	9,661,386		0.0000	1.0000	98.66	
13.5	7,868,737	3,291	0.0004	0.9996	98.66	
14.5	7,779,655	99	0.0000	1.0000	98.62	
15.5	5,905,707	9	0.0000	1.0000	98.62	
16.5	5,774,986	949	0.0002	0.9998	98.62	
17.5	5,344,267	1,253	0.0002	0.9998	98.60	
18.5	4,614,847	826	0.0002	0.9998	98.58	
19.5	4,197,905	37,017	0.0088	0.9912	98.56	
20.5	3,986,776	70	0.0000	1.0000	97.69	
21.5	4,475,797	1,897	0.0004	0.9996	97.69	
22.5	3,907,599	569	0.0001	0.9999	97.65	
23.5	4,900,347	3,932	0.0008	0.9992	97.64	
24.5	6,419,851	13,411	0.0021	0.9979	97.56	
25.5	6,580,720	788	0.0001	0.9999	97.35	
26.5	6,033,834	1,095	0.0002	0.9998	97.34	
27.5	6,011,515	2,049	0.0003	0.9997	97.32	
28.5	5,991,855	3,135	0.0005	0.9995	97.29	
29.5	6,011,945	3,365	0.0006	0.9994	97.24	
30.5	5,911,879	4,784	0.0008	0.9992	97.19	
31.5	5,517,306	65,876	0.0119	0.9881	97.11	
32.5	5,225,480	4,106	0.0008	0.9992	95.95	
33.5	5,192,765	13,636	0.0026	0.9974	95.87	
34.5	4,869,190	12,733	0.0026	0.9974	95.62	
35.5	4,856,457	2,869	0.0006	0.9994	95.37	
36.5	4,661,206	15	0.0000	1.0000	95.31	
37.5	4,607,713		0.0000	1.0000	95.31	
38.5	4,446,768	1,883	0.0004	0.9996	95.31	

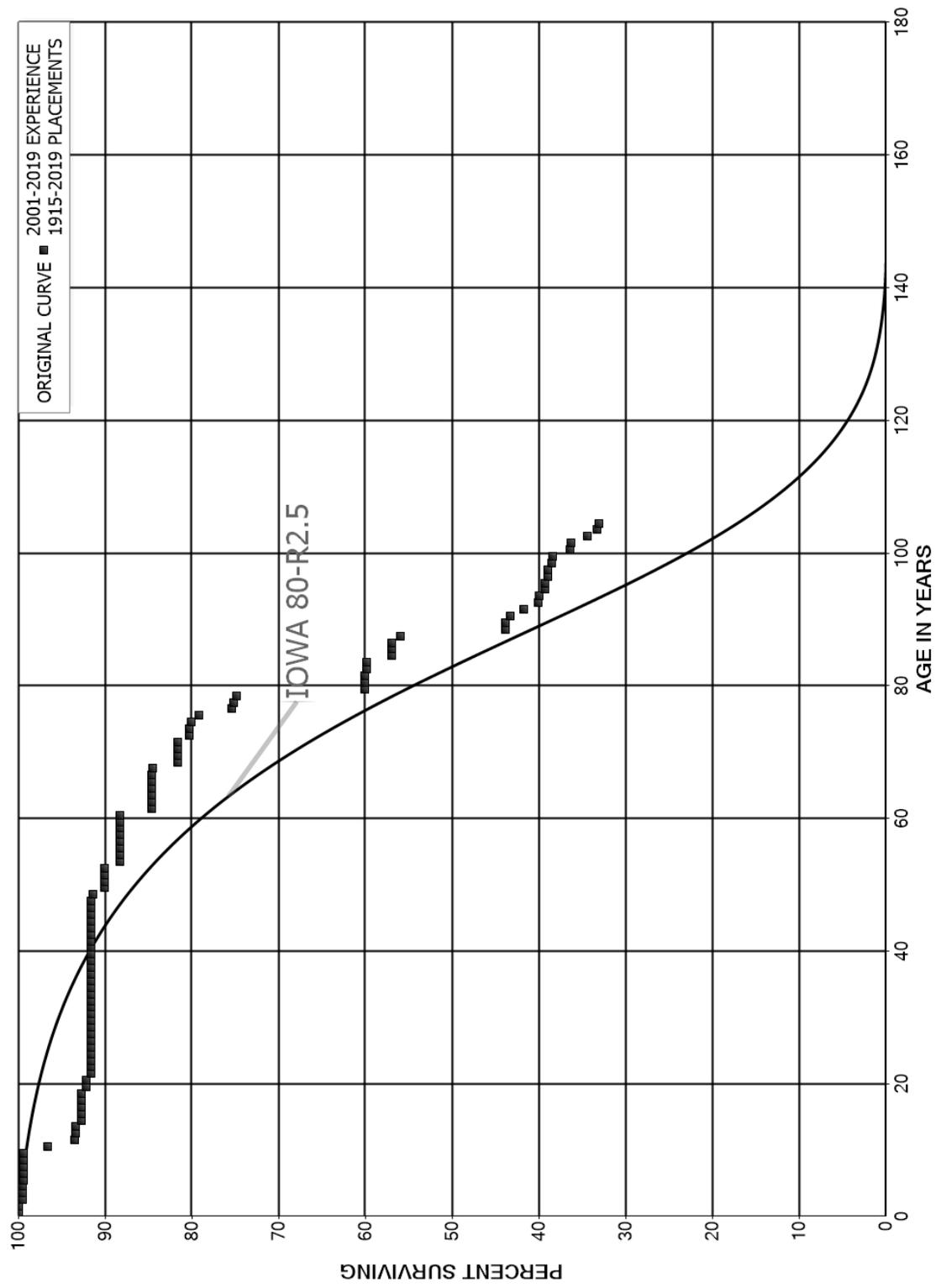
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1973-2019			EXPERIENCE BAND 1999-2019			
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	4,369,779	82	0.0000	1.0000	95.27	
40.5	4,295,948	6	0.0000	1.0000	95.27	
41.5	4,025,587	0	0.0000	1.0000	95.27	
42.5	3,566,737	42,283	0.0119	0.9881	95.27	
43.5	2,553,034		0.0000	1.0000	94.14	
44.5	1,703,254	73,783	0.0433	0.9567	94.14	
45.5	125,695		0.0000	1.0000	90.06	
46.5					90.06	

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1915-2019			EXPERIENCE BAND 2001-2019		
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	123,698,865	1,489	0.0000	1.0000	100.00
0.5	80,968,134	1,744	0.0000	1.0000	100.00
1.5	71,427,735	349,743	0.0049	0.9951	100.00
2.5	61,491,291		0.0000	1.0000	99.51
3.5	47,985,505		0.0000	1.0000	99.51
4.5	43,496,282	26,093	0.0006	0.9994	99.51
5.5	34,622,702	11,064	0.0003	0.9997	99.45
6.5	36,236,717	10,556	0.0003	0.9997	99.42
7.5	44,473,440	0	0.0000	1.0000	99.39
8.5	44,403,805	13,334	0.0003	0.9997	99.39
9.5	42,579,956	1,180,167	0.0277	0.9723	99.36
10.5	27,257,562	886,763	0.0325	0.9675	96.60
11.5	23,041,413	10,064	0.0004	0.9996	93.46
12.5	15,696,984	13,300	0.0008	0.9992	93.42
13.5	13,197,516	82,522	0.0063	0.9937	93.34
14.5	9,898,866	187	0.0000	1.0000	92.76
15.5	8,175,329	367	0.0000	1.0000	92.75
16.5	11,005,722	1,374	0.0001	0.9999	92.75
17.5	22,668,123		0.0000	1.0000	92.74
18.5	22,367,436	144,378	0.0065	0.9935	92.74
19.5	21,841,271		0.0000	1.0000	92.14
20.5	10,429,000	56,430	0.0054	0.9946	92.14
21.5	13,494,984		0.0000	1.0000	91.64
22.5	12,095,717		0.0000	1.0000	91.64
23.5	13,846,891		0.0000	1.0000	91.64
24.5	14,182,481		0.0000	1.0000	91.64
25.5	19,071,002		0.0000	1.0000	91.64
26.5	16,170,692		0.0000	1.0000	91.64
27.5	36,060,280		0.0000	1.0000	91.64
28.5	35,923,542		0.0000	1.0000	91.64
29.5	33,683,971		0.0000	1.0000	91.64
30.5	8,391,683	866	0.0001	0.9999	91.64
31.5	8,167,272	21	0.0000	1.0000	91.63
32.5	8,027,418		0.0000	1.0000	91.63
33.5	7,266,714		0.0000	1.0000	91.63
34.5	5,540,059		0.0000	1.0000	91.63
35.5	3,406,034		0.0000	1.0000	91.63
36.5	3,951,146		0.0000	1.0000	91.63
37.5	4,287,296		0.0000	1.0000	91.63
38.5	4,273,219		0.0000	1.0000	91.63

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1915-2019			EXPERIENCE BAND 2001-2019		
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	4,243,666		0.0000	1.0000	91.63
40.5	41,503,891	5,447	0.0001	0.9999	91.63
41.5	41,043,016	49	0.0000	1.0000	91.62
42.5	41,341,828		0.0000	1.0000	91.62
43.5	20,516,395		0.0000	1.0000	91.62
44.5	17,262,745	4,573	0.0003	0.9997	91.62
45.5	17,447,879		0.0000	1.0000	91.60
46.5	16,922,111	1,617	0.0001	0.9999	91.60
47.5	1,493,981	2,878	0.0019	0.9981	91.59
48.5	1,491,103	21,283	0.0143	0.9857	91.41
49.5	995,707	187	0.0002	0.9998	90.11
50.5	1,249,631		0.0000	1.0000	90.09
51.5	1,214,773		0.0000	1.0000	90.09
52.5	1,253,366	24,618	0.0196	0.9804	90.09
53.5	28,374,663		0.0000	1.0000	88.32
54.5	38,998,170		0.0000	1.0000	88.32
55.5	39,986,553		0.0000	1.0000	88.32
56.5	13,005,874		0.0000	1.0000	88.32
57.5	59,432,346		0.0000	1.0000	88.32
58.5	60,820,282	557	0.0000	1.0000	88.32
59.5	59,761,303	747	0.0000	1.0000	88.32
60.5	2,094,297	87,761	0.0419	0.9581	88.32
61.5	22,663,762	8	0.0000	1.0000	84.62
62.5	21,213,491	61	0.0000	1.0000	84.62
63.5	21,215,934	289	0.0000	1.0000	84.62
64.5	46,353		0.0000	1.0000	84.62
65.5	1,102,303		0.0000	1.0000	84.62
66.5	1,102,303	1,673	0.0015	0.9985	84.62
67.5	1,100,630	37,140	0.0337	0.9663	84.49
68.5	1,259,440		0.0000	1.0000	81.64
69.5	290,689		0.0000	1.0000	81.64
70.5	962,463	168	0.0002	0.9998	81.64
71.5	962,295	15,230	0.0158	0.9842	81.62
72.5	1,042,298	993	0.0010	0.9990	80.33
73.5	946,072	2,053	0.0022	0.9978	80.25
74.5	683,176	7,508	0.0110	0.9890	80.08
75.5	675,668	32,767	0.0485	0.9515	79.20
76.5	642,901	1,310	0.0020	0.9980	75.36
77.5	1,531,686	8,017	0.0052	0.9948	75.20
78.5	1,523,669	299,242	0.1964	0.8036	74.81

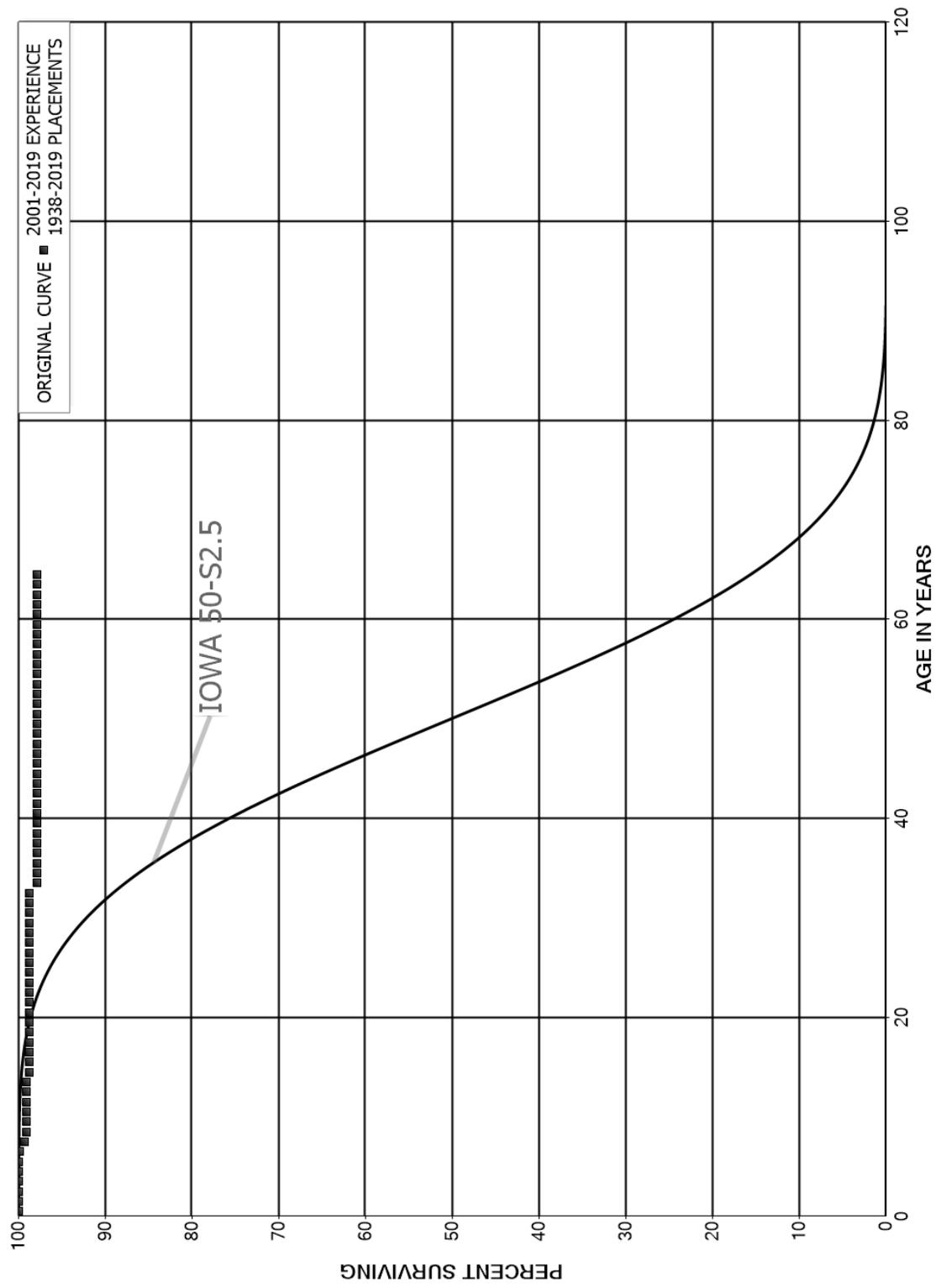
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1915-2019			EXPERIENCE BAND 2001-2019			
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	1,224,427	291	0.0002	0.9998	60.12	
80.5	1,522,508		0.0000	1.0000	60.10	
81.5	632,413	2,303	0.0036	0.9964	60.10	
82.5	648,868		0.0000	1.0000	59.89	
83.5	648,868	31,252	0.0482	0.9518	59.89	
84.5	601,981	10	0.0000	1.0000	57.00	
85.5	722,814		0.0000	1.0000	57.00	
86.5	722,814	13,485	0.0187	0.9813	57.00	
87.5	709,329	153,014	0.2157	0.7843	55.94	
88.5	556,315	264	0.0005	0.9995	43.87	
89.5	329,027	4,352	0.0132	0.9868	43.85	
90.5	306,175	11,276	0.0368	0.9632	43.27	
91.5	294,898	11,132	0.0377	0.9623	41.68	
92.5	283,767	1,273	0.0045	0.9955	40.10	
93.5	282,494	4,366	0.0155	0.9845	39.92	
94.5	278,128	221	0.0008	0.9992	39.31	
95.5	277,906	1,967	0.0071	0.9929	39.27	
96.5	275,939	42	0.0002	0.9998	39.00	
97.5	3,804,626	42,906	0.0113	0.9887	38.99	
98.5	3,761,720	15,091	0.0040	0.9960	38.55	
99.5	3,616,599	191,754	0.0530	0.9470	38.40	
100.5	3,424,846	6,012	0.0018	0.9982	36.36	
101.5	96,405	5,167	0.0536	0.9464	36.30	
102.5	91,238	2,967	0.0325	0.9675	34.35	
103.5	88,271	309	0.0035	0.9965	33.23	
104.5					33.12	

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 361.20 MANHOLES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.20 MANHOLES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1938-2019

EXPERIENCE BAND 2001-2019

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	14,379,651		0.0000	1.0000	100.00
0.5	10,176,887		0.0000	1.0000	100.00
1.5	10,661,285	0	0.0000	1.0000	100.00
2.5	11,952,425		0.0000	1.0000	100.00
3.5	12,083,028	911	0.0001	0.9999	100.00
4.5	7,585,455		0.0000	1.0000	99.99
5.5	5,573,639	6,667	0.0012	0.9988	99.99
6.5	4,589,383	27,566	0.0060	0.9940	99.87
7.5	4,569,090	10,961	0.0024	0.9976	99.27
8.5	5,066,097		0.0000	1.0000	99.03
9.5	5,304,644		0.0000	1.0000	99.03
10.5	5,838,060		0.0000	1.0000	99.03
11.5	5,353,439		0.0000	1.0000	99.03
12.5	4,555,554		0.0000	1.0000	99.03
13.5	4,114,028	12,188	0.0030	0.9970	99.03
14.5	2,635,311		0.0000	1.0000	98.74
15.5	2,105,291	0	0.0000	1.0000	98.74
16.5	2,247,105	472	0.0002	0.9998	98.74
17.5	2,934,821		0.0000	1.0000	98.72
18.5	2,849,242		0.0000	1.0000	98.72
19.5	2,782,656		0.0000	1.0000	98.72
20.5	2,425,509	0	0.0000	1.0000	98.72
21.5	1,772,096		0.0000	1.0000	98.72
22.5	970,343		0.0000	1.0000	98.72
23.5	1,299,611		0.0000	1.0000	98.72
24.5	1,741,110		0.0000	1.0000	98.72
25.5	2,636,710		0.0000	1.0000	98.72
26.5	3,361,749		0.0000	1.0000	98.72
27.5	3,450,899		0.0000	1.0000	98.72
28.5	3,240,536		0.0000	1.0000	98.72
29.5	2,574,979		0.0000	1.0000	98.72
30.5	1,538,799		0.0000	1.0000	98.72
31.5	1,635,548		0.0000	1.0000	98.72
32.5	1,551,747	13,277	0.0086	0.9914	98.72
33.5	1,328,056		0.0000	1.0000	97.88
34.5	1,038,030		0.0000	1.0000	97.88
35.5	1,093,592		0.0000	1.0000	97.88
36.5	1,326,879		0.0000	1.0000	97.88
37.5	1,450,927		0.0000	1.0000	97.88
38.5	1,304,196		0.0000	1.0000	97.88

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.20 MANHOLES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1938-2019			EXPERIENCE BAND 2001-2019		
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	994,944		0.0000	1.0000	97.88
40.5	2,263,935		0.0000	1.0000	97.88
41.5	2,043,826		0.0000	1.0000	97.88
42.5	2,216,232		0.0000	1.0000	97.88
43.5	2,406,018		0.0000	1.0000	97.88
44.5	2,040,304		0.0000	1.0000	97.88
45.5	2,008,665		0.0000	1.0000	97.88
46.5	1,708,150		0.0000	1.0000	97.88
47.5	301,817		0.0000	1.0000	97.88
48.5	301,817		0.0000	1.0000	97.88
49.5	170,327		0.0000	1.0000	97.88
50.5	201,568		0.0000	1.0000	97.88
51.5	166,180		0.0000	1.0000	97.88
52.5	172,781		0.0000	1.0000	97.88
53.5	1,995,623		0.0000	1.0000	97.88
54.5	1,827,036		0.0000	1.0000	97.88
55.5	1,951,871		0.0000	1.0000	97.88
56.5	131,436		0.0000	1.0000	97.88
57.5	10,950,272		0.0000	1.0000	97.88
58.5	10,950,272		0.0000	1.0000	97.88
59.5	10,825,437		0.0000	1.0000	97.88
60.5	89,564		0.0000	1.0000	97.88
61.5	89,564		0.0000	1.0000	97.88
62.5	89,564		0.0000	1.0000	97.88
63.5	89,564		0.0000	1.0000	97.88
64.5					97.88
65.5	100,437		0.0000		
66.5	100,437		0.0000		
67.5	123,426		0.0000		
68.5	167,059	22,989	0.1376		
69.5	43,633		0.0000		
70.5	84,331		0.0000		
71.5	84,331		0.0000		
72.5	90,699		0.0000		
73.5	84,331		0.0000		
74.5	43,633		0.0000		
75.5	43,633		0.0000		
76.5	43,633		0.0000		
77.5	306,691		0.0000		
78.5	306,691		0.0000		

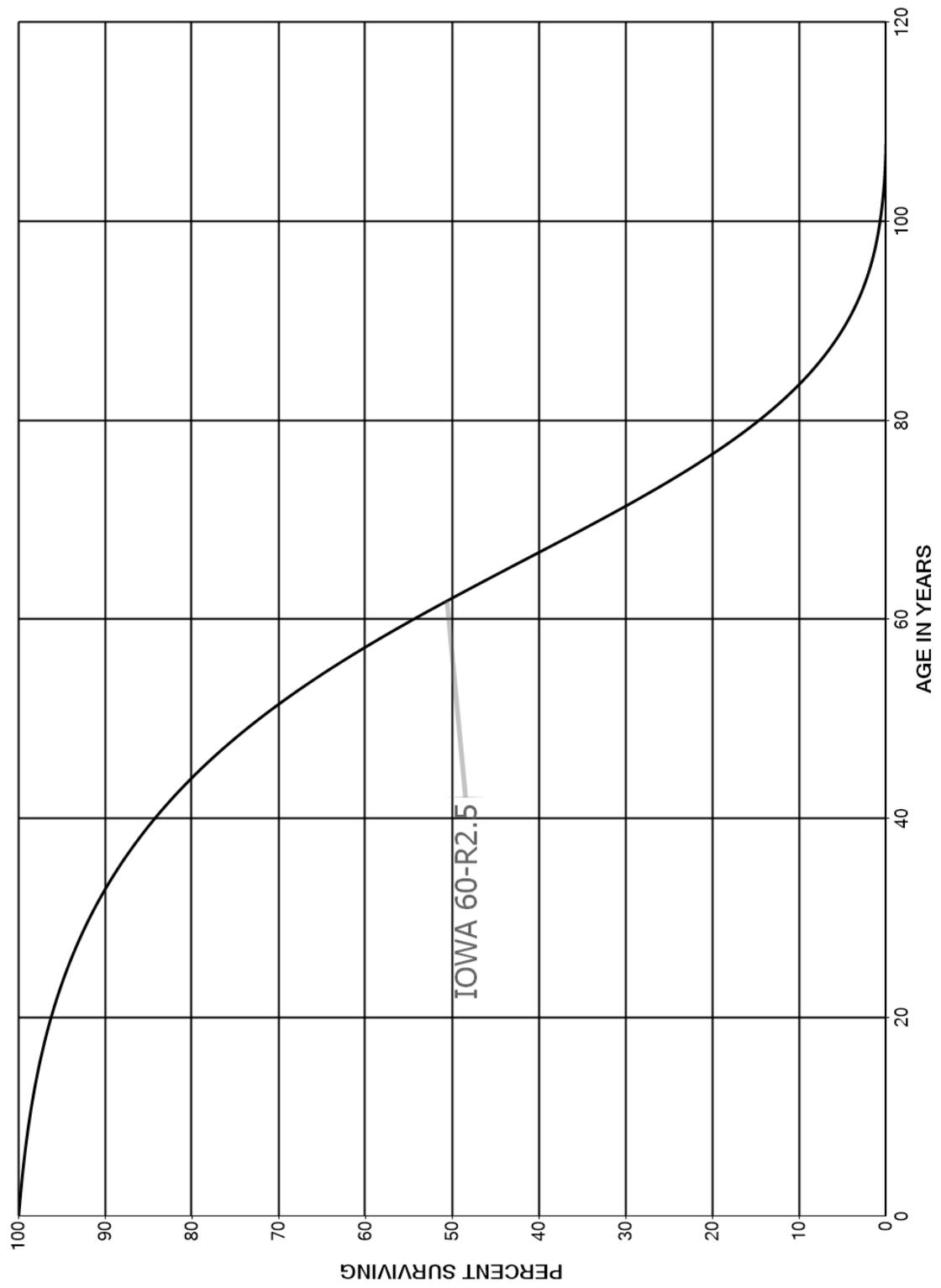
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 361.20 MANHOLES

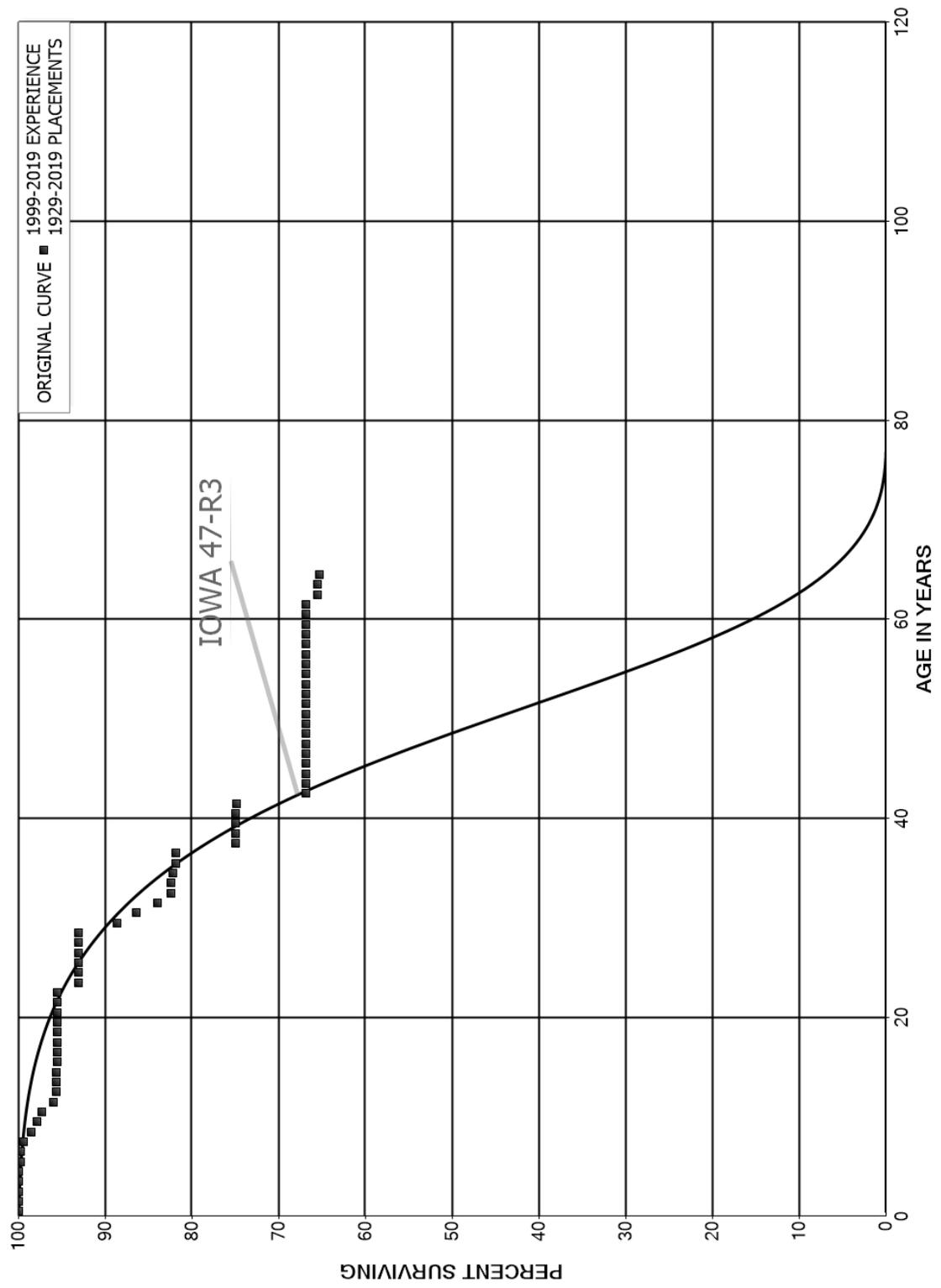
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1938-2019			EXPERIENCE BAND 2001-2019		
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	306,691	1,171	0.0038		
80.5	263,058		0.0000		
81.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 362.00 SPECIAL COLLECTION STRUCTURES
 SMOOTH SURVIVOR CURVE



PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 363.00 SERVICES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1929-2019			EXPERIENCE BAND 1999-2019			
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	10,615,796	0	0.0000	1.0000	100.00	
0.5	10,038,138	0	0.0000	1.0000	100.00	
1.5	9,510,472	60	0.0000	1.0000	100.00	
2.5	8,790,677	5,668	0.0006	0.9994	100.00	
3.5	8,679,530	421	0.0000	1.0000	99.93	
4.5	7,932,683	12,635	0.0016	0.9984	99.93	
5.5	6,966,530	2,890	0.0004	0.9996	99.77	
6.5	8,411,000	31,963	0.0038	0.9962	99.73	
7.5	8,278,555	65,894	0.0080	0.9920	99.35	
8.5	8,313,922	64,649	0.0078	0.9922	98.56	
9.5	8,351,147	42,617	0.0051	0.9949	97.79	
10.5	6,470,010	87,729	0.0136	0.9864	97.29	
11.5	6,246,021	19,892	0.0032	0.9968	95.98	
12.5	5,858,877	0	0.0000	1.0000	95.67	
13.5	4,698,450	4,942	0.0011	0.9989	95.67	
14.5	4,095,435	871	0.0002	0.9998	95.57	
15.5	3,284,377		0.0000	1.0000	95.55	
16.5	3,511,888	0	0.0000	1.0000	95.55	
17.5	3,953,464	0	0.0000	1.0000	95.55	
18.5	3,909,166	55	0.0000	1.0000	95.55	
19.5	3,630,733		0.0000	1.0000	95.55	
20.5	3,925,137		0.0000	1.0000	95.55	
21.5	3,646,749		0.0000	1.0000	95.55	
22.5	3,395,484	87,997	0.0259	0.9741	95.55	
23.5	3,780,922		0.0000	1.0000	93.07	
24.5	4,115,954	497	0.0001	0.9999	93.07	
25.5	5,003,579		0.0000	1.0000	93.06	
26.5	5,176,777		0.0000	1.0000	93.06	
27.5	4,635,070		0.0000	1.0000	93.06	
28.5	4,421,930	209,578	0.0474	0.9526	93.06	
29.5	3,596,999	92,585	0.0257	0.9743	88.65	
30.5	2,947,708	80,733	0.0274	0.9726	86.37	
31.5	2,783,645	51,927	0.0187	0.9813	84.00	
32.5	2,491,265	1,241	0.0005	0.9995	82.43	
33.5	2,228,511	4,871	0.0022	0.9978	82.39	
34.5	1,965,612	8,461	0.0043	0.9957	82.21	
35.5	1,925,423	503	0.0003	0.9997	81.86	
36.5	1,973,278	167,021	0.0846	0.9154	81.84	
37.5	1,839,375	192	0.0001	0.9999	74.91	
38.5	1,657,395		0.0000	1.0000	74.90	

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1929-2019			EXPERIENCE BAND 1999-2019		
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	1,207,182		0.0000	1.0000	74.90
40.5	1,197,802	385	0.0003	0.9997	74.90
41.5	1,022,673	110,064	0.1076	0.8924	74.88
42.5	886,687		0.0000	1.0000	66.82
43.5	1,408,938		0.0000	1.0000	66.82
44.5	900,914		0.0000	1.0000	66.82
45.5	855,938		0.0000	1.0000	66.82
46.5	736,586		0.0000	1.0000	66.82
47.5	156,414		0.0000	1.0000	66.82
48.5	155,860		0.0000	1.0000	66.82
49.5	82,277		0.0000	1.0000	66.82
50.5	145,022		0.0000	1.0000	66.82
51.5	132,653		0.0000	1.0000	66.82
52.5	134,754	0	0.0000	1.0000	66.82
53.5	137,757		0.0000	1.0000	66.82
54.5	20,119		0.0000	1.0000	66.82
55.5	100,869		0.0000	1.0000	66.82
56.5	100,869		0.0000	1.0000	66.82
57.5	97,866		0.0000	1.0000	66.82
58.5	256,316		0.0000	1.0000	66.82
59.5	180,162	20	0.0001	0.9999	66.82
60.5	228,822		0.0000	1.0000	66.81
61.5	228,822	4,595	0.0201	0.9799	66.81
62.5	50,781		0.0000	1.0000	65.47
63.5	50,781	162	0.0032	0.9968	65.47
64.5					65.26
65.5	60,144		0.0000		
66.5	60,144		0.0000		
67.5	60,144		0.0000		
68.5	70,211		0.0000		
69.5	13,932	819	0.0588		
70.5	36,101		0.0000		
71.5	36,101	4,521	0.1252		
72.5	31,580	1,251	0.0396		
73.5	30,329	442	0.0146		
74.5	6,899	644	0.0933		
75.5	6,255		0.0000		
76.5	6,255		0.0000		
77.5	151,010		0.0000		
78.5	151,010		0.0000		

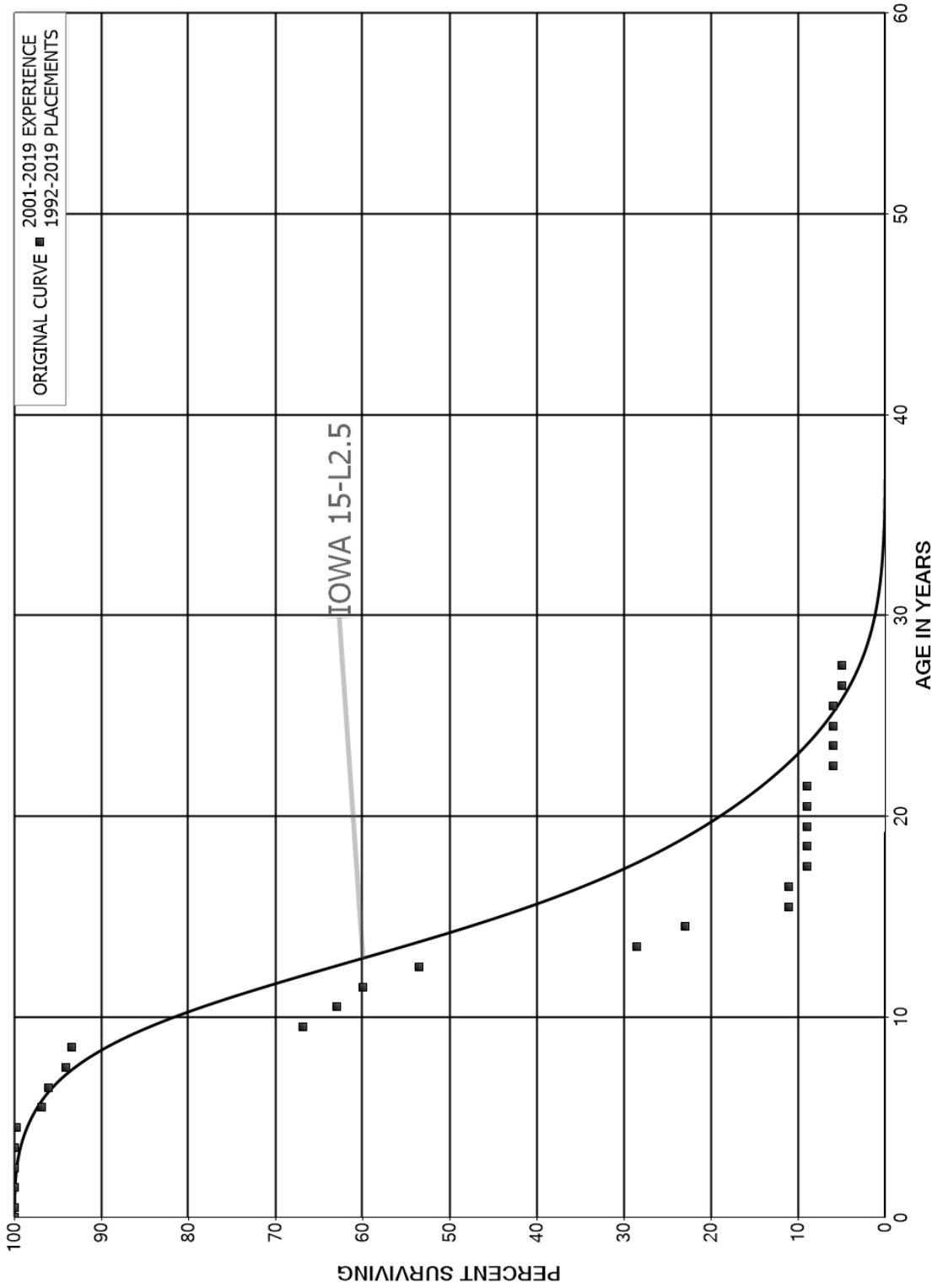
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1929-2019			EXPERIENCE BAND 1999-2019		
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	151,010		0.0000		
80.5	144,755	1,628	0.0112		
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	717		0.0000		
88.5	717		0.0000		
89.5	717		0.0000		
90.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 364.00 FLOW MEASURING DEVICES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



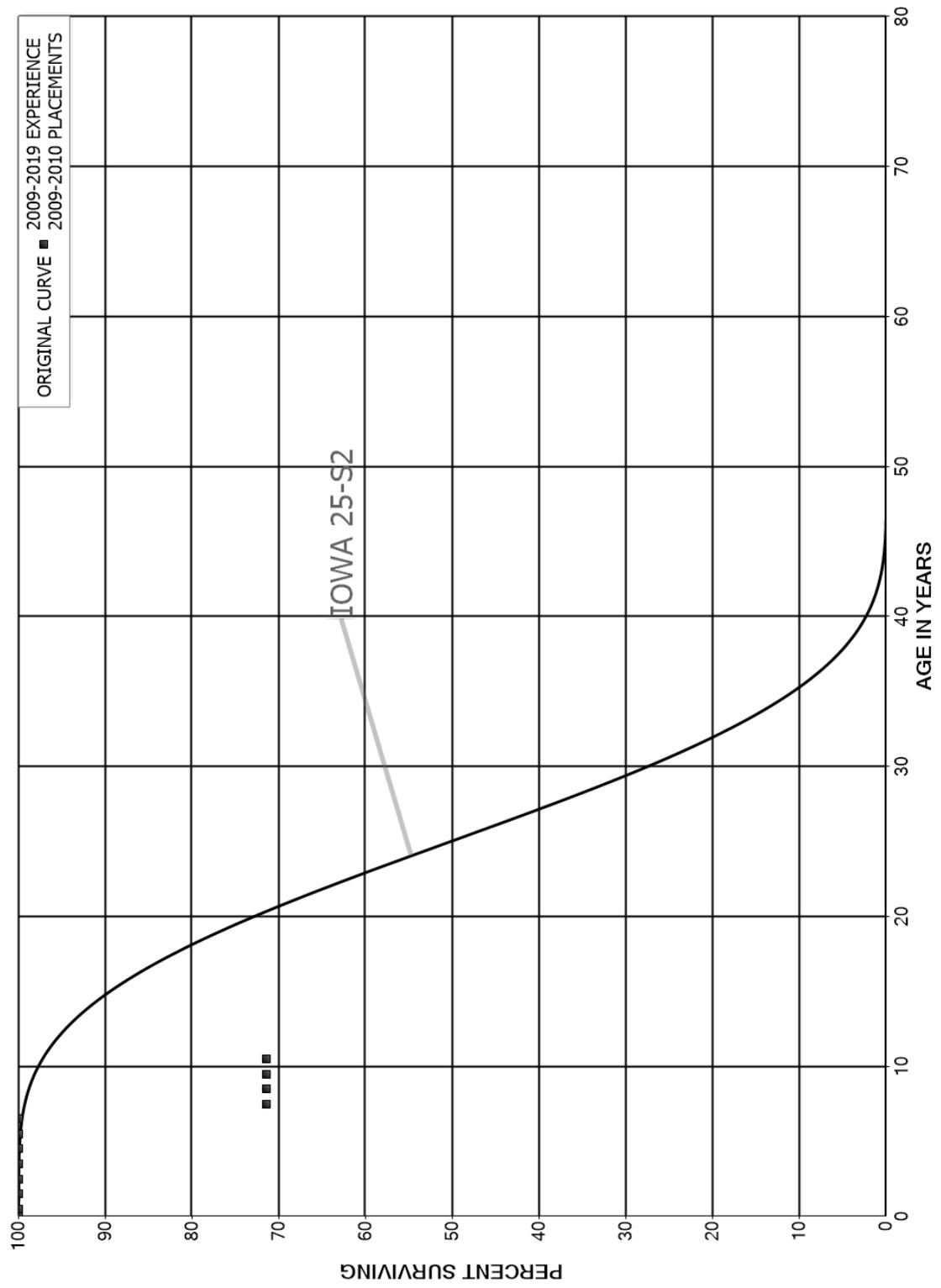
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1992-2019			EXPERIENCE BAND 2001-2019		
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	1,359,184		0.0000	1.0000	100.00
0.5	993,961		0.0000	1.0000	100.00
1.5	1,007,023		0.0000	1.0000	100.00
2.5	1,088,761		0.0000	1.0000	100.00
3.5	829,368	2,564	0.0031	0.9969	100.00
4.5	790,917	22,463	0.0284	0.9716	99.69
5.5	745,466	5,882	0.0079	0.9921	96.86
6.5	575,156	12,254	0.0213	0.9787	96.10
7.5	576,785	4,337	0.0075	0.9925	94.05
8.5	639,652	181,670	0.2840	0.7160	93.34
9.5	332,968	19,182	0.0576	0.9424	66.83
10.5	221,704	10,816	0.0488	0.9512	62.98
11.5	90,287	9,617	0.1065	0.8935	59.91
12.5	71,639	33,466	0.4671	0.5329	53.53
13.5	31,704	6,133	0.1934	0.8066	28.52
14.5	16,849	8,739	0.5187	0.4813	23.00
15.5	16,281		0.0000	1.0000	11.07
16.5	16,281	3,203	0.1967	0.8033	11.07
17.5	13,078		0.0000	1.0000	8.90
18.5	13,078		0.0000	1.0000	8.90
19.5	13,078		0.0000	1.0000	8.90
20.5	13,078		0.0000	1.0000	8.90
21.5	13,078	4,272	0.3266	0.6734	8.90
22.5	8,806		0.0000	1.0000	5.99
23.5	8,806		0.0000	1.0000	5.99
24.5	8,806		0.0000	1.0000	5.99
25.5	8,806	1,522	0.1728	0.8272	5.99
26.5	7,285		0.0000	1.0000	4.95
27.5					4.95

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



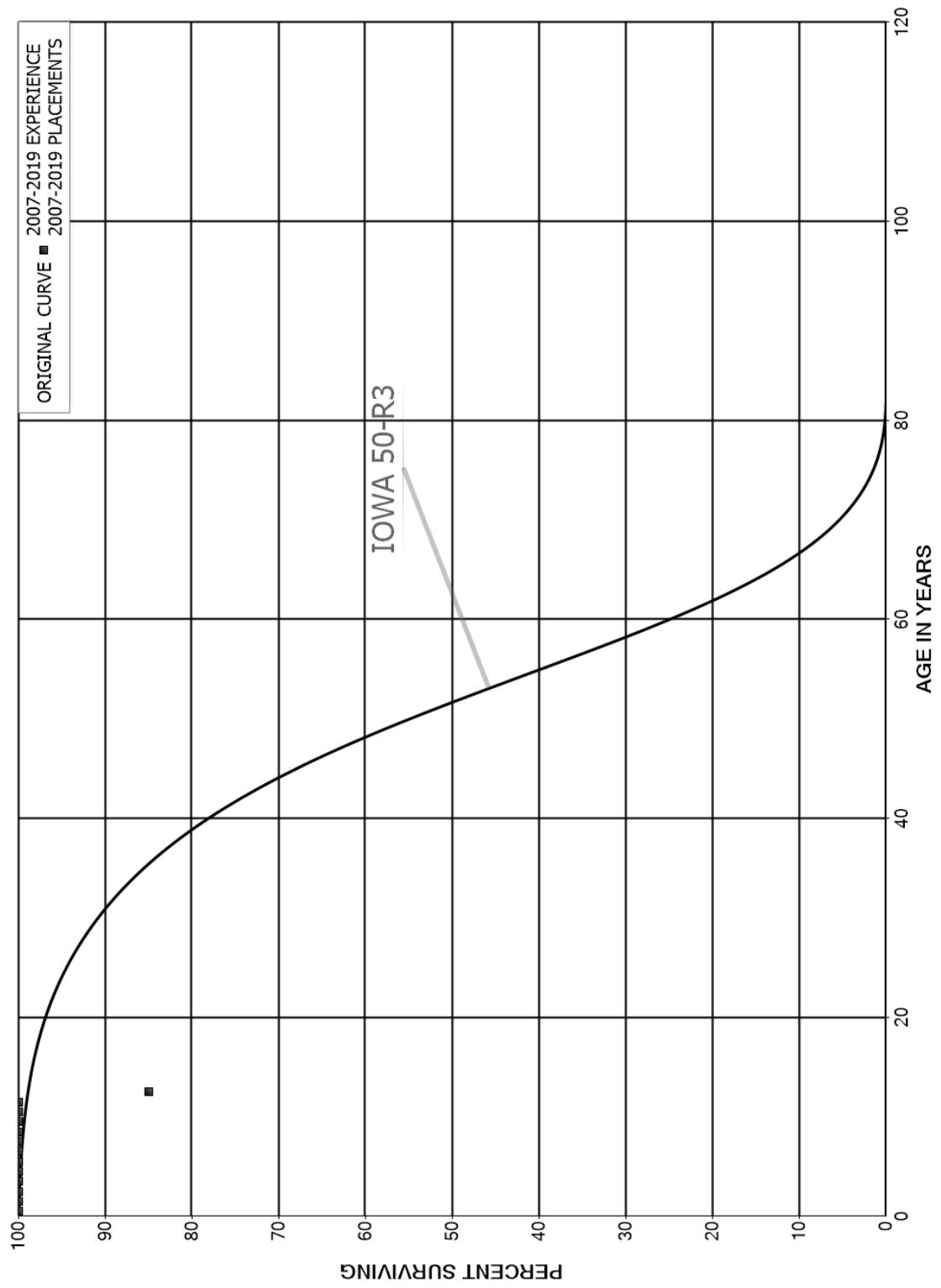
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2009-2010			EXPERIENCE BAND 2009-2019		
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	20,918	5,980	0.2859	0.7141	100.00
7.5	14,938		0.0000	1.0000	71.41
8.5	14,938		0.0000	1.0000	71.41
9.5	14,938		0.0000	1.0000	71.41
10.5					71.41

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 370.00 RECEIVING WELLS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



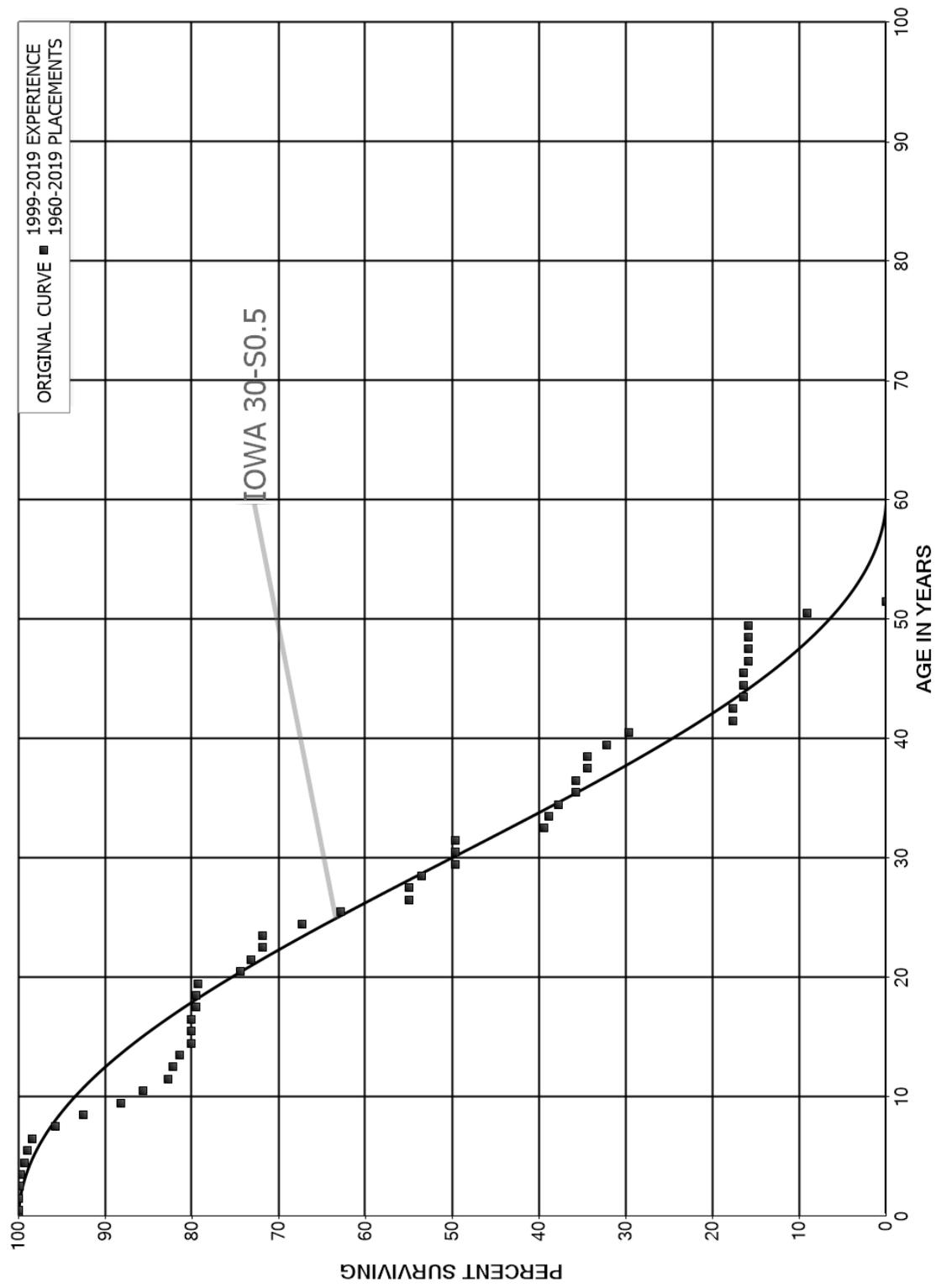
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 370.00 RECEIVING WELLS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2007-2019			EXPERIENCE BAND 2007-2019		
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	121,180		0.0000	1.0000	100.00
0.5	111,148		0.0000	1.0000	100.00
1.5	111,148		0.0000	1.0000	100.00
2.5	132,949		0.0000	1.0000	100.00
3.5	132,949		0.0000	1.0000	100.00
4.5	132,949		0.0000	1.0000	100.00
5.5	132,949		0.0000	1.0000	100.00
6.5	99,482		0.0000	1.0000	100.00
7.5	99,482		0.0000	1.0000	100.00
8.5	99,482		0.0000	1.0000	100.00
9.5	99,482		0.0000	1.0000	100.00
10.5	7,370		0.0000	1.0000	100.00
11.5	7,370	1,109	0.1505	0.8495	100.00
12.5					84.95

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 371.00 PUMPING EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1960-2019

EXPERIENCE BAND 1999-2019

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	13,928,914		0.0000	1.0000	100.00
0.5	8,653,630	5,419	0.0006	0.9994	100.00
1.5	11,021,964	12,306	0.0011	0.9989	99.94
2.5	10,781,219	12,096	0.0011	0.9989	99.83
3.5	9,453,412	44,345	0.0047	0.9953	99.71
4.5	6,817,321	23,246	0.0034	0.9966	99.25
5.5	5,785,361	27,560	0.0048	0.9952	98.91
6.5	5,413,591	148,677	0.0275	0.9725	98.44
7.5	3,768,518	126,794	0.0336	0.9664	95.73
8.5	3,446,810	160,001	0.0464	0.9536	92.51
9.5	2,549,487	73,710	0.0289	0.9711	88.22
10.5	1,455,129	50,056	0.0344	0.9656	85.67
11.5	1,043,502	7,445	0.0071	0.9929	82.72
12.5	1,137,255	10,025	0.0088	0.9912	82.13
13.5	837,345	14,096	0.0168	0.9832	81.41
14.5	784,395		0.0000	1.0000	80.04
15.5	677,887		0.0000	1.0000	80.04
16.5	534,434	3,610	0.0068	0.9932	80.04
17.5	610,401	101	0.0002	0.9998	79.50
18.5	664,971	1,413	0.0021	0.9979	79.48
19.5	663,558	41,426	0.0624	0.9376	79.31
20.5	588,736	9,514	0.0162	0.9838	74.36
21.5	638,927	11,409	0.0179	0.9821	73.16
22.5	599,786		0.0000	1.0000	71.85
23.5	517,501	33,177	0.0641	0.9359	71.85
24.5	484,324	31,555	0.0652	0.9348	67.25
25.5	497,723	62,415	0.1254	0.8746	62.87
26.5	428,133		0.0000	1.0000	54.98
27.5	312,603	8,673	0.0277	0.9723	54.98
28.5	241,647	17,595	0.0728	0.9272	53.46
29.5	235,281		0.0000	1.0000	49.56
30.5	280,168		0.0000	1.0000	49.56
31.5	280,168	57,666	0.2058	0.7942	49.56
32.5	222,502	2,887	0.0130	0.9870	39.36
33.5	140,599	3,932	0.0280	0.9720	38.85
34.5	136,159	7,170	0.0527	0.9473	37.77
35.5	183,946		0.0000	1.0000	35.78
36.5	183,946	7,008	0.0381	0.9619	35.78
37.5	176,938		0.0000	1.0000	34.41
38.5	127,299	8,408	0.0660	0.9340	34.41

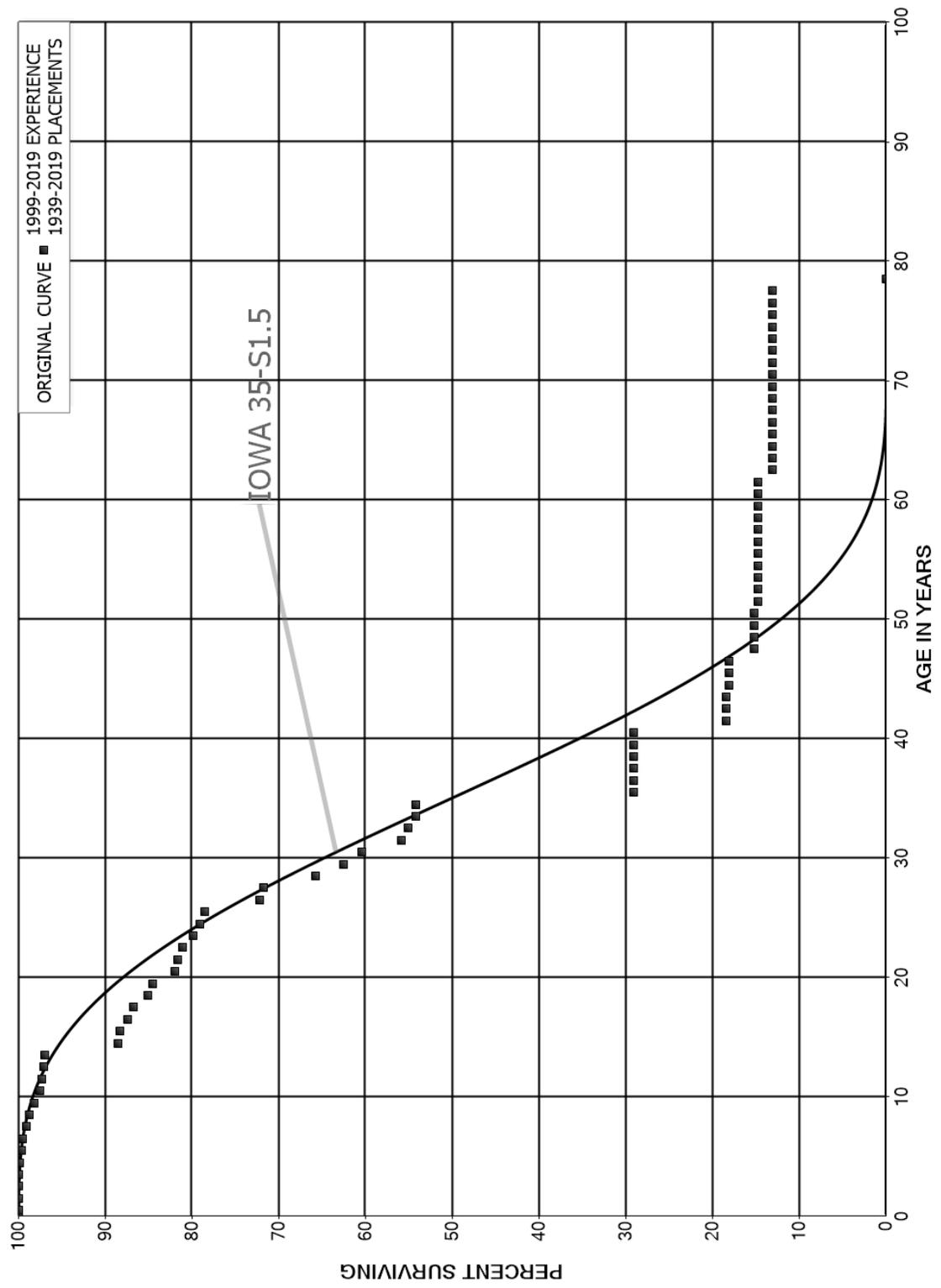
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1960-2019			EXPERIENCE BAND 1999-2019		
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	128,004	9,910	0.0774	0.9226	32.14
40.5	140,361	56,891	0.4053	0.5947	29.65
41.5	83,470		0.0000	1.0000	17.63
42.5	83,470	6,122	0.0733	0.9267	17.63
43.5	28,842		0.0000	1.0000	16.34
44.5	28,842		0.0000	1.0000	16.34
45.5	28,842	860	0.0298	0.9702	16.34
46.5	27,983		0.0000	1.0000	15.85
47.5	21,408		0.0000	1.0000	15.85
48.5	5,141		0.0000	1.0000	15.85
49.5	5,141	2,187	0.4255	0.5745	15.85
50.5	2,953	2,953	1.0000		9.11
51.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 380.00 TREATMENT EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1939-2019

EXPERIENCE BAND 1999-2019

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	52,484,979		0.0000	1.0000	100.00
0.5	52,338,297		0.0000	1.0000	100.00
1.5	64,377,580	1,853	0.0000	1.0000	100.00
2.5	61,280,085	2,456	0.0000	1.0000	100.00
3.5	56,645,719	97,216	0.0017	0.9983	99.99
4.5	44,542,853	95,360	0.0021	0.9979	99.82
5.5	39,192,994	29,279	0.0007	0.9993	99.61
6.5	37,993,990	195,343	0.0051	0.9949	99.53
7.5	37,038,634	104,008	0.0028	0.9972	99.02
8.5	38,046,057	237,211	0.0062	0.9938	98.74
9.5	28,856,102	179,693	0.0062	0.9938	98.13
10.5	11,015,164	26,343	0.0024	0.9976	97.52
11.5	15,100,040	30,352	0.0020	0.9980	97.28
12.5	16,280,292	28,816	0.0018	0.9982	97.09
13.5	16,807,417	1,468,058	0.0873	0.9127	96.92
14.5	14,676,816	22,218	0.0015	0.9985	88.45
15.5	11,808,330	121,942	0.0103	0.9897	88.32
16.5	11,627,778	92,492	0.0080	0.9920	87.41
17.5	12,550,432	231,211	0.0184	0.9816	86.71
18.5	10,724,551	78,054	0.0073	0.9927	85.11
19.5	10,812,422	322,982	0.0299	0.9701	84.49
20.5	9,468,414	37,906	0.0040	0.9960	81.97
21.5	9,609,732	62,020	0.0065	0.9935	81.64
22.5	9,543,450	153,592	0.0161	0.9839	81.11
23.5	9,334,263	87,607	0.0094	0.9906	79.81
24.5	9,070,811	59,133	0.0065	0.9935	79.06
25.5	8,792,217	707,485	0.0805	0.9195	78.54
26.5	4,703,706	32,521	0.0069	0.9931	72.22
27.5	4,778,474	397,707	0.0832	0.9168	71.72
28.5	6,059,797	298,086	0.0492	0.9508	65.75
29.5	6,184,153	215,062	0.0348	0.9652	62.52
30.5	5,152,304	387,965	0.0753	0.9247	60.35
31.5	5,356,247	72,674	0.0136	0.9864	55.80
32.5	3,421,800	52,448	0.0153	0.9847	55.05
33.5	2,753,091		0.0000	1.0000	54.20
34.5	2,272,767	1,055,181	0.4643	0.5357	54.20
35.5	635,826		0.0000	1.0000	29.04
36.5	779,480		0.0000	1.0000	29.04
37.5	801,627		0.0000	1.0000	29.04
38.5	778,140		0.0000	1.0000	29.04

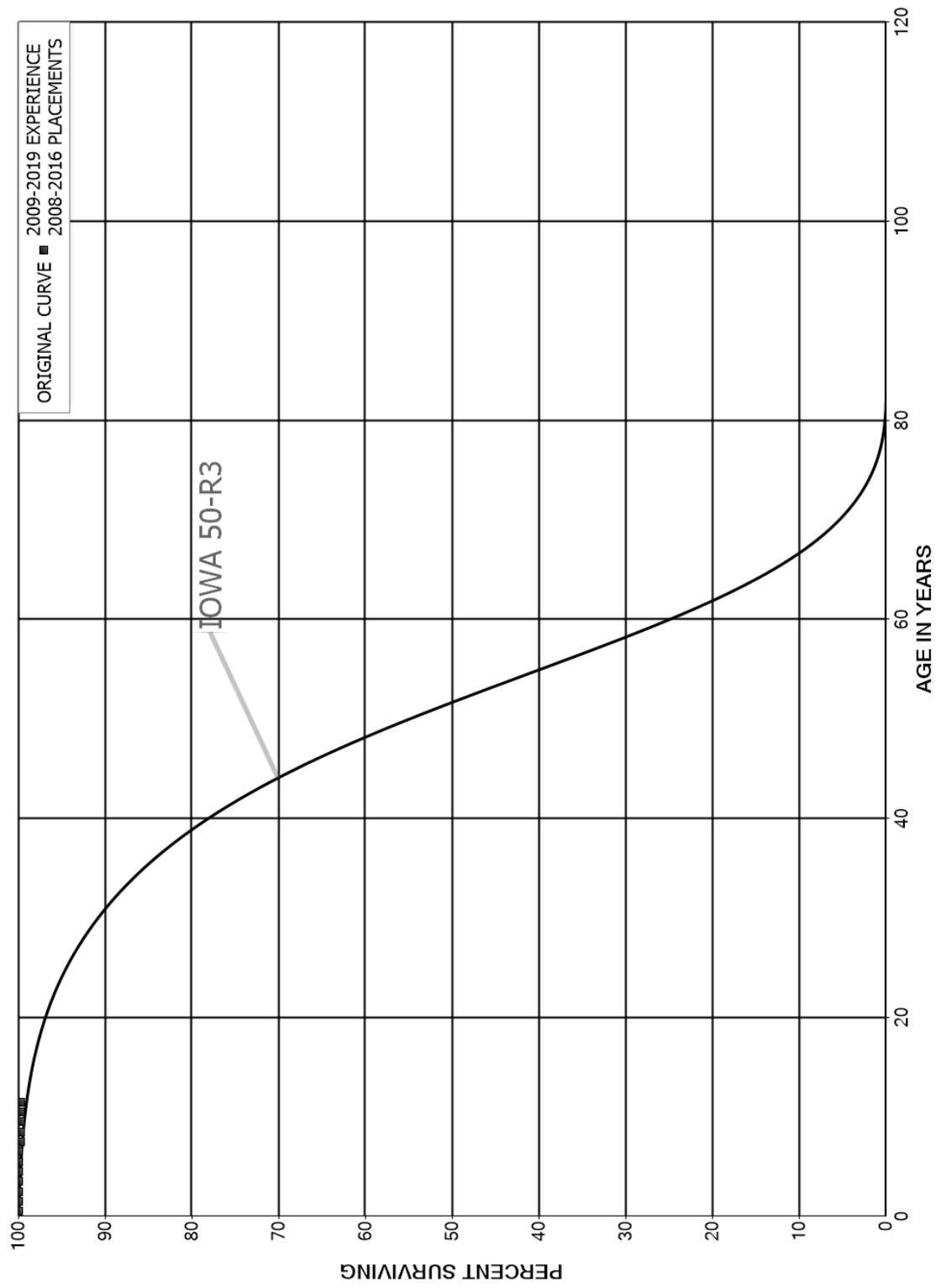
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 1999-2019			
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	778,140	411	0.0005	0.9995	29.04	
40.5	777,730	285,407	0.3670	0.6330	29.02	
41.5	15,823,498		0.0000	1.0000	18.37	
42.5	15,823,498		0.0000	1.0000	18.37	
43.5	15,823,498	268,317	0.0170	0.9830	18.37	
44.5	515,644		0.0000	1.0000	18.06	
45.5	515,644		0.0000	1.0000	18.06	
46.5	371,038	60,316	0.1626	0.8374	18.06	
47.5	288,575		0.0000	1.0000	15.12	
48.5	288,575		0.0000	1.0000	15.12	
49.5	288,575		0.0000	1.0000	15.12	
50.5	288,575	6,818	0.0236	0.9764	15.12	
51.5	281,757	315	0.0011	0.9989	14.77	
52.5	107,182		0.0000	1.0000	14.75	
53.5	107,182	462	0.0043	0.9957	14.75	
54.5	23,321		0.0000	1.0000	14.69	
55.5	23,321		0.0000	1.0000	14.69	
56.5	298,010		0.0000	1.0000	14.69	
57.5	298,010		0.0000	1.0000	14.69	
58.5	298,010		0.0000	1.0000	14.69	
59.5	25,215		0.0000	1.0000	14.69	
60.5	25,215		0.0000	1.0000	14.69	
61.5	25,215	2,761	0.1095	0.8905	14.69	
62.5	1,894		0.0000	1.0000	13.08	
63.5	1,894		0.0000	1.0000	13.08	
64.5	1,894		0.0000	1.0000	13.08	
65.5	1,894		0.0000	1.0000	13.08	
66.5	1,894		0.0000	1.0000	13.08	
67.5	1,894		0.0000	1.0000	13.08	
68.5	1,894		0.0000	1.0000	13.08	
69.5	1,894		0.0000	1.0000	13.08	
70.5	1,894		0.0000	1.0000	13.08	
71.5	1,894		0.0000	1.0000	13.08	
72.5	1,894		0.0000	1.0000	13.08	
73.5	1,894		0.0000	1.0000	13.08	
74.5	1,894		0.0000	1.0000	13.08	
75.5	1,894		0.0000	1.0000	13.08	
76.5	1,894		0.0000	1.0000	13.08	
77.5	1,894	1,894	1.0000		13.08	
78.5						

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 381.00 PLANT SEWERS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



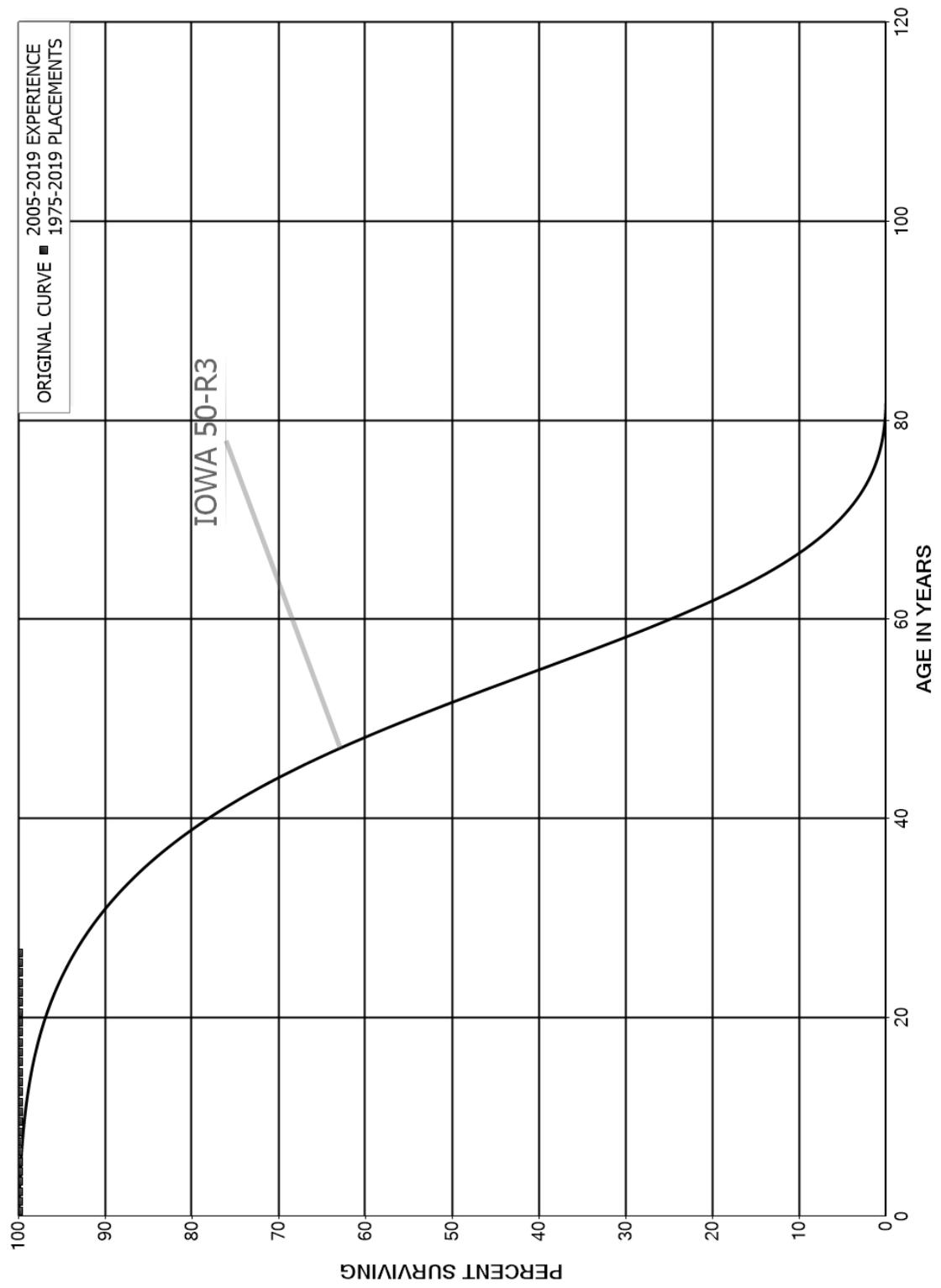
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 381.00 PLANT SEWERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2008-2016			EXPERIENCE BAND 2009-2019		
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	5,524,134		0.0000	1.0000	100.00
0.5	6,227,961		0.0000	1.0000	100.00
1.5	6,227,961		0.0000	1.0000	100.00
2.5	6,227,961		0.0000	1.0000	100.00
3.5	6,182,721		0.0000	1.0000	100.00
4.5	6,175,263		0.0000	1.0000	100.00
5.5	5,940,945		0.0000	1.0000	100.00
6.5	5,940,945	13,300	0.0022	0.9978	100.00
7.5	5,925,961	2,120	0.0004	0.9996	99.78
8.5	5,917,243		0.0000	1.0000	99.74
9.5	4,729,279		0.0000	1.0000	99.74
10.5	294,412		0.0000	1.0000	99.74
11.5					99.74

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 382.00 OUTFALL SEWER LINES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1975-2019

EXPERIENCE BAND 2005-2019

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	1,700,716		0.0000	1.0000	100.00
0.5	1,605,061		0.0000	1.0000	100.00
1.5	360,675		0.0000	1.0000	100.00
2.5	355,425		0.0000	1.0000	100.00
3.5	355,425		0.0000	1.0000	100.00
4.5	355,425		0.0000	1.0000	100.00
5.5	255,003		0.0000	1.0000	100.00
6.5	264,243		0.0000	1.0000	100.00
7.5	265,939		0.0000	1.0000	100.00
8.5	265,939		0.0000	1.0000	100.00
9.5	238,111		0.0000	1.0000	100.00
10.5	212,060		0.0000	1.0000	100.00
11.5	244,789	6	0.0000	1.0000	100.00
12.5	244,783		0.0000	1.0000	100.00
13.5	43,666		0.0000	1.0000	100.00
14.5	34,425		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	202,476		0.0000	1.0000	100.00
24.5	202,476		0.0000	1.0000	100.00
25.5	202,476		0.0000	1.0000	100.00
26.5					100.00
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		

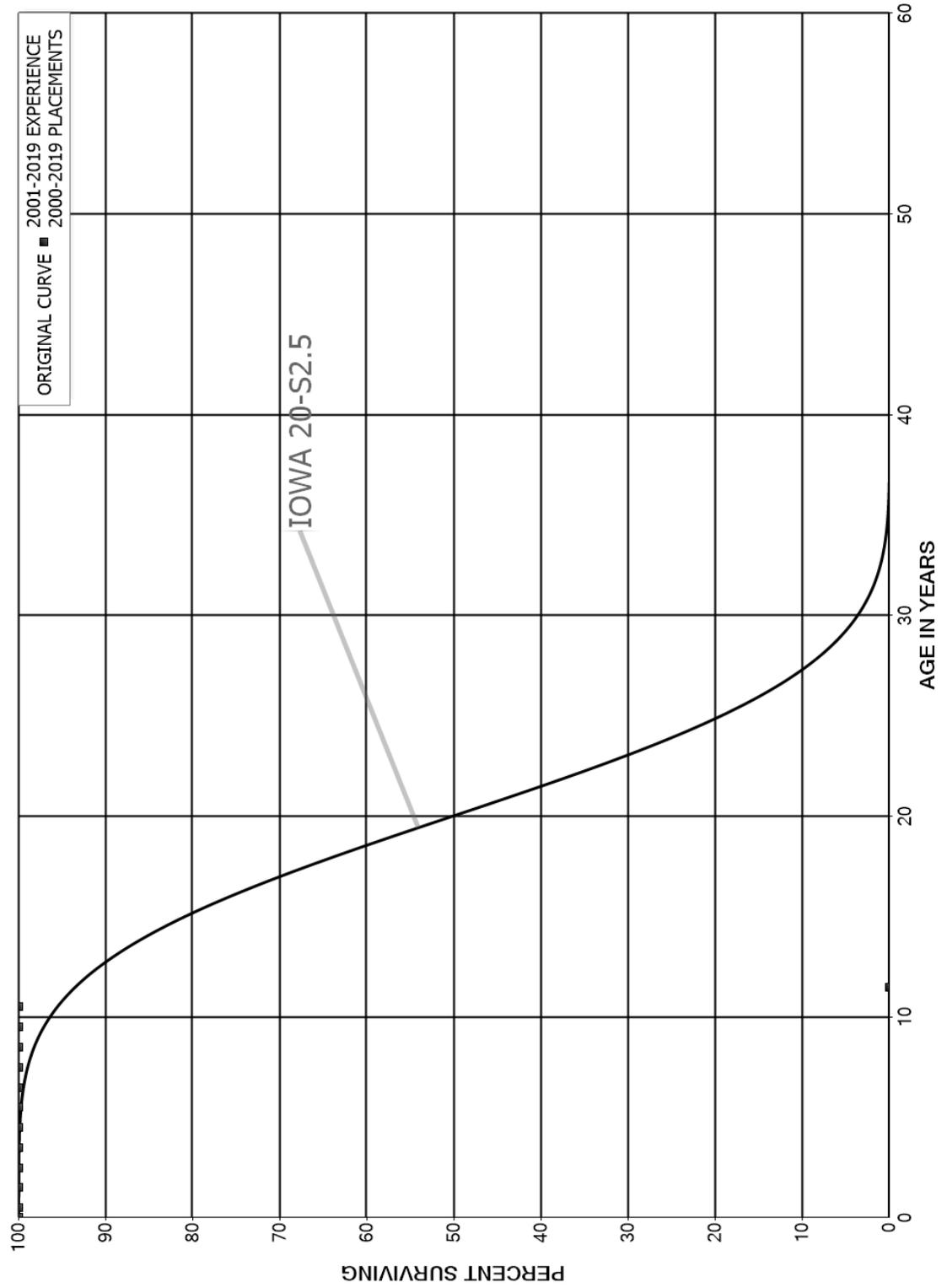
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1975-2019			EXPERIENCE BAND 2005-2019		
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	4,984		0.0000		
42.5	4,984		0.0000		
43.5	4,984		0.0000		
44.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



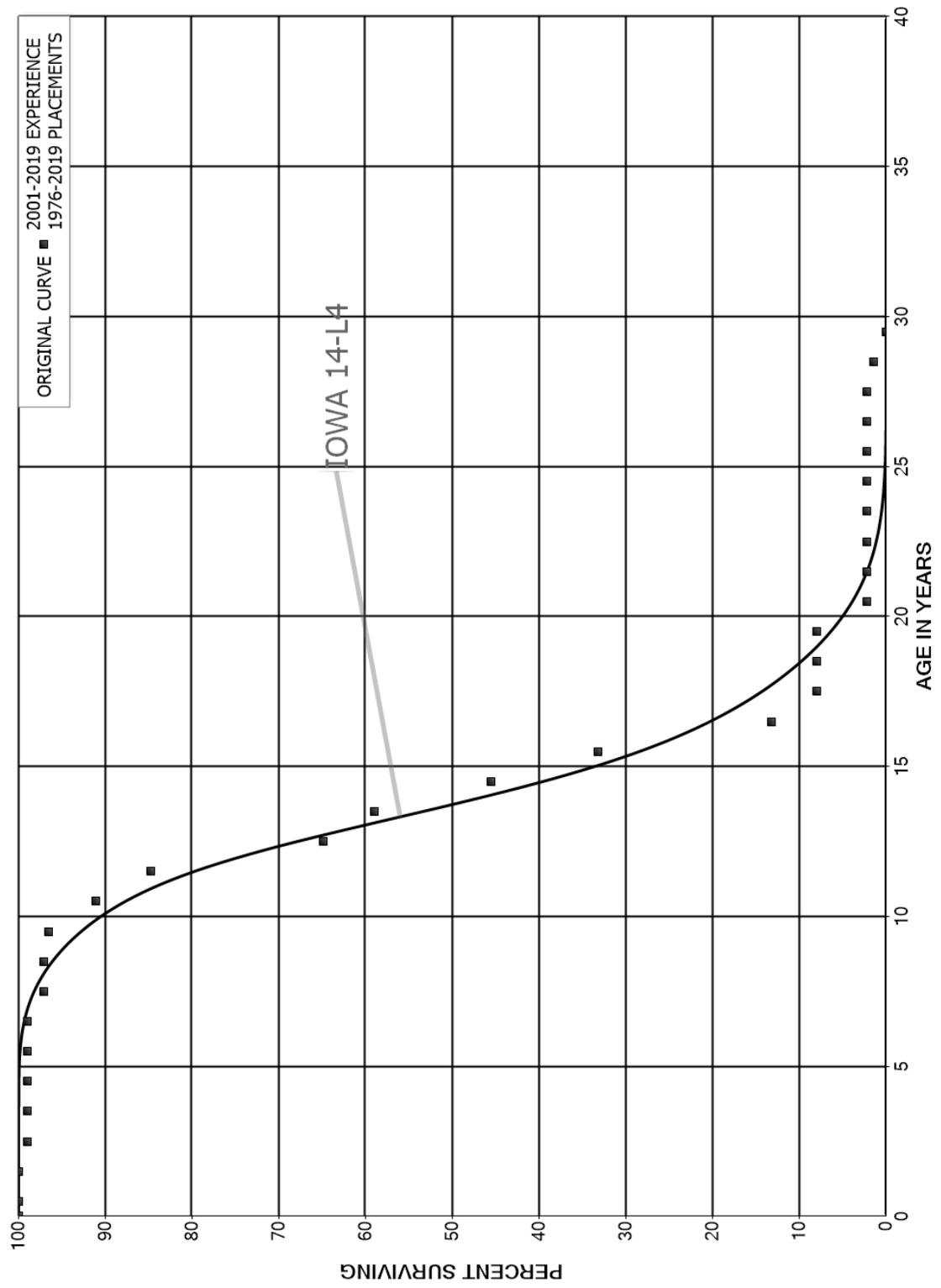
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 2000-2019			EXPERIENCE BAND 2001-2019		
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	737,756		0.0000	1.0000	100.00
0.5	437,340		0.0000	1.0000	100.00
1.5	405,165		0.0000	1.0000	100.00
2.5	4,547,918		0.0000	1.0000	100.00
3.5	4,547,918		0.0000	1.0000	100.00
4.5	4,547,918	2,997	0.0007	0.9993	100.00
5.5	4,544,921		0.0000	1.0000	99.93
6.5	393,353		0.0000	1.0000	99.93
7.5	393,353		0.0000	1.0000	99.93
8.5	281,642		0.0000	1.0000	99.93
9.5	8,492		0.0000	1.0000	99.93
10.5	8,492	8,492	1.0000		99.93
11.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 391.00 TRANSPORTATION EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



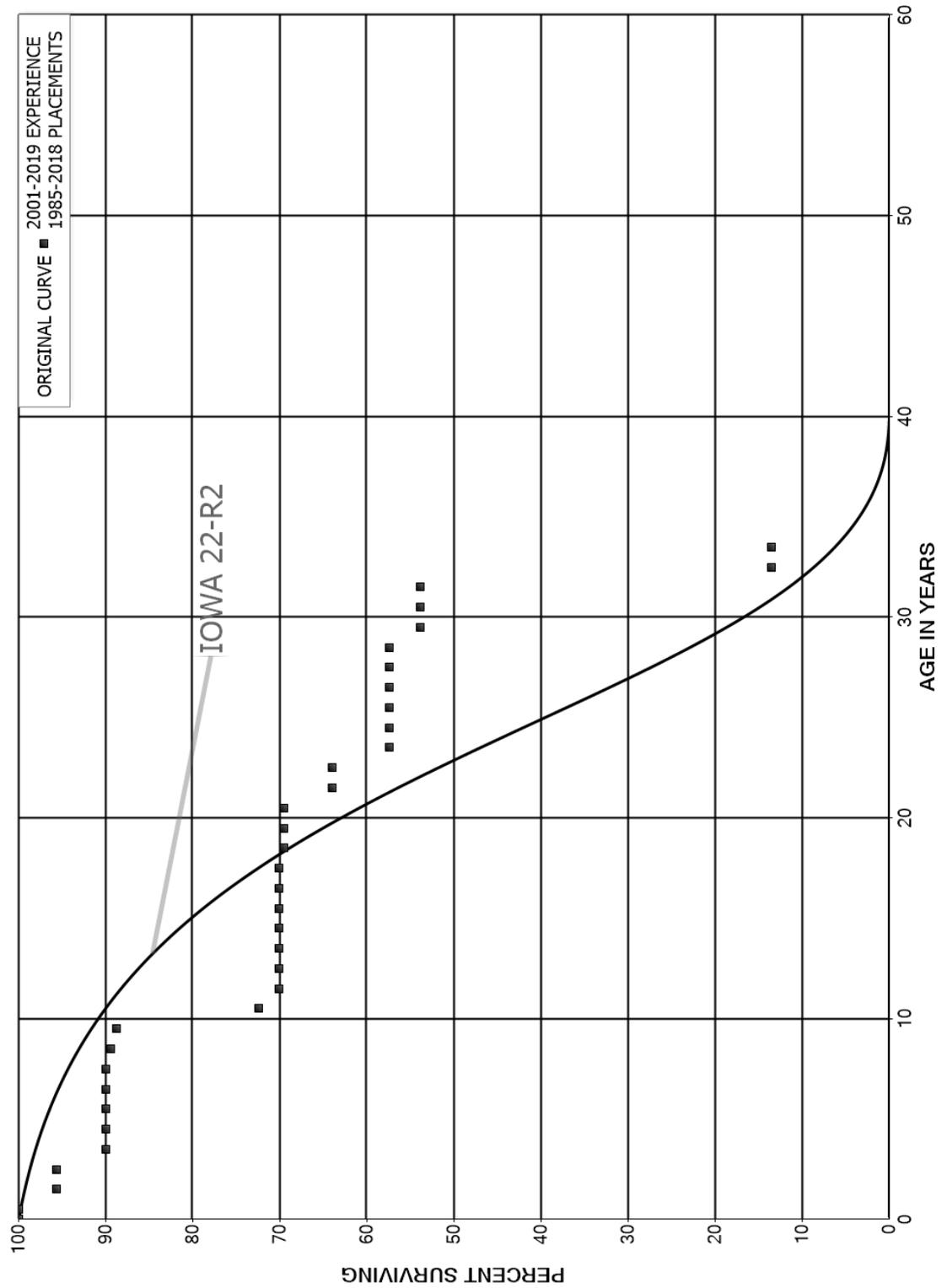
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1976-2019			EXPERIENCE BAND 2001-2019		
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	4,168,919		0.0000	1.0000	100.00
0.5	3,692,372		0.0000	1.0000	100.00
1.5	1,458,511	14,523	0.0100	0.9900	100.00
2.5	2,332,879		0.0000	1.0000	99.00
3.5	2,514,168		0.0000	1.0000	99.00
4.5	1,930,107		0.0000	1.0000	99.00
5.5	1,664,209		0.0000	1.0000	99.00
6.5	1,677,203	32,676	0.0195	0.9805	99.00
7.5	1,535,566		0.0000	1.0000	97.08
8.5	1,373,777	8,793	0.0064	0.9936	97.08
9.5	1,545,830	87,008	0.0563	0.9437	96.45
10.5	879,899	61,030	0.0694	0.9306	91.03
11.5	743,329	174,600	0.2349	0.7651	84.71
12.5	440,822	40,215	0.0912	0.9088	64.81
13.5	348,542	79,500	0.2281	0.7719	58.90
14.5	276,542	75,000	0.2712	0.7288	45.47
15.5	195,354	117,872	0.6034	0.3966	33.14
16.5	51,900	20,700	0.3988	0.6012	13.14
17.5	31,200		0.0000	1.0000	7.90
18.5	32,855		0.0000	1.0000	7.90
19.5	32,855	23,700	0.7214	0.2786	7.90
20.5	9,155		0.0000	1.0000	2.20
21.5	9,155		0.0000	1.0000	2.20
22.5	9,155		0.0000	1.0000	2.20
23.5	9,155		0.0000	1.0000	2.20
24.5	14,155		0.0000	1.0000	2.20
25.5	14,155		0.0000	1.0000	2.20
26.5	14,155		0.0000	1.0000	2.20
27.5	14,155	5,000	0.3532	0.6468	2.20
28.5	9,155	9,155	1.0000		1.42
29.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 395.00 POWER OPERATED EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1985-2018			EXPERIENCE BAND 2001-2019		
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	192,967		0.0000	1.0000	100.00
0.5	192,967	8,551	0.0443	0.9557	100.00
1.5	127,706		0.0000	1.0000	95.57
2.5	255,380	14,864	0.0582	0.9418	95.57
3.5	324,176		0.0000	1.0000	90.01
4.5	885,603		0.0000	1.0000	90.01
5.5	967,489		0.0000	1.0000	90.01
6.5	1,410,131		0.0000	1.0000	90.01
7.5	1,250,710	8,033	0.0064	0.9936	90.01
8.5	871,073	6,988	0.0080	0.9920	89.43
9.5	536,633	98,717	0.1840	0.8160	88.71
10.5	191,853	6,125	0.0319	0.9681	72.39
11.5	137,458		0.0000	1.0000	70.08
12.5	190,308		0.0000	1.0000	70.08
13.5	169,091		0.0000	1.0000	70.08
14.5	169,091		0.0000	1.0000	70.08
15.5	169,587		0.0000	1.0000	70.08
16.5	190,470		0.0000	1.0000	70.08
17.5	117,685	875	0.0074	0.9926	70.08
18.5	116,810		0.0000	1.0000	69.56
19.5	116,810		0.0000	1.0000	69.56
20.5	124,335	9,999	0.0804	0.9196	69.56
21.5	124,336		0.0000	1.0000	63.97
22.5	124,336	12,782	0.1028	0.8972	63.97
23.5	111,554		0.0000	1.0000	57.39
24.5	111,554		0.0000	1.0000	57.39
25.5	111,554		0.0000	1.0000	57.39
26.5	18,021		0.0000	1.0000	57.39
27.5	8,021		0.0000	1.0000	57.39
28.5	8,021	496	0.0618	0.9382	57.39
29.5	30,053		0.0000	1.0000	53.84
30.5	30,053		0.0000	1.0000	53.84
31.5	30,053	22,528	0.7496	0.2504	53.84
32.5	7,525		0.0000	1.0000	13.48
33.5					13.48

**PART VII. DETAILED DEPRECIATION
CALCULATIONS**

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	DEPRECIATED ORIGINAL COST		CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
			AMOUNT (2)	- (3) (4)		
1952						0.0
1953						0.0
1955	20,582,302	15,619,540	4,962,762		4,962,762	2.9
1959	68,761,142	52,170,409	16,590,733		21,553,495	12.4
1960	13,229,263	12,427,710	801,553		22,355,048	12.9
1962	11,645,534	8,175,009	3,470,525		25,825,573	14.9
1963	28,839,583	20,304,852	8,534,731		34,360,304	19.8
1968	664,353	537,793	126,560		34,486,864	19.8
1970	59,800	47,586	12,214		34,499,078	19.8
1975	32,877,629	27,140,576	5,737,053		40,236,131	23.1
1976	37,155,360	21,509,820	15,645,540		55,881,671	32.1
1980	311,504	164,439	147,065		56,028,736	32.2
1984	223,341	108,773	114,568		56,143,304	32.3
1989	22,693,294	9,887,890	12,805,404		68,948,708	39.7
1990	115,357	71,127	44,230		68,992,938	39.7
1991	77,122	55,048	22,074		69,015,012	39.7
1995	131,179	69,277	61,902		69,076,914	39.7
1999	12,061,359	4,000,956	8,060,403		77,137,317	44.4
2000	104,564	47,524	57,040		77,194,357	44.4
2001	1,802,345	934,848	867,497		78,061,854	44.9
2002	84,939	45,276	39,663		78,101,517	44.9
2003	107,528	64,552	42,976		78,144,493	44.9
2004	411,062	191,653	219,409		78,363,902	45.1
2005	68,544	30,372	38,172		78,402,074	45.1
2006	59,185	28,164	31,021		78,433,095	45.1
2007	4,715,792	1,112,313	3,603,479		82,036,574	47.2
2008	4,020,780	1,074,487	2,946,293		84,982,867	48.9
2009	9,693,288	1,834,010	7,859,278		92,842,145	53.4
2010	8,888,135	2,316,770	6,571,365		99,413,510	57.2
2011	3,713,440	657,175	3,056,265		102,469,775	58.9
2012	2,309,446	738,640	1,570,806		104,040,581	59.8
2013	820,588	247,533	573,055		104,613,636	60.2
2014	27,648,283	5,551,303	22,096,980		126,710,616	72.9
2015	18,299,322	3,534,143	14,765,179		141,475,795	81.4
2016	379,287	77,823	301,464		141,777,259	81.5
2017	291,048	62,462	228,586		142,005,845	81.7
2018	620,516	53,205	567,311		142,573,156	82.0
2019	14,484,568	424,350	14,060,218		156,633,374	90.1
2020	17,427,031	200,653	17,226,378		173,859,752	100.0
SUBTOTAL	365,377,813	191,518,061	173,859,752			
NONDEPRECIABLE	1,110,000		1,110,000			
TOTAL	366,487,813	191,518,061	174,969,752			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	2,280,063.47	1,765,681	1,987,369	292,694	17.62	16,611
1968	664,353.09	477,803	537,793	126,560	20.50	6,174
1970	59,799.75	42,278	47,586	12,214	20.93	584
1990	89,334.74	47,133	53,051	36,284	27.31	1,329
1995	131,179.13	61,549	69,277	61,902	28.85	2,146
2000	104,563.69	42,223	47,524	57,040	30.26	1,885
2004	243,350.29	83,907	94,442	148,908	31.35	4,750
2005	52,519.48	17,342	19,519	33,000	31.45	1,049
2011	7,126.65	1,598	1,799	5,328	32.87	162
2013	142,276.56	26,250	29,546	112,731	33.15	3,401
2014	10,468,815.90	1,708,511	1,923,022	8,545,794	33.34	256,323
2015	27,504.71	3,873	4,359	23,146	33.56	690
2018	79,215.71	5,466	6,152	73,064	33.73	2,166
2020	586,857.47	8,685	9,776	577,082	33.40	17,278
	14,936,960.64	4,292,299	4,831,215	10,105,746		314,548
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						32.1 2.11

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	10,524,275.05	8,149,999	10,076,089	448,186	17.62	25,436
1975	17,880,202.57	11,958,279	14,784,380	3,095,823	22.53	137,409
2001	235,837.16	91,976	113,713	122,124	30.50	4,004
2008	402,619.96	112,734	139,376	263,244	32.14	8,191
2009	11,477.40	3,009	3,720	7,757	32.36	240
2010	4,705,519.03	1,146,264	1,417,161	3,288,358	32.60	100,870
2011	392,345.97	87,964	108,753	283,593	32.87	8,628
2012	258,489.27	52,939	65,450	193,039	33.00	5,850
2014	16,604,691.38	2,709,886	3,350,313	13,254,378	33.34	397,552
2018	20,363.39	1,405	1,737	18,626	33.73	552
2019	85,511.88	3,660	4,525	80,987	33.59	2,411
2020	2,090,642.54	30,942	38,255	2,052,388	33.40	61,449
	53,211,975.60	24,349,057	30,103,472	23,108,504		752,592
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						30.7 1.41

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	19,976.75	13,848	12,194	7,783	13.06	596
2002	19,113.75	10,008	8,813	10,301	16.83	612
2004	37,243.13	18,003	15,853	21,390	17.63	1,213
2012	398,079.91	115,722	101,902	296,178	20.74	14,281
2015	422,790.84	84,643	74,534	348,257	21.97	15,851
2020	112,498.11	2,317	2,040	110,458	23.83	4,635
	1,009,702.49	244,541	215,336	794,366		37,188
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.4 3.68

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 75-R3						
NET SALVAGE PERCENT.. 0						
2015	1,446,609.01	120,937	91,579	1,355,030	60.29	22,475
2019	31,469.03	736	557	30,912	62.60	494
2020	335,220.07	2,648	2,005	333,215	62.79	5,307
	1,813,298.11	124,321	94,141	1,719,157		28,276
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						60.8 1.56

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1955	20,582,302.43	15,099,177	15,619,540	4,962,762	23.79	208,607
1959	57,950,106.96	40,628,820	42,029,010	15,921,097	26.22	607,212
1960	116,938.81	81,366	84,170	32,769	26.45	1,239
1962	11,645,534.35	7,902,660	8,175,009	3,470,525	27.71	125,244
1963	27,020,165.20	18,022,450	18,643,558	8,376,607	28.71	291,766
1976	35,939,093.36	19,831,192	20,514,634	15,424,459	36.15	426,679
1980	311,504.44	158,961	164,439	147,065	38.87	3,784
1984	223,341.17	105,149	108,773	114,568	41.02	2,793
1989	22,137,144.06	9,204,625	9,521,844	12,615,300	44.26	285,027
1999	10,833,136.88	3,214,192	3,324,963	7,508,174	50.96	147,335
2007	4,253,546.15	820,934	849,226	3,404,320	56.43	60,328
2008	2,159,841.08	388,771	402,169	1,757,672	56.94	30,869
2009	9,148,431.64	1,525,958	1,578,547	7,569,885	57.46	131,742
2010	3,554,237.56	544,865	563,643	2,990,595	57.99	51,571
2011	3,038,390.02	424,159	438,776	2,599,614	58.53	44,415
2016	11,639.17	807	835	10,804	60.44	179
2018	181,179.36	7,157	7,404	173,775	60.79	2,859
2019	13,092,873.66	318,157	329,121	12,763,753	60.23	211,917
2020	12,527,280.62	107,735	111,448	12,415,833	57.98	214,140
	234,726,686.92	118,387,135	122,467,109	112,259,578		2,847,706
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						39.4 1.21

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S2.5						
NET SALVAGE PERCENT.. 0						
1959	10,811,035.08	9,707,228	10,141,399	669,636	6.99	95,799
1963	1,819,417.77	1,590,171	1,661,294	158,124	8.29	19,074
1976	1,216,266.22	952,580	995,186	221,080	12.32	17,945
1989	556,150.03	350,375	366,046	190,104	18.50	10,276
1999	169,439.40	77,603	81,074	88,365	25.45	3,472
2008	221,695.23	60,700	63,415	158,280	33.16	4,773
2011	56,507.63	11,810	12,338	44,170	35.95	1,229
2018	35,749.05	1,973	2,061	33,688	42.75	788
2019	341,943.40	11,353	11,861	330,082	43.75	7,545
2020	138,000.00	1,518	1,586	136,414	44.75	3,048
	15,366,203.81	12,765,311	13,336,260	2,029,944		163,949
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.4 1.07

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-L2.5						
NET SALVAGE PERCENT.. 0						
1960	34,668.83	34,669	34,669			
2008	91,182.72	66,217	40,507	50,676	4.71	10,759
2010	5,997.31	4,005	2,450	3,547	5.22	680
2011	24,727.41	15,551	9,513	15,214	5.61	2,712
2013	175,978.36	93,585	57,249	118,729	6.60	17,989
2015	40,642.36	16,676	10,201	30,441	7.90	3,853
2016	57,410.23	19,657	12,025	45,385	8.64	5,253
2019	128,382.91	15,290	9,354	119,029	11.09	10,733
	558,990.13	265,650	175,968	383,022		51,979

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.4 9.30

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	57,145.18	42,985	42,854	14,291	9.72	1,470
2002	44,831.14	25,957	25,878	18,953	13.45	1,409
2004	103,580.38	55,716	55,546	48,034	14.17	3,390
2005	8,447.47	4,347	4,334	4,113	14.62	281
2006	47,672.44	23,436	23,365	24,307	15.00	1,620
2007	12,588.57	5,896	5,878	6,711	15.32	438
2008	4,929.41	2,181	2,174	2,755	15.75	175
2009	412,655.77	171,789	171,266	241,390	16.12	14,975
2010	102,635.65	39,874	39,753	62,883	16.53	3,804
2011	126,266.84	45,456	45,318	80,949	16.89	4,793
2012	1,461,830.85	482,112	480,645	981,186	17.27	56,814
2013	387,003.09	115,250	114,899	272,104	17.69	15,382
2014	69,950.84	18,460	18,404	51,547	18.13	2,843
2015	3,768,780.10	862,297	859,674	2,909,106	18.54	156,910
2016	243,927.48	46,883	46,740	197,187	18.92	10,422
2017	84,718.79	12,987	12,948	71,771	19.33	3,713
2018	93,193.70	10,484	10,452	82,742	19.72	4,196
2019	318,006.15	22,070	22,003	296,003	20.10	14,727
2020	949,642.58	22,791	22,722	926,921	20.38	45,482
	8,297,806.43	2,010,971	2,004,853	6,292,954		342,844
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					18.4	4.13

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S1.5						
NET SALVAGE PERCENT.. 0						
1960	273,316.62	262,931	245,413	27,904	2.39	11,675
1975	14,997,426.20	13,238,228	12,356,196	2,641,230	6.05	436,567
1990	26,022.23	19,366	18,076	7,946	10.48	758
1999	1,058,782.35	637,387	594,919	463,863	14.21	32,643
2001	1,566,507.69	879,751	821,135	745,373	15.22	48,973
2002	20,993.69	11,341	10,585	10,409	15.75	661
2003	81,947.00	42,449	39,621	42,326	16.28	2,600
2006	11,512.55	5,142	4,799	6,714	17.97	374
2007	294,861.97	124,196	115,921	178,941	18.55	9,646
2008	1,128,245.89	445,657	415,964	712,282	19.15	37,195
2010	10,738.88	3,643	3,400	7,339	20.46	359
2012	7,847.06	2,194	2,048	5,799	21.90	265
2013	49,303.89	12,277	11,459	37,845	22.62	1,673
2014	22,890.88	4,970	4,639	18,252	23.44	779
2015	11,429,049.71	2,118,946	1,977,766	9,451,284	24.17	391,034
2016	22,982.63	3,507	3,273	19,710	25.00	788
2018	5,335.95	456	426	4,910	26.74	184
2019	32,958.15	1,694	1,581	31,377	27.66	1,134
2020	406,989.68	7,000	6,534	400,456	28.57	14,017
	31,447,713.02	17,821,135	16,633,755	14,813,958		991,325
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.9 3.15

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2020	45,000.00	531	450	44,550	41.87	1,064
	45,000.00	531	450	44,550		1,064
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						41.9 2.36

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2005	7,577.02	5,872	6,519	1,058	4.50	235
2009	32,371.63	18,614	20,664	11,708	8.50	1,377
2010	16,786.48	8,813	9,783	7,003	9.50	737
2013	29,977.26	11,241	12,479	17,498	12.50	1,400
2015	5,309.81	1,460	1,621	3,689	14.50	254
2016	8,708.04	1,959	2,175	6,533	15.50	421
2017	105,131.15	18,398	20,424	84,707	16.50	5,134
2018	4,072.60	509	565	3,508	17.50	200
2019	214,600.73	16,095	17,867	196,734	18.50	10,634
2020	46,980.00	1,174	1,303	45,677	19.50	2,342
	471,514.72	84,135	93,400	378,115		22,734

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.6 4.82

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 14-L4						
NET SALVAGE PERCENT.. 0						
2003	25,581.36	23,010	24,931	650	1.96	332
2004	26,888.14	23,823	25,812	1,076	2.12	508
2007	154,794.96	130,399	141,288	13,507	2.53	5,339
2008	12,265.49	10,043	10,882	1,383	2.77	499
2009	23,189.06	18,162	19,679	3,510	3.18	1,104
2010	8,206.63	6,049	6,554	1,653	3.75	441
2011	22,172.79	15,124	16,387	5,786	4.43	1,306
2013	20,696.46	11,532	12,495	8,201	5.96	1,376
2014	481,934.34	235,280	254,925	227,009	6.81	33,335
2015	69,362.46	28,799	31,204	38,158	7.75	4,924
2016	34,619.20	11,791	12,775	21,844	8.71	2,508
2017	101,198.46	26,848	29,090	72,108	9.69	7,441
2018	25,671.24	4,865	5,271	20,400	10.69	1,908
2019	205,074.11	23,317	25,264	179,810	11.69	15,382
	1,211,654.70	569,042	616,557	595,097		76,403

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.8 6.31

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2015	7,450.89	2,049	1,782	5,669	14.50	391
2018	159,464.53	19,933	17,331	142,134	17.50	8,122
2019	21,839.72	1,638	1,424	20,416	18.50	1,104
2020	164,430.00	4,111	3,575	160,855	19.50	8,249
	353,185.14	27,731	24,112	329,073		17,866
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.4 5.06

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2010	61,264.39	42,885	28,556	32,708	4.50	7,268
2015	18,226.62	6,683	4,450	13,777	9.50	1,450
2018	16,270.55	2,712	1,806	14,465	12.50	1,157
2019	11,908.19	1,191	793	11,116	13.50	823
	107,669.75	53,471	35,605	72,065		10,698
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						6.7 9.94

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 22-R2						
NET SALVAGE PERCENT.. 0						
2009	65,163.00	33,794	40,134	25,029	10.67	2,346
2010	412,276.19	199,129	236,487	175,789	11.24	15,640
2011	45,902.54	20,454	24,291	21,612	11.82	1,828
2012	183,198.71	74,599	88,595	94,604	12.38	7,642
2015	7,815.84	2,206	2,620	5,196	13.99	371
	714,356.28	330,182	392,127	322,230		27,827
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						11.6 3.90

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2010	10,472.81	7,331	8,983	1,490	4.50	331
2013	15,352.54	7,676	9,406	5,947	7.50	793
2015	1,055,779.23	387,123	474,353	581,426	9.50	61,203
2020	23,490.00	783	959	22,531	14.50	1,554
	1,105,094.58	402,913	493,701	611,394		63,881
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.6 5.78

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

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

EXPERIENCED AND ESTIMATED 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		62.37		62.37-
355.00	3,187.39			
361.10		1,753.32-		1,753.32
389.10		3,678.20		3,678.20-
	3,187.39	1,987.25		1,987.25-
2019 TRANSACTION YEAR				
354.30	66,016.96			
354.40	60,486.88	2,728.82		2,728.82-
360.10	3,403.50	2,367.76		2,367.76-
361.10		900,329.51		900,329.51-
361.20		60,342.93		60,342.93-
371.00	429.89	23,928.05		23,928.05-
380.00	291,843.01	275.53		275.53-
390.00	4,008.24	9,975.61		9,975.61-
391.00	8,792.82	2,818.43		2,818.43-
393.00		326.90		326.90-
394.00		640.50		640.50-
395.00	37,549.11			
	472,530.41	1,003,734.04		1,003,734.04-
2020 TRANSACTION YEAR				
354.30	59,605.70			
354.40	212,341.52	10,617.08		10,617.08-
355.00	11,426.16			
360.10	34,047.49	23,833.24		23,833.24-
361.10	503,937.31			
361.20	9,141.08			
371.00	96,452.91	77,162.33		77,162.33-
380.00	45,907.50			
390.00	16,460.78			
393.00	22,693.85			
394.00	12,015.30			
396.00	6,078.99			
	1,030,108.59	111,612.65		111,612.65-
TOTAL	1,505,826.39	1,117,333.94		1,117,333.94-

EXHIBIT NO. 11-AA - DEPRECIATION STUDY

WASTEWATER CSS MCKEESPORT OPERATIONS

AS OF DECEMBER 31, 2021

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

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS MCKEESPORT OPERATIONS

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WASTEWATER PLANT

AS OF DECEMBER 31, 2021

Prepared by:



Gannett Fleming

*Excellence Delivered **As Promised***

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

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER CSS MCKEESPORT OPERATIONS

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2021

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2021. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020". 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

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2021. Table 1 sets forth the development of the net original cost by account as of December 31, 2021. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2021, 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, 2021. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2021. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2017 through 2021.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-6. 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 2017 through 2021, beginning on pages III-2 and III-3.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2021 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2021 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	15,401,686.42				15,401,686.42
354.40 STRUCTURES AND IMPROVEMENTS - TDP	54,867,531.70				54,867,531.70
355.00 POWER GENERATION EQUIPMENT	1,009,702.49				1,009,702.49
360.10 COLLECTION SEWERS - FORCE MAINS	2,134,629.25				2,134,629.25
361.10 COLLECTION SEWERS - GRAVITY MAINS	237,618,667.14				237,618,667.14
361.20 MANHOLES	15,499,015.09				15,499,015.09
364.00 FLOW MEASURING DEVICES	558,990.13				558,990.13
371.00 PUMPING EQUIPMENT	8,297,806.43				8,297,806.43
380.00 TREATMENT EQUIPMENT	31,447,713.02				31,447,713.02
382.00 OUTFALL SEWER LINES	45,000.00				45,000.00
390.00 OFFICE FURNITURE AND EQUIPMENT	518,494.72				518,494.72
391.00 TRANSPORTATION EQUIPMENT	1,211,654.70				1,211,654.70
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	517,615.14				517,615.14
394.00 LABORATORY EQUIPMENT	107,669.75				107,669.75
395.00 POWER OPERATED EQUIPMENT	714,356.28				714,356.28
396.00 COMMUNICATION EQUIPMENT	1,128,584.58				1,128,584.58
TOTAL DEPRECIABLE PLANT	371,079,116.84	0.00	0.00	0.00	371,079,116.84
NONDEPRECIABLE PLANT					
353.30 LAND AND LAND RIGHTS - SPP	1,110,000.00				1,110,000.00
TOTAL NONDEPRECIABLE PLANT	1,110,000.00	0.00	0.00	0.00	1,110,000.00
TOTAL UTILITY PLANT	372,189,116.84	0.00	0.00	0.00	372,189,116.84

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2021

	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(6)/(3)	(8)
	DEPRECIABLE GROUP	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT		COMPOSITE REMAINING LIFE
		(2)	(3)	(4)	(5)	(6)	(7)=(6)/(3)	(8)
DEPRECIABLE PLANT								
354.30	STRUCTURES AND IMPROVEMENTS - SPP	55-S0	15,401,686.42	5,121,660	10,280,027	321,201	2.09	32.0
354.40	STRUCTURES AND IMPROVEMENTS - TDP	55-S0	54,867,531.70	30,758,916	24,108,616	787,348	1.43	30.6
355.00	POWER GENERATION EQUIPMENT	35-S0.5	1,009,702.49	252,493	757,209	36,058	3.57	21.0
360.10	COLLECTION SEWERS - FORCE MAINS	75-R3	2,134,629.25	96,175	2,038,454	33,579	1.57	60.7
361.10	COLLECTION SEWERS - GRAVITY MAINS	80-R2.5	237,618,667.14	125,323,535	112,295,132	2,834,160	1.19	39.6
361.20	MANHOLES	50-S2.5	15,499,015.09	13,508,172	1,990,843	151,298	0.98	13.2
364.00	FLOW MEASURING DEVICES	15-L2.5	558,990.13	227,954	331,036	47,653	8.52	6.9
371.00	PUMPING EQUIPMENT	30-S0.5	8,297,806.43	2,367,770	5,930,036	329,772	3.97	18.0
380.00	TREATMENT EQUIPMENT	35-S1.5	31,447,713.02	17,625,149	13,822,564	922,367	2.93	15.0
382.00	OUTFALL SEWER LINES	50-R3	45,000.00	1,512	43,488	1,045	2.32	41.6
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	518,494.72	119,232	399,263	24,939	4.81	16.0
391.00	TRANSPORTATION EQUIPMENT	14-L4	1,211,654.70	693,577	518,078	73,666	6.08	7.0
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	517,615.14	46,127	471,488	26,080	5.04	18.1
394.00	LABORATORY EQUIPMENT	15-SQ	107,669.75	46,435	61,235	10,655	9.90	5.7
395.00	POWER OPERATED EQUIPMENT	22-R2	714,356.28	419,987	294,370	26,725	3.74	11.0
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,128,584.58	558,241	570,343	65,467	5.80	8.7
	TOTAL DEPRECIABLE PLANT		371,079,116.84	197,166,935	173,912,182	5,692,013	1.53	30.6
NONDEPRECIABLE AND ACCOUNTS NOT STUDIED								
353.30	LAND AND LAND RIGHTS - SPP		1,110,000.00					
	TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED		1,110,000.00			227,232		
AMORTIZATION OF NET SALVAGE								
	TOTAL UTILITY PLANT		372,189,116.84	197,166,935	173,912,182	5,919,245		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2021, OF BOOK RESERVE AS OF DECEMBER 31, 2020

ACCOUNT (1)	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2020 (2)	+	PROJECTED DEPRECIATION ACCRUALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	+	TRANSFERS (8)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (9)
354.30	4,831,215		318,877		28,432										5,121,660
354.40	30,103,472		761,795		101,286		5,064								30,758,916
355.00	215,336		37,157												252,493
360.10	94,141		35,454		19,659		13,761								96,175
361.10	122,467,109		3,033,357		176,930										125,323,535
361.20	13,336,260		177,101		5,189										13,508,172
364.00	175,968		51,986												227,954
371.00	2,004,853		362,917										736		2,367,770
380.00	16,633,755		990,658												17,625,149
382.00	450		1,062												1,512
389.10	0		736												0
390.00	93,400		25,832												119,232
391.00	616,557		77,019												693,577
393.00	24,112		22,015												46,127
394.00	35,605		10,830												46,435
395.00	392,127		27,860												419,987
396.00	493,701		64,540												558,241
TOTAL	191,518,060		5,999,196		331,496		18,826		0		0		0		197,166,935

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2020 (2)	NET ORIGINAL COST AS OF 12/31/2021 (3)	ACCRUAL RATE (4)	DEPRECIATION ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.30	14,936,960.64	15,401,686.42	2.11	318,877		318,877
354.40	53,211,975.60	54,867,531.70	1.41	759,113	2,682	761,795
355.00	1,009,702.49	1,009,702.49	3.68	37,157		37,157
360.10	1,813,298.11	2,134,629.25	1.56	30,214	5,240	35,454
361.10	234,726,686.92	237,618,667.14	1.21	2,853,642	179,715	3,033,357
361.20	15,366,203.81	15,499,015.09	1.07	165,032	12,069	177,101
364.00	558,990.13	558,990.13	9.30	51,986		51,986
371.00	8,297,806.43	8,297,806.43	4.13	342,699	20,218	362,917
380.00	31,447,713.02	31,447,713.02	3.15	990,603	55	990,658
382.00	45,000.00	45,000.00	2.36	1,062		1,062
389.10	0.00	0.00	0.00	0	736	736
390.00	471,514.72	518,494.72	4.82	23,837	1,995	25,832
391.00	1,211,654.70	1,211,654.70	6.31	76,455	564	77,019
393.00	353,185.14	517,615.14	5.06	21,950	65	22,015
394.00	107,669.75	107,669.75	9.94	10,702	128	10,830
395.00	714,356.28	714,356.28	3.90	27,860		27,860
396.00	1,105,094.58	1,128,584.58	5.78	64,540		64,540
TOTAL	365,377,812.32	371,079,116.84		5,775,729	223,467	5,999,196

* Total accruals shown are based on average monthly balances.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2017		2018		2019		PROJECTED 2020		PROJECTED 2021		NET SALVAGE (12)*	SALVAGE ACCURAL (13)=(12)/5
	GROSS SALVAGE (2)	COST OF REMOVAL (3)	GROSS SALVAGE (4)	COST OF REMOVAL (5)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	GROSS SALVAGE (8)	COST OF REMOVAL (9)	GROSS SALVAGE (10)	COST OF REMOVAL (11)		
354.40			62		2,729		10,617				(18,473)	(3,695)
360.10					2,368		23,833			5,064	(39,962)	(7,992)
361.10			(1,753)		900,330					13,761	(898,576)	(179,715)
361.20					60,343						(60,343)	(12,069)
371.00					23,928		77,162				(101,090)	(20,218)
389.10			3,678		276						(276)	(55)
390.00					9,976						(3,678)	(736)
391.00					2,818						(9,976)	(1,995)
393.00					327						(2,818)	(564)
394.00					641						(327)	(65)
TOTAL	0	0	1,987	1,987	1,003,734	0	111,613	0	0	18,826	(1,136,160)	(227,232)

* Column (12) equals the summation of Columns (2) through (11).

PART II. DETAILED DEPRECIATION CALCULATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	DEPRECIATED ORIGINAL COST		CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
			(2)	(3)		
1952						0.0
1953						0.0
1955	20,559,661	15,796,829	4,762,832		4,762,832	2.7
1959	68,697,941	52,777,960	15,919,981		20,682,813	11.9
1960	13,181,780	12,406,707	775,073		21,457,886	12.3
1962	11,634,425	8,285,295	3,349,130		24,807,016	14.3
1963	28,813,730	20,756,039	8,057,691		32,864,707	18.9
1968	661,197	540,341	120,856		32,985,563	19.0
1970	59,524	47,856	11,668		32,997,231	19.0
1975	32,829,263	27,618,475	5,210,788		38,208,019	22.0
1976	37,129,079	21,935,493	15,193,586		53,401,605	30.7
1980	311,296	169,423	141,873		53,543,478	30.8
1984	223,204	111,512	111,692		53,655,170	30.9
1989	22,681,092	10,183,655	12,497,437		66,152,607	38.0
1990	115,075	72,739	42,336		66,194,943	38.1
1991	77,122	58,088	19,034		66,213,977	38.1
1995	130,816	70,864	59,952		66,273,929	38.1
1999	12,056,491	4,189,082	7,867,409		74,141,338	42.6
2000	104,316	49,115	55,201		74,196,539	42.7
2001	1,801,996	991,254	810,742		75,007,281	43.1
2002	84,939	48,405	36,534		75,043,815	43.2
2003	107,528	67,640	39,888		75,083,703	43.2
2004	410,569	201,292	209,277		75,292,980	43.3
2005	68,442	31,828	36,614		75,329,594	43.3
2006	59,185	30,484	28,701		75,358,295	43.3
2007	4,714,173	1,194,201	3,519,972		78,878,267	45.4
2008	4,019,556	1,169,118	2,850,438		81,728,705	47.0
2009	9,689,945	1,990,545	7,699,400		89,428,105	51.4
2010	8,882,474	2,494,102	6,388,372		95,816,477	55.1
2011	3,712,019	724,021	2,987,998		98,804,475	56.8
2012	2,309,236	828,428	1,480,808		100,285,283	57.7
2013	820,420	291,965	528,455		100,813,738	58.0
2014	27,625,670	6,237,595	21,388,075		122,201,813	70.3
2015	18,280,297	4,187,406	14,092,891		136,294,704	78.4
2016	379,283	98,287	280,996		136,575,700	78.5
2017	291,048	79,890	211,158		136,786,858	78.7
2018	620,409	76,234	544,175		137,331,033	79.0

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT		DEPRECIATED ORIGINAL COST	
			(2)	(3)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
2019	14,480,632	699,682	13,780,950		151,111,983	86.9
2020	17,422,482	578,205	16,844,277		167,956,260	96.6
2021	6,032,801	76,881	5,955,920		173,912,180	100.0
SUBTOTAL	371,079,116	197,166,936	173,912,180			
NONDEPRECIABLE	1,110,000		1,110,000			
TOTAL	372,189,116	197,166,936	175,022,180			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	2,267,928.59	1,771,252	1,989,411	278,518	17.24	16,155
1968	661,196.93	481,087	540,341	120,856	20.03	6,034
1970	59,524.48	42,608	47,856	11,668	20.45	571
1990	89,053.13	47,964	53,872	35,181	26.98	1,304
1995	130,815.92	63,093	70,864	59,952	28.45	2,107
2000	104,316.11	43,729	49,115	55,201	29.78	1,854
2004	242,857.75	87,550	98,333	144,525	31.04	4,656
2005	52,417.54	18,074	20,300	32,118	31.35	1,024
2011	7,116.81	1,734	1,948	5,169	32.60	159
2013	142,107.93	29,104	32,689	109,419	33.00	3,316
2014	10,457,820.70	1,929,468	2,167,114	8,290,707	33.15	250,097
2015	27,478.80	4,485	5,037	22,442	33.34	673
2018	79,169.32	7,458	8,377	70,792	33.67	2,103
2020	586,724.87	25,112	28,205	558,520	33.59	16,628
2021	493,157.54	7,299	8,198	484,960	33.40	14,520
	15,401,686.42	4,560,017	5,121,660	10,280,027		321,201
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.0						2.09

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	10,489,043.41	8,191,943	10,044,274	444,769	17.24	25,799
1975	17,831,837.12	12,106,034	14,843,405	2,988,432	21.99	135,900
2001	235,488.61	95,090	116,591	118,898	30.26	3,929
2008	402,186.79	119,449	146,458	255,729	31.95	8,004
2009	11,465.71	3,210	3,936	7,530	32.14	234
2010	4,701,105.98	1,232,630	1,511,348	3,189,758	32.36	98,571
2011	391,993.81	95,490	117,082	274,912	32.60	8,433
2012	258,279.55	57,906	70,999	187,281	32.87	5,698
2014	16,593,073.02	3,061,422	3,753,660	12,839,413	33.15	387,313
2018	20,356.29	1,918	2,352	18,004	33.67	535
2019	85,487.18	5,899	7,233	78,254	33.73	2,320
2020	2,090,371.77	89,468	109,698	1,980,674	33.59	58,966
2021	1,756,842.46	26,001	31,880	1,724,962	33.40	51,646
	54,867,531.70	25,086,460	30,758,916	24,108,616		787,348
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						30.6 1.43

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	19,976.75	14,136	13,003	6,974	12.60	553
2002	19,113.75	10,362	9,531	9,583	16.47	582
2004	37,243.13	18,771	17,266	19,977	17.22	1,160
2012	398,079.91	126,669	116,515	281,565	20.35	13,836
2015	422,790.84	97,834	89,991	332,800	21.59	15,415
2020	112,498.11	6,727	6,187	106,311	23.56	4,512
	1,009,702.49	274,499	252,493	757,209		36,058
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.0 3.57

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 75-R3						
NET SALVAGE PERCENT.. 0						
2015	1,427,610.41	140,191	88,748	1,338,862	59.72	22,419
2019	31,381.32	1,208	765	30,616	62.44	490
2020	334,647.45	7,831	4,957	329,690	62.60	5,267
2021	340,990.07	2,694	1,705	339,285	62.79	5,403
	2,134,629.25	151,924	96,175	2,038,454		33,579
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						60.7 1.57

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1955	20,559,660.65	15,177,141	15,796,829	4,762,832	23.59	201,900
1959	57,891,319.22	40,882,850	42,552,113	15,339,206	26.00	589,969
1960	116,822.90	81,905	85,249	31,574	26.22	1,204
1962	11,634,425.45	7,960,274	8,285,295	3,349,130	27.46	121,964
1963	26,994,896.27	18,318,737	19,066,698	7,928,198	27.71	286,113
1976	35,912,978.23	20,096,903	20,917,467	14,995,511	35.80	418,869
1980	311,296.19	162,777	169,423	141,873	37.87	3,746
1984	223,203.97	107,138	111,512	111,692	40.62	2,750
1989	22,124,965.87	9,420,810	9,805,466	12,319,500	43.83	281,075
1999	10,828,271.01	3,337,273	3,473,535	7,354,736	50.50	145,638
2007	4,251,927.24	881,850	917,856	3,334,071	55.43	60,149
2008	2,159,050.85	416,697	433,711	1,725,340	56.43	30,575
2009	9,145,099.46	1,646,118	1,713,330	7,431,769	56.94	130,519
2010	3,552,989.69	592,639	616,837	2,936,153	57.46	51,099
2011	3,037,330.85	465,623	484,635	2,552,696	57.99	44,020
2016	11,635.56	973	1,013	10,623	60.29	176
2018	181,125.48	9,817	10,218	170,907	61.02	2,801
2019	13,089,049.69	517,017	538,126	12,550,924	60.79	206,464
2020	12,523,707.97	304,326	316,752	12,206,956	60.23	202,672
2021	3,068,910.59	26,393	27,470	3,041,440	57.98	52,457
	237,618,667.14	120,407,261	125,323,535	112,295,132		2,834,160
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						39.6 1.19

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S2.5						
NET SALVAGE PERCENT.. 0						
1959	10,806,621.36	9,725,959	10,225,847	580,774	6.94	83,685
1963	1,818,834.21	1,606,758	1,689,341	129,493	7.72	16,774
1976	1,216,100.99	968,260	1,018,026	198,075	11.65	17,002
1989	556,126.16	359,702	378,189	177,937	17.75	10,025
1999	169,437.50	80,822	84,976	84,462	24.67	3,424
2008	221,694.84	65,533	68,901	152,794	32.16	4,751
2011	56,507.58	13,053	13,724	42,784	34.95	1,224
2018	35,749.05	2,767	2,909	32,840	41.75	787
2019	341,943.40	18,875	19,846	322,097	42.75	7,534
2020	138,000.00	4,582	4,817	133,183	43.75	3,044
2021	138,000.00	1,518	1,596	136,404	44.75	3,048
	15,499,015.09	12,847,829	13,508,172	1,990,843		151,298
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.2 0.98

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-L2.5						
NET SALVAGE PERCENT.. 0						
1960	34,668.83	34,669	34,669			
2008	91,182.72	68,196	50,764	40,419	4.55	8,883
2010	5,997.31	4,201	3,127	2,870	4.92	583
2011	24,727.41	16,513	12,292	12,435	5.22	2,382
2013	175,978.36	102,771	76,501	99,477	6.06	16,415
2015	40,642.36	19,232	14,316	26,326	7.24	3,636
2016	57,410.23	23,555	17,534	39,876	7.90	5,048
2019	128,382.91	25,189	18,751	109,632	10.24	10,706
	558,990.13	294,326	227,954	331,036		47,653

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.9 8.52

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	57,145.18	43,750	45,085	12,060	9.34	1,291
2002	44,831.14	26,751	27,567	17,264	13.18	1,310
2004	103,580.38	57,819	59,584	43,996	13.85	3,177
2005	8,447.47	4,544	4,683	3,764	14.17	266
2006	47,672.44	24,532	25,281	22,391	14.62	1,532
2007	12,588.57	6,189	6,378	6,211	15.00	414
2008	4,929.41	2,309	2,379	2,550	15.32	166
2009	412,655.77	182,600	188,173	224,483	15.75	14,253
2010	102,635.65	42,727	44,031	58,605	16.12	3,636
2011	126,266.84	49,055	50,552	75,715	16.53	4,580
2012	1,461,830.85	526,259	542,321	919,510	16.89	54,441
2013	387,003.09	127,634	131,530	255,473	17.27	14,793
2014	69,950.84	20,831	21,467	48,484	17.69	2,741
2015	3,768,780.10	994,581	1,024,937	2,743,843	18.13	151,343
2016	243,927.48	55,811	57,514	186,413	18.54	10,055
2017	84,718.79	16,283	16,780	67,939	18.92	3,591
2018	93,193.70	14,287	14,723	78,471	19.33	4,060
2019	318,006.15	35,776	36,868	281,138	19.72	14,256
2020	949,642.58	65,905	67,917	881,726	20.10	43,867
	8,297,806.43	2,297,643	2,367,770	5,930,036		329,772
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.0 3.97

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S1.5						
NET SALVAGE PERCENT.. 0						
1960	273,316.62	263,915	253,104	20,213	2.19	9,230
1975	14,997,426.20	13,320,714	12,775,070	2,222,356	5.85	379,890
1990	26,022.23	19,673	18,867	7,155	10.17	704
1999	1,058,782.35	657,504	630,571	428,211	13.73	31,188
2001	1,566,507.69	912,021	874,663	691,845	14.71	47,032
2002	20,993.69	11,790	11,307	9,687	15.22	636
2003	81,947.00	44,268	42,455	39,492	15.75	2,507
2006	11,512.55	5,425	5,203	6,310	17.39	363
2007	294,861.97	131,685	126,291	168,571	17.97	9,381
2008	1,128,245.89	475,217	455,751	672,495	18.55	36,253
2010	10,738.88	3,939	3,778	6,961	19.85	351
2012	7,847.06	2,430	2,330	5,517	21.17	261
2013	49,303.89	13,785	13,220	36,084	21.90	1,648
2014	22,890.88	5,700	5,467	17,424	22.62	770
2015	11,429,049.71	2,481,247	2,379,610	9,049,440	23.44	386,068
2016	22,982.63	4,261	4,086	18,897	24.17	782
2018	5,335.95	637	611	4,725	25.82	183
2019	32,958.15	2,818	2,703	30,255	26.74	1,131
2020	406,989.68	20,919	20,062	386,928	27.66	13,989
	31,447,713.02	18,377,948	17,625,149	13,822,564		922,367
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						15.0 2.93

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2020	45,000.00	1,566	1,512	43,488	41.60	1,045
	45,000.00	1,566	1,512	43,488		1,045
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						41.6 2.32

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2005	7,577.02	6,251	6,845	732	3.50	209
2009	32,371.63	20,232	22,154	10,218	7.50	1,362
2010	16,786.48	9,652	10,569	6,217	8.50	731
2013	29,977.26	12,740	13,950	16,027	11.50	1,394
2015	5,309.81	1,726	1,890	3,420	13.50	253
2016	8,708.04	2,395	2,623	6,085	14.50	420
2017	105,131.15	23,655	25,902	79,229	15.50	5,112
2018	4,072.60	713	781	3,292	16.50	200
2019	214,600.73	26,825	29,374	185,227	17.50	10,584
2020	46,980.00	3,524	3,859	43,121	18.50	2,331
2021	46,980.00	1,174	1,285	45,695	19.50	2,343
	518,494.72	108,887	119,232	399,263		24,939
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.0						4.81

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 14-L4						
NET SALVAGE PERCENT.. 0						
2003	25,581.36	23,330	25,185	396	1.78	222
2004	26,888.14	24,186	26,109	779	1.96	397
2007	154,794.96	133,093	143,676	11,119	2.36	4,711
2008	12,265.49	10,332	11,154	1,111	2.53	439
2009	23,189.06	18,987	20,497	2,692	2.77	972
2010	8,206.63	6,427	6,938	1,269	3.18	399
2011	22,172.79	16,344	17,644	4,529	3.75	1,208
2013	20,696.46	12,877	13,901	6,795	5.16	1,317
2014	481,934.34	268,534	289,887	192,047	5.96	32,223
2015	69,362.46	33,863	36,556	32,806	6.81	4,817
2016	34,619.20	14,374	15,517	19,102	7.75	2,465
2017	101,198.46	34,468	37,208	63,990	8.71	7,347
2018	25,671.24	6,811	7,353	18,318	9.69	1,890
2019	205,074.11	38,862	41,952	163,122	10.69	15,259
	1,211,654.70	642,488	693,577	518,078		73,666

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.0 6.08

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2015	7,450.89	2,422	2,257	5,194	13.50	385
2018	159,464.53	27,906	26,004	133,461	16.50	8,089
2019	21,839.72	2,730	2,544	19,296	17.50	1,103
2020	164,430.00	12,332	11,491	152,939	18.50	8,267
2021	164,430.00	4,111	3,831	160,599	19.50	8,236
	517,615.14	49,501	46,127	471,488		26,080
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						18.1 5.04

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2010	61,264.39	46,970	35,962	25,302	3.50	7,229
2015	18,226.62	7,898	6,047	12,180	8.50	1,433
2018	16,270.55	3,796	2,906	13,365	11.50	1,162
2019	11,908.19	1,985	1,520	10,388	12.50	831
	107,669.75	60,649	46,435	61,235		10,655
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						5.7 9.90

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 22-R2						
NET SALVAGE PERCENT.. 0						
2009	65,163.00	36,003	42,455	22,708	10.12	2,244
2010	412,276.19	213,806	252,123	160,153	10.67	15,010
2011	45,902.54	22,171	26,144	19,759	11.24	1,758
2012	183,198.71	81,633	96,263	86,936	11.82	7,355
2015	7,815.84	2,545	3,002	4,814	13.46	358
	714,356.28	356,158	419,987	294,370		26,725
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 11.0						3.74

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2010	10,472.81	8,029	9,389	1,084	3.50	310
2013	15,352.54	8,700	10,174	5,179	6.50	797
2015	1,055,779.23	457,501	535,015	520,764	8.50	61,266
2020	23,490.00	2,349	2,747	20,743	13.50	1,537
2021	23,490.00	783	916	22,574	14.50	1,557
	1,128,584.58	477,362	558,241	570,343		65,467
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.7 5.80

PART III. EXPERIENCED AND ESTIMATED NET SALVAGE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

EXPERIENCED AND ESTIMATED 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		62.37		62.37-
355.00	3,187.39			
361.10		1,753.32-		1,753.32
389.10		3,678.20		3,678.20-
	3,187.39	1,987.25		1,987.25-
2019 TRANSACTION YEAR				
354.30	66,016.96			
354.40	60,486.88	2,728.82		2,728.82-
360.10	3,403.50	2,367.76		2,367.76-
361.10		900,329.51		900,329.51-
361.20		60,342.93		60,342.93-
371.00	429.89	23,928.05		23,928.05-
380.00	291,843.01	275.53		275.53-
390.00	4,008.24	9,975.61		9,975.61-
391.00	8,792.82	2,818.43		2,818.43-
393.00		326.90		326.90-
394.00		640.50		640.50-
395.00	37,549.11			
	472,530.41	1,003,734.04		1,003,734.04-
2020 TRANSACTION YEAR				
354.30	59,605.70			
354.40	212,341.52	10,617.08		10,617.08-
355.00	11,426.16			
360.10	34,047.49	23,833.24		23,833.24-
361.10	503,937.31			
361.20	9,141.08			
371.00	96,452.91	77,162.33		77,162.33-
380.00	45,907.50			
390.00	16,460.78			
393.00	22,693.85			
394.00	12,015.30			
396.00	6,078.99			
	1,030,108.59	111,612.65		111,612.65-

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

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

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2021 TRANSACTION YEAR				
354.30	28,431.76			
354.40	101,286.36	5,064.32		5,064.32-
360.10	19,658.93	13,761.25		13,761.25-
361.10	176,930.37			
361.20	5,188.72			
	331,496.14	18,825.57		18,825.57-
TOTAL	1,837,322.53	1,136,159.51		1,136,159.51-

EXHIBIT NO. 11-AB - DEPRECIATION STUDY

WASTEWATER CSS MCKEESPORT OPERATIONS

AS OF DECEMBER 31, 2022

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

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS MCKEESPORT OPERATIONS

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WASTEWATER PLANT

AS OF DECEMBER 31, 2022

Prepared by:



Gannett Fleming

*Excellence Delivered **As Promised***

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

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER CSS MCKEESPORT OPERATIONS

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2022

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2022. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020". 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

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. RESULTS OF STUDY

**PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS**

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2022. Table 1 sets forth the development of the net original cost by account as of December 31, 2022. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2022, 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, 2022. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2022. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2018 through 2022.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-6. 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 2018 through 2022, beginning on pages III-2 and III-3.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2022

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2022 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2022 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	15,866,547.47				15,866,547.47
354.40 STRUCTURES AND IMPROVEMENTS - TDP	56,523,569.72				56,523,569.72
355.00 POWER GENERATION EQUIPMENT	1,009,702.49				1,009,702.49
360.10 COLLECTION SEWERS - FORCE MAINS	2,480,879.79				2,480,879.79
361.10 COLLECTION SEWERS - GRAVITY MAINS	240,734,921.93				240,734,921.93
361.20 MANHOLES	15,561,433.07				15,561,433.07
364.00 FLOW MEASURING DEVICES	558,990.13				558,990.13
371.00 PUMPING EQUIPMENT	8,297,806.43				8,297,806.43
380.00 TREATMENT EQUIPMENT	31,447,713.02				31,447,713.02
382.00 OUTFALL SEWER LINES	45,000.00				45,000.00
390.00 OFFICE FURNITURE AND EQUIPMENT	565,474.72				565,474.72
391.00 TRANSPORTATION EQUIPMENT	1,211,654.70				1,211,654.70
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	682,045.14				682,045.14
394.00 LABORATORY EQUIPMENT	107,669.75				107,669.75
395.00 POWER OPERATED EQUIPMENT	714,356.28				714,356.28
396.00 COMMUNICATION EQUIPMENT	1,152,074.58				1,152,074.58
TOTAL DEPRECIABLE PLANT	376,959,839.22	0.00	0.00	0.00	376,959,839.22
NONDEPRECIABLE PLANT					
353.30 LAND AND LAND RIGHTS - SPP	1,110,000.00				1,110,000.00
TOTAL NONDEPRECIABLE PLANT	1,110,000.00	0.00	0.00	0.00	1,110,000.00
TOTAL UTILITY PLANT	378,069,839.22	0.00	0.00	0.00	378,069,839.22

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2022

	DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2022 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL		COMPOSITE REMAINING LIFE (8)
						ACCRUAL AMOUNT (6)	ACCURUAL RATE (7)=(6)/(3)	
DEPRECIABLE PLANT								
354.30	STRUCTURES AND IMPROVEMENTS - SPP	55-S0	15,866,547.47	5,418,931	10,447,617	327,093	2.06	31.9
354.40	STRUCTURES AND IMPROVEMENTS - TDP	55-S0	56,523,569.72	31,450,324	25,073,246	816,795	1.45	30.7
355.00	POWER GENERATION EQUIPMENT	35-S0.5	1,009,702.49	288,540	721,163	34,975	3.46	20.6
360.10	COLLECTION SEWERS - FORCE MAINS	75-R3	2,480,879.79	103,541	2,377,338	39,366	1.59	60.4
361.10	COLLECTION SEWERS - GRAVITY MAINS	80-R2.5	240,734,921.93	128,152,757	112,582,165	2,850,187	1.18	39.5
361.20	MANHOLES	50-S2.5	15,561,433.07	13,669,814	1,891,619	136,240	0.88	13.9
364.00	FLOW MEASURING DEVICES	15-L2.5	558,990.13	275,580	283,410	43,245	7.74	6.6
371.00	PUMPING EQUIPMENT	30-S0.5	8,297,806.43	2,717,411	5,580,395	317,388	3.82	17.6
380.00	TREATMENT EQUIPMENT	35-S1.5	31,447,713.02	18,547,358	12,900,355	874,820	2.78	14.7
382.00	OUTFALL SEWER LINES	50-R3	45,000.00	2,556	42,444	1,036	2.30	41.0
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	565,474.72	147,274	418,200	27,107	4.79	15.4
391.00	TRANSPORTATION EQUIPMENT	14-L4	1,211,654.70	767,809	443,845	70,224	5.80	6.3
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	682,045.14	76,342	605,703	34,293	5.03	17.7
394.00	LABORATORY EQUIPMENT	15-SQ	107,669.75	57,222	50,447	10,671	9.91	4.7
395.00	POWER OPERATED EQUIPMENT	22-R2	714,356.28	446,703	267,653	25,592	3.58	10.5
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,152,074.58	624,367	527,708	67,034	5.82	7.9
	TOTAL DEPRECIABLE PLANT		376,959,839.22	202,746,531	174,213,308	5,676,066	1.51	30.7
NONDEPRECIABLE AND ACCOUNTS NOT STUDIED								
353.30	LAND AND LAND RIGHTS - SPP		1,110,000.00					
	TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED		1,110,000.00					
AMORTIZATION OF NET SALVAGE								
	TOTAL UTILITY PLANT		378,069,839.22	202,746,531	174,213,308	231,191		
						5,907,257		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2022, OF BOOK RESERVE AS OF DECEMBER 31, 2021

ACCOUNT (1)	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (2)	+	PROJECTED DEPRECIATION ACCURALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	+	TRANSFERS (8)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2022 (9)
354.30	5,121,660		325,568		28,296										5,418,931
354.40	30,758,916		797,253		100,804		5,040								31,450,324
355.00	252,493		36,046												288,540
360.10	360,100		96,175		21,077		14,754								103,541
361.10	125,323,535		3,018,911		189,689										128,152,757
361.20	13,508,172		164,223		2,582										13,669,814
364.00	364,000		47,626												275,580
371.00	2,367,770		349,641										736		2,717,411
380.00	17,625,149		921,473												18,547,358
382.00	1,512		1,044												2,556
389.10	0		736										(736)		0
390.00	119,232		28,042												147,274
391.00	693,577		74,233												767,809
393.00	46,127		30,215												76,342
394.00	46,435		10,787												57,222
395.00	419,987		26,717												446,703
396.00	558,241		66,126												624,367
TOTAL	197,166,935		5,941,838		342,449		19,794		0				0		202,746,531

**PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS**

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2021 (2)	NET ORIGINAL COST AS OF 12/31/2022 (3)	ACCRUAL RATE (4)	DEPRECIATION ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.30	15,401,686.42	15,866,547.47	2.09	325,568		325,568
354.40	54,867,531.70	56,523,569.72	1.43	793,558	3,695	797,253
355.00	1,009,702.49	1,009,702.49	3.57	36,046		36,046
360.10	2,134,629.25	2,480,879.79	1.57	35,204	7,992	43,196
361.10	237,618,667.14	240,734,921.93	1.19	2,839,196	179,715	3,018,911
361.20	15,499,015.09	15,561,433.07	0.98	152,154	12,069	164,223
364.00	558,990.13	558,990.13	8.52	47,626		47,626
371.00	8,297,806.43	8,297,806.43	3.97	329,423	20,218	349,641
380.00	31,447,713.02	31,447,713.02	2.93	921,418	55	921,473
382.00	45,000.00	45,000.00	2.32	1,044		1,044
389.10	0.00	0.00	0.00	0	736	736
390.00	518,494.72	565,474.72	4.81	26,047	1,995	28,042
391.00	1,211,654.70	1,211,654.70	6.08	73,669	564	74,233
393.00	517,615.14	682,045.14	5.04	30,150	65	30,215
394.00	107,669.75	107,669.75	9.90	10,659	128	10,787
395.00	714,356.28	714,356.28	3.74	26,717		26,717
396.00	1,128,584.58	1,152,074.58	5.80	66,126		66,126
TOTAL	371,079,116.84	376,959,839.22		5,714,606	227,232	5,941,838

* Total accruals shown are based on average monthly balances.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2018		2019		PROJECTED 2020		PROJECTED 2021		PROJECTED 2022		NET SALVAGE (12)*	SALVAGE ACCURAL (13)=(12)/5
	GROSS SALVAGE (2)	COST OF REMOVAL (3)	GROSS SALVAGE (4)	COST OF REMOVAL (5)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	GROSS SALVAGE (8)	COST OF REMOVAL (9)	GROSS SALVAGE (10)	COST OF REMOVAL (11)		
354.40		62		2,729		10,617		5,064		5,040	(23,513)	(4,703)
360.10				2,368		23,833		13,761		14,754	(54,716)	(10,943)
361.10		(1,753)		900,330							(898,576)	(179,715)
361.20				60,343							(60,343)	(12,069)
371.00				23,928		77,162					(101,090)	(20,218)
389.10		3,678		276							(276)	(55)
390.00				9,976							(3,678)	(736)
391.00				2,818							(9,976)	(1,995)
393.00				327							(2,818)	(564)
394.00				641							(327)	(65)
TOTAL	0	1,987	0	1,003,734	0	111,613	0	18,826	0	19,794	(1,155,953)	(231,191)

* Column (12) equals the summation of Columns (2) through (11).

PART II. DETAILED DEPRECIATION CALCULATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	DEPRECIATED ORIGINAL COST		CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
			AMOUNT (2)	- (3) (4)		
1952						0.0
1953						0.0
1955	20,535,443	15,903,266		4,632,177	4,632,177	2.7
1959	68,632,551	53,596,523		15,036,028	19,668,205	11.3
1960	13,135,728	12,426,060		709,668	20,377,873	11.7
1962	11,622,642	8,434,807		3,187,835	23,565,708	13.5
1963	28,786,306	20,951,827		7,834,479	31,400,187	18.0
1968	658,216	543,542		114,674	31,514,861	18.1
1970	59,264	47,834		11,430	31,526,291	18.1
1975	32,781,818	28,000,507		4,781,311	36,307,602	20.8
1976	37,101,268	22,444,683		14,656,585	50,964,187	29.3
1980	311,075	172,349		138,726	51,102,913	29.3
1984	223,059	113,767		109,292	51,212,205	29.4
1989	22,668,138	10,432,493		12,235,645	63,447,850	36.4
1990	114,806	74,212		40,594	63,488,444	36.4
1991	77,122	60,429		16,693	63,505,137	36.5
1995	130,466	72,479		57,987	63,563,124	36.5
1999	12,051,361	4,357,597		7,693,764	71,256,888	40.9
2000	104,076	50,459		53,617	71,310,505	40.9
2001	1,801,651	1,041,174		760,477	72,070,982	41.4
2002	84,939	51,333		33,606	72,104,588	41.4
2003	107,528	70,432		37,096	72,141,684	41.4
2004	410,087	210,518		199,569	72,341,253	41.5
2005	68,342	33,327		35,015	72,376,268	41.5
2006	59,185	32,654		26,531	72,402,799	41.6
2007	4,712,492	1,263,857		3,448,635	75,851,434	43.5
2008	4,018,274	1,259,839		2,758,435	78,609,869	45.1
2009	9,686,480	2,137,939		7,548,541	86,158,410	49.5
2010	8,876,442	2,666,774		6,209,668	92,368,078	53.0
2011	3,710,559	787,597		2,922,962	95,291,040	54.7
2012	2,309,013	913,478		1,395,535	96,686,575	55.5
2013	820,249	332,731		487,518	97,174,093	55.8
2014	27,602,141	6,901,303		20,700,838	117,874,931	67.7
2015	18,260,607	4,836,102		13,424,505	131,299,436	75.4
2016	379,279	118,252		261,027	131,560,463	75.5
2017	291,048	97,094		193,954	131,754,417	75.6
2018	620,290	98,961		521,329	132,275,746	75.9
2019	14,476,515	968,514		13,508,001	145,783,747	83.7

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT		DEPRECIATED ORIGINAL COST	
			(2)	(3)	CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
2020	17,417,140	942,871	16,474,269		162,258,016	93.1
2021	6,031,069	220,867	5,810,202		168,068,218	96.5
2022	6,223,171	78,080	6,145,091		174,213,309	100.0
SUBTOTAL	376,959,840	202,746,531	174,213,309			
NONDEPRECIABLE	1,110,000		1,110,000			
TOTAL	378,069,840	202,746,531	175,323,309			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	2,256,485.52	1,776,982	1,994,291	262,195	16.87	15,542
1968	658,216.06	484,315	543,542	114,674	19.57	5,860
1970	59,263.55	42,622	47,834	11,430	20.50	558
1990	88,783.74	48,760	54,723	34,061	26.67	1,277
1995	130,466.42	64,581	72,479	57,987	28.06	2,067
2000	104,075.85	44,961	50,459	53,617	29.58	1,813
2004	242,375.11	91,036	102,169	140,206	30.76	4,558
2005	52,317.27	18,860	21,166	31,151	31.04	1,004
2011	7,106.91	1,863	2,091	5,016	32.36	155
2013	141,937.68	31,822	35,714	106,224	32.87	3,232
2014	10,446,240.00	2,139,390	2,401,018	8,045,222	33.00	243,795
2015	27,451.02	5,065	5,684	21,767	33.15	657
2018	79,116.83	9,328	10,469	68,648	33.67	2,039
2020	586,498.72	40,468	45,417	541,082	33.73	16,042
2021	493,055.25	21,103	23,683	469,372	33.59	13,974
2022	493,157.54	7,299	8,192	484,966	33.40	14,520
	15,866,547.47	4,828,455	5,418,931	10,447,617		327,093
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						31.9 2.06

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 55-S0						
NET SALVAGE PERCENT.. 0						
1960	10,454,557.50	8,232,964	10,052,593	401,964	16.87	23,827
1975	17,784,392.05	12,164,524	14,853,096	2,931,296	21.94	133,605
2001	235,143.11	98,572	120,358	114,785	29.78	3,854
2008	401,745.53	125,827	153,637	248,109	31.80	7,802
2009	11,453.83	3,402	4,154	7,300	31.95	228
2010	4,696,401.06	1,314,992	1,605,628	3,090,773	32.14	96,166
2011	391,639.95	102,688	125,384	266,256	32.36	8,228
2012	258,056.11	62,862	76,756	181,300	32.60	5,561
2014	16,581,124.99	3,395,814	4,146,347	12,434,778	33.00	376,811
2018	20,347.23	2,399	2,929	17,418	33.67	517
2019	85,458.57	8,050	9,829	75,630	33.67	2,246
2020	2,089,788.57	144,195	176,065	1,913,724	33.73	56,737
2021	1,756,618.76	75,183	91,800	1,664,819	33.59	49,563
2022	1,756,842.46	26,001	31,748	1,725,095	33.40	51,650
	56,523,569.72	25,757,473	31,450,324	25,073,246		816,795
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						30.7 1.45

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	19,976.75	14,347	13,650	6,327	12.36	512
2002	19,113.75	10,696	10,177	8,937	16.13	554
2004	37,243.13	19,501	18,554	18,689	16.83	1,110
2012	398,079.91	137,099	130,442	267,638	19.99	13,389
2015	422,790.84	110,687	105,313	317,478	21.15	15,011
2020	112,498.11	10,935	10,404	102,094	23.21	4,399
	1,009,702.49	303,265	288,540	721,163		34,975
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 20.6						3.46

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 75-R3						
NET SALVAGE PERCENT.. 0						
2015	1,407,948.04	159,380	89,309	1,318,639	58.73	22,453
2019	31,269.25	1,676	939	30,330	61.86	490
2020	333,857.32	12,854	7,203	326,654	62.44	5,231
2021	340,478.08	7,967	4,464	336,014	62.60	5,368
2022	367,327.10	2,902	1,626	365,701	62.79	5,824
	2,480,879.79	184,779	103,541	2,377,338		39,366
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						60.4 1.59

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1955	20,535,442.80	15,247,566	15,903,266	4,632,177	23.41	197,872
1959	57,828,112.08	41,497,453	43,281,992	14,546,120	24.99	582,078
1960	116,699.89	82,413	85,957	30,743	26.00	1,182
1962	11,622,642.49	8,087,035	8,434,807	3,187,835	26.45	120,523
1963	26,967,773.46	18,451,351	19,244,825	7,722,948	27.46	281,244
1976	35,885,250.97	20,526,364	21,409,071	14,476,180	34.80	415,982
1980	311,075.36	165,243	172,349	138,726	37.50	3,699
1984	223,058.90	109,076	113,767	109,292	40.24	2,716
1989	22,112,023.58	9,629,786	10,043,901	12,068,123	43.42	277,939
1999	10,823,142.15	3,459,076	3,607,829	7,215,313	50.03	144,220
2007	4,250,246.66	935,479	975,708	3,274,539	54.92	59,624
2008	2,158,210.09	447,613	466,862	1,691,348	55.43	30,513
2009	9,141,646.29	1,764,338	1,840,211	7,301,435	56.43	129,389
2010	3,551,662.14	639,299	666,791	2,884,871	56.94	50,665
2011	3,036,235.15	506,444	528,223	2,508,012	57.46	43,648
2016	11,631.75	1,134	1,183	10,449	60.17	174
2018	181,068.80	12,548	13,088	167,981	60.44	2,779
2019	13,085,073.71	709,211	739,709	12,345,365	61.02	202,317
2020	12,519,965.25	494,539	515,806	12,004,159	60.79	197,469
2021	3,068,016.55	74,553	77,759	2,990,258	60.23	49,647
2022	3,305,943.86	28,431	29,653	3,276,290	57.98	56,507
	240,734,921.93	122,868,952	128,152,757	112,582,165		2,850,187
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						39.5 1.18

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S2.5						
NET SALVAGE PERCENT.. 0						
1959	10,804,438.72	9,742,362	10,314,531	489,908	6.92	70,796
1963	1,818,532.06	1,612,311	1,707,002	111,530	7.61	14,656
1976	1,216,016.88	978,164	1,035,612	180,405	11.31	15,951
1989	556,114.49	367,036	388,592	167,522	17.26	9,706
1999	169,436.35	84,007	88,941	80,495	23.90	3,368
2008	221,694.56	70,410	74,545	147,150	31.16	4,722
2011	56,507.56	14,296	15,135	41,373	33.95	1,219
2018	35,749.05	3,553	3,762	31,987	40.75	785
2019	341,943.40	26,466	28,020	313,923	41.75	7,519
2020	138,000.00	7,618	8,066	129,934	42.75	3,039
2021	138,000.00	4,582	4,851	133,149	43.75	3,043
2022	65,000.00	715	757	64,243	44.75	1,436
	15,561,433.07	12,911,520	13,669,814	1,891,619		136,240
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.9 0.88

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-L2.5						
NET SALVAGE PERCENT.. 0						
1960	34,668.83	34,669	34,669			
2008	91,182.72	69,809	58,862	32,321	4.44	7,280
2010	5,997.31	4,355	3,672	2,325	4.71	494
2011	24,727.41	17,319	14,603	10,124	4.92	2,058
2013	175,978.36	110,673	93,318	82,660	5.61	14,734
2015	40,642.36	21,614	18,224	22,418	6.60	3,397
2016	57,410.23	27,167	22,907	34,503	7.24	4,766
2019	128,382.91	34,779	29,325	99,058	9.42	10,516
	558,990.13	320,385	275,580	283,410		43,245

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.6 7.74

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S0.5						
NET SALVAGE PERCENT.. 0						
1991	57,145.18	44,282	46,779	10,366	9.15	1,133
2002	44,831.14	27,661	29,221	15,610	12.72	1,227
2004	103,580.38	59,973	63,355	40,225	13.45	2,991
2005	8,447.47	4,715	4,981	3,466	13.85	250
2006	47,672.44	25,643	27,089	20,583	14.17	1,453
2007	12,588.57	6,478	6,843	5,746	14.62	393
2008	4,929.41	2,423	2,560	2,369	15.00	158
2009	412,655.77	193,288	204,188	208,468	15.32	13,608
2010	102,635.65	45,416	47,977	54,659	15.75	3,470
2011	126,266.84	52,565	55,529	70,738	16.12	4,388
2012	1,461,830.85	567,921	599,947	861,884	16.53	52,141
2013	387,003.09	139,321	147,178	239,825	16.89	14,199
2014	69,950.84	23,070	24,371	45,580	17.27	2,639
2015	3,768,780.10	1,122,343	1,185,633	2,583,147	17.69	146,023
2016	243,927.48	64,372	68,002	175,925	18.13	9,704
2017	84,718.79	19,384	20,477	64,242	18.54	3,465
2018	93,193.70	17,912	18,922	74,272	18.92	3,926
2019	318,006.15	48,750	51,499	266,507	19.33	13,787
2020	949,642.58	106,835	112,860	836,783	19.72	42,433
	8,297,806.43	2,572,352	2,717,411	5,580,395		317,388
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						17.6 3.82

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S1.5						
NET SALVAGE PERCENT.. 0						
1960	273,316.62	264,789	258,550	14,767	2.01	7,347
1975	14,997,426.20	13,464,689	13,147,411	1,850,015	5.41	341,962
1990	26,022.23	19,959	19,489	6,533	9.87	662
1999	1,058,782.35	676,774	660,827	397,955	13.26	30,012
2001	1,566,507.69	943,038	920,816	645,692	14.21	45,439
2002	20,993.69	12,223	11,935	9,059	14.71	616
2003	81,947.00	46,021	44,937	37,010	15.22	2,432
2006	11,512.55	5,699	5,565	5,948	16.83	353
2007	294,861.97	138,939	135,665	159,197	17.39	9,155
2008	1,128,245.89	503,875	492,002	636,244	17.97	35,406
2010	10,738.88	4,242	4,142	6,597	19.15	344
2012	7,847.06	2,662	2,599	5,248	20.46	257
2013	49,303.89	15,269	14,909	34,395	21.17	1,625
2014	22,890.88	6,400	6,249	16,642	21.90	760
2015	11,429,049.71	2,845,833	2,778,774	8,650,276	22.62	382,417
2016	22,982.63	4,990	4,872	18,111	23.44	773
2018	5,335.95	814	795	4,541	25.00	182
2019	32,958.15	3,935	3,842	29,116	25.82	1,128
2020	406,989.68	34,798	33,979	373,011	26.74	13,950
	31,447,713.02	18,994,949	18,547,358	12,900,355		874,820
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.7 2.78

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2020	45,000.00	2,588	2,556	42,444	40.98	1,036
	45,000.00	2,588	2,556	42,444		1,036
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						41.0 2.30

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2005	7,577.02	6,630	7,180	397	2.50	159
2009	32,371.63	21,851	23,665	8,707	6.50	1,340
2010	16,786.48	10,492	11,363	5,423	7.50	723
2013	29,977.26	14,239	15,421	14,556	10.50	1,386
2015	5,309.81	1,991	2,156	3,154	12.50	252
2016	8,708.04	2,830	3,065	5,643	13.50	418
2017	105,131.15	28,911	31,312	73,819	14.50	5,091
2018	4,072.60	916	992	3,081	15.50	199
2019	214,600.73	37,555	40,673	173,928	16.50	10,541
2020	46,980.00	5,872	6,359	40,621	17.50	2,321
2021	46,980.00	3,524	3,817	43,163	18.50	2,333
2022	46,980.00	1,174	1,271	45,709	19.50	2,344
	565,474.72	135,985	147,274	418,200		27,107

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 15.4 4.79

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 14-L4						
NET SALVAGE PERCENT.. 0						
2003	25,581.36	23,645	25,495	86	1.60	54
2004	26,888.14	24,522	26,440	448	1.78	252
2007	154,794.96	135,074	145,641	9,154	2.26	4,050
2008	12,265.49	10,546	11,371	894	2.36	379
2009	23,189.06	19,534	21,062	2,127	2.53	841
2010	8,206.63	6,720	7,246	961	2.77	347
2011	22,172.79	17,366	18,725	3,448	3.18	1,084
2013	20,696.46	14,117	15,221	5,475	4.43	1,236
2014	481,934.34	299,860	323,318	158,616	5.16	30,740
2015	69,362.46	38,649	41,672	27,690	5.96	4,646
2016	34,619.20	16,901	18,223	16,396	6.81	2,408
2017	101,198.46	42,018	45,305	55,893	7.75	7,212
2018	25,671.24	8,744	9,428	16,243	8.71	1,865
2019	205,074.11	54,406	58,662	146,412	9.69	15,110
	1,211,654.70	712,102	767,809	443,845		70,224

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.3 5.80

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2015	7,450.89	2,794	2,683	4,768	12.50	381
2018	159,464.53	35,880	34,458	125,007	15.50	8,065
2019	21,839.72	3,822	3,671	18,169	16.50	1,101
2020	164,430.00	20,554	19,739	144,691	17.50	8,268
2021	164,430.00	12,332	11,843	152,587	18.50	8,248
2022	164,430.00	4,111	3,948	160,482	19.50	8,230
	682,045.14	79,493	76,342	605,703		34,293
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						17.7 5.03

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2010	61,264.39	51,053	43,072	18,192	2.50	7,277
2015	18,226.62	9,113	7,688	10,539	7.50	1,405
2018	16,270.55	4,881	4,118	12,153	10.50	1,157
2019	11,908.19	2,779	2,344	9,564	11.50	832
	107,669.75	67,826	57,222	50,447		10,671
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						4.7 9.91

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 22-R2						
NET SALVAGE PERCENT.. 0						
2009	65,163.00	38,094	44,659	20,504	9.59	2,138
2010	412,276.19	227,783	267,037	145,239	10.12	14,352
2011	45,902.54	23,805	27,907	17,996	10.67	1,687
2012	183,198.71	88,485	103,734	79,465	11.24	7,070
2015	7,815.84	2,872	3,366	4,449	12.91	345
	714,356.28	381,039	446,703	267,653		25,592
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.5 3.58

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2010	10,472.81	8,727	9,846	627	2.50	251
2013	15,352.54	9,723	10,970	4,383	5.50	797
2015	1,055,779.23	527,890	595,600	460,179	7.50	61,357
2020	23,490.00	3,915	4,417	19,073	12.50	1,526
2021	23,490.00	2,349	2,650	20,840	13.50	1,544
2022	23,490.00	783	884	22,606	14.50	1,559
	1,152,074.58	553,387	624,367	527,708		67,034
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						7.9 5.82

PART III. EXPERIENCED AND ESTIMATED NET SALVAGE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

EXPERIENCED AND ESTIMATED 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		62.37		62.37-
355.00	3,187.39			
361.10		1,753.32-		1,753.32
389.10		3,678.20		3,678.20-
	3,187.39	1,987.25		1,987.25-
2019 TRANSACTION YEAR				
354.30	66,016.96			
354.40	60,486.88	2,728.82		2,728.82-
360.10	3,403.50	2,367.76		2,367.76-
361.10		900,329.51		900,329.51-
361.20		60,342.93		60,342.93-
371.00	429.89	23,928.05		23,928.05-
380.00	291,843.01	275.53		275.53-
390.00	4,008.24	9,975.61		9,975.61-
391.00	8,792.82	2,818.43		2,818.43-
393.00		326.90		326.90-
394.00		640.50		640.50-
395.00	37,549.11			
	472,530.41	1,003,734.04		1,003,734.04-
2020 TRANSACTION YEAR				
354.30	59,605.70			
354.40	212,341.52	10,617.08		10,617.08-
355.00	11,426.16			
360.10	34,047.49	23,833.24		23,833.24-
361.10	503,937.31			
361.20	9,141.08			
371.00	96,452.91	77,162.33		77,162.33-
380.00	45,907.50			
390.00	16,460.78			
393.00	22,693.85			
394.00	12,015.30			
396.00	6,078.99			
	1,030,108.59	111,612.65		111,612.65-

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS MCKEESPORT OPERATIONS

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

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2021 TRANSACTION YEAR				
354.30	28,431.76			
354.40	101,286.36	5,064.32		5,064.32-
360.10	19,658.93	13,761.25		13,761.25-
361.10	176,930.37			
361.20	5,188.72			
	331,496.14	18,825.57		18,825.57-
2022 TRANSACTION YEAR				
354.30	28,296.49			
354.40	100,804.44	5,040.22		5,040.22-
360.10	21,076.56	14,753.59		14,753.59-
361.10	189,689.07			
361.20	2,582.02			
	342,448.58	19,793.81		19,793.81-
TOTAL	2,179,771.11	1,155,953.32		1,155,953.32-

EXHIBIT NO. 11-AC - DEPRECIATION STUDY

WASTEWATER CSS KANE OPERATIONS

AS OF DECEMBER 31, 2020

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

PENNSYLVANIA-AMERICAN WATER COMPANY
MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS KANE OPERATIONS

2020 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2020

Prepared by:



*Excellence Delivered **As Promised***

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

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER CSS KANE OPERATIONS

2020 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2020

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention Ashely E. Everette
Director, Rates & Regulatory

Ladies and 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, 2020, are presented in the attached report. The results of our study as of December 31, 2021, are presented in our report, "2021 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2021." 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, 2020.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316

t: 717.763.7211 • f: 717.763.4590

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PART I. INTRODUCTION

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER CSS KANE OPERATIONS

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, 2020. 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, 2020.

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 2016-2020.

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, 2020. 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 Pennsylvania-American Water Company Wastewater Operations; (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 Iowa 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.

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

Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."¹ 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,"² "Engineering Valuation and Depreciation,"³ and "Depreciation Systems."⁴

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.

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

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

³Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

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

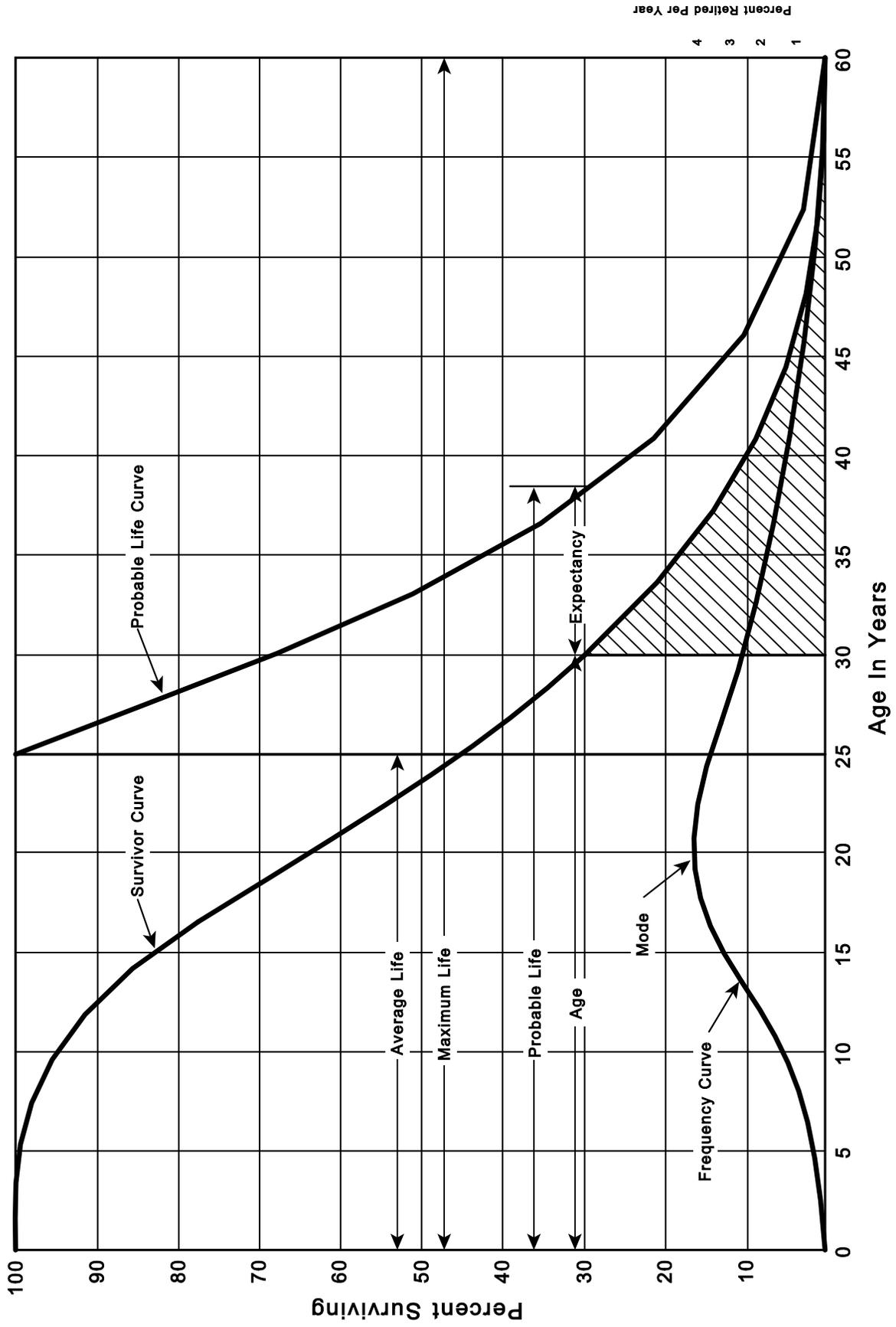


Figure 1. A Typical Survivor Curve and Derived Curves

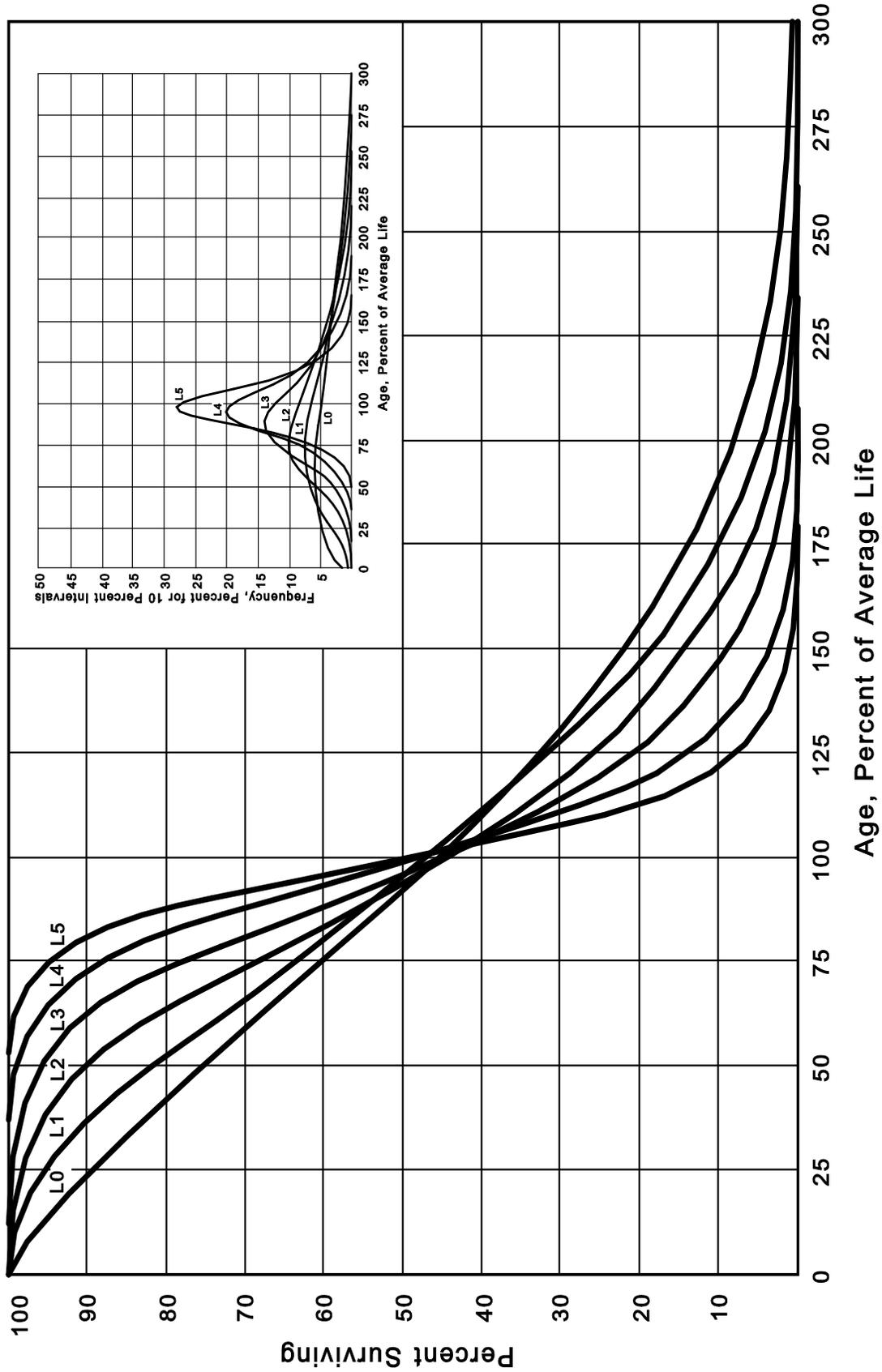


Figure 2. Left Modal or "L" lowa Type Survivor Curves

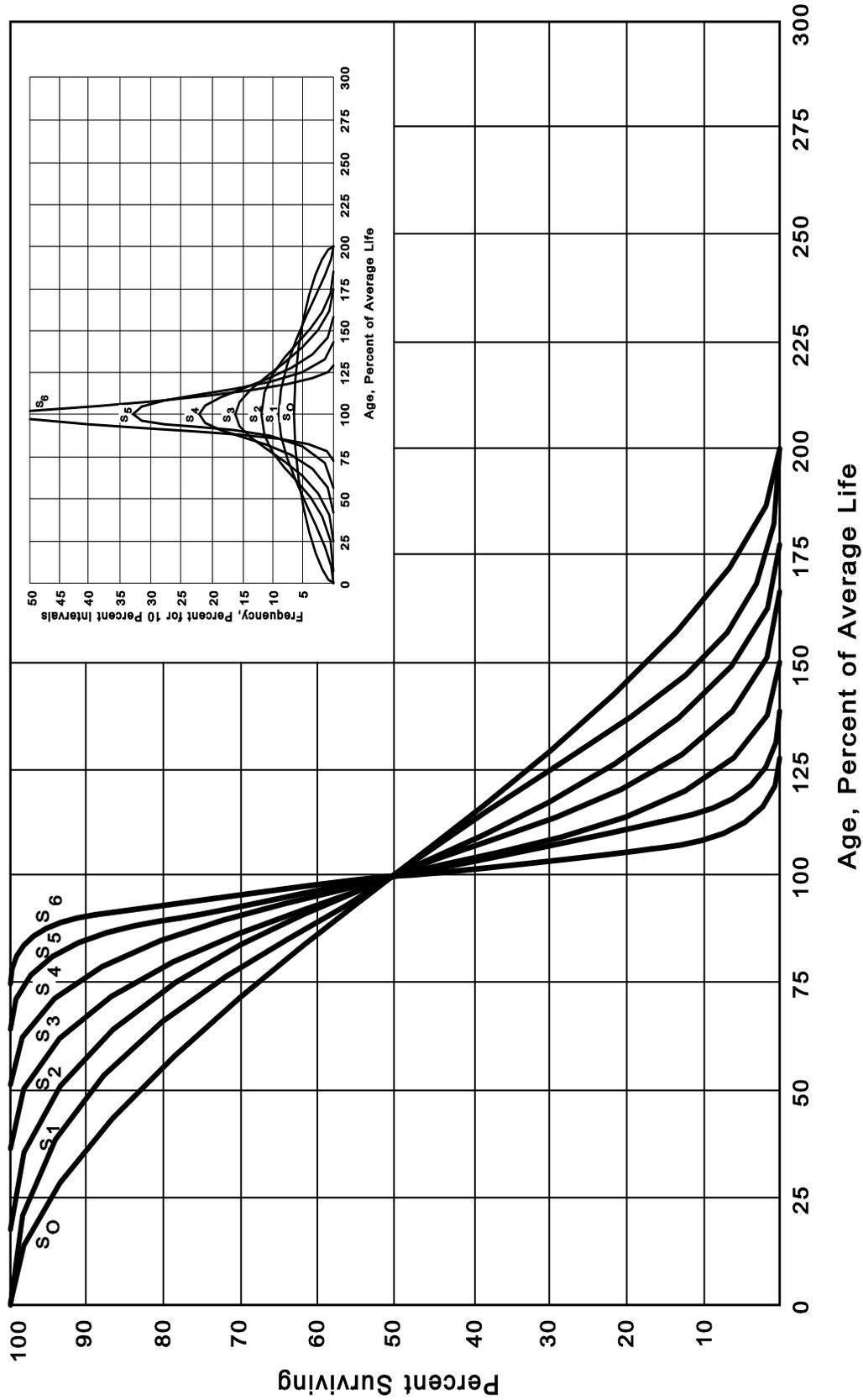


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves

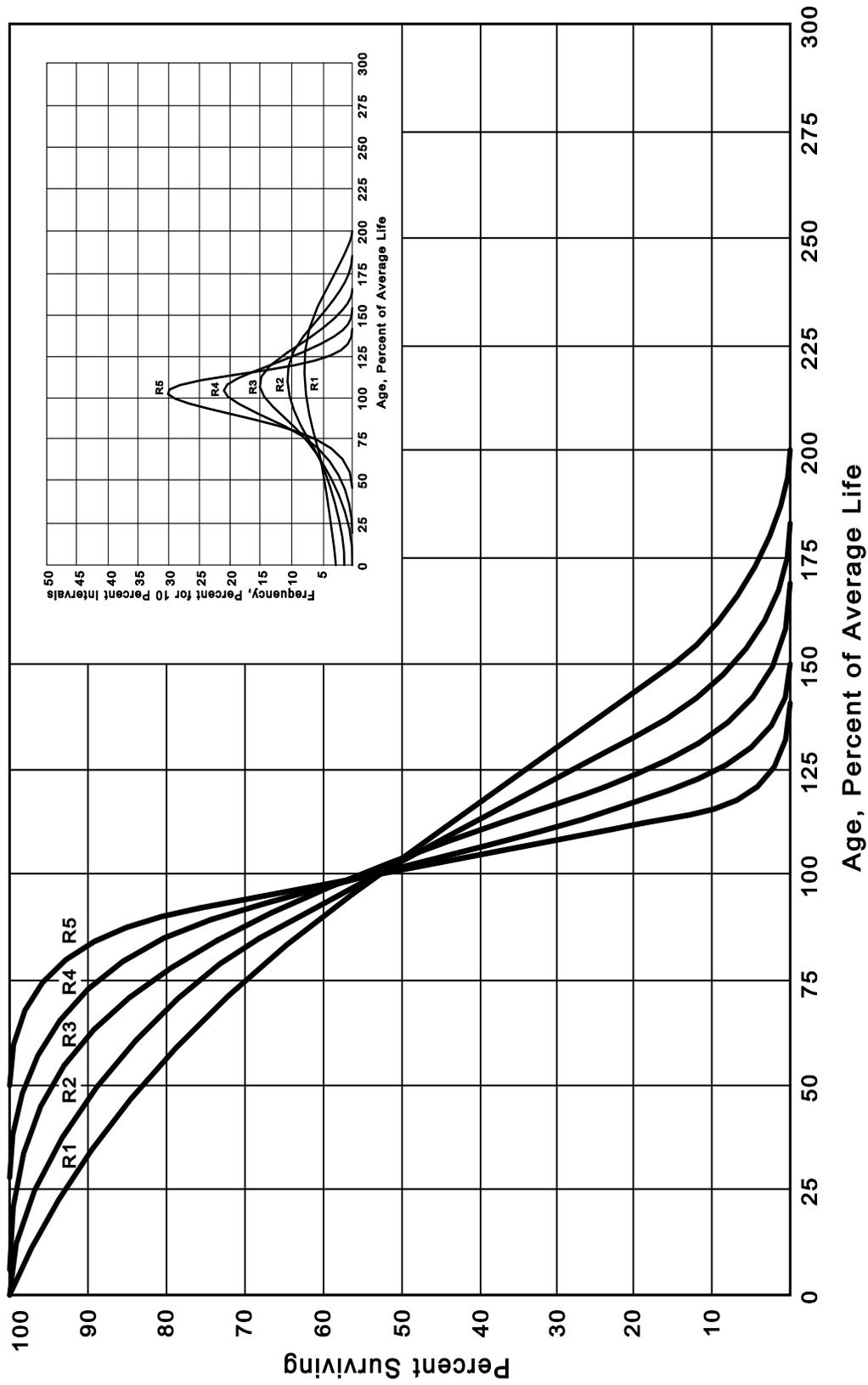


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

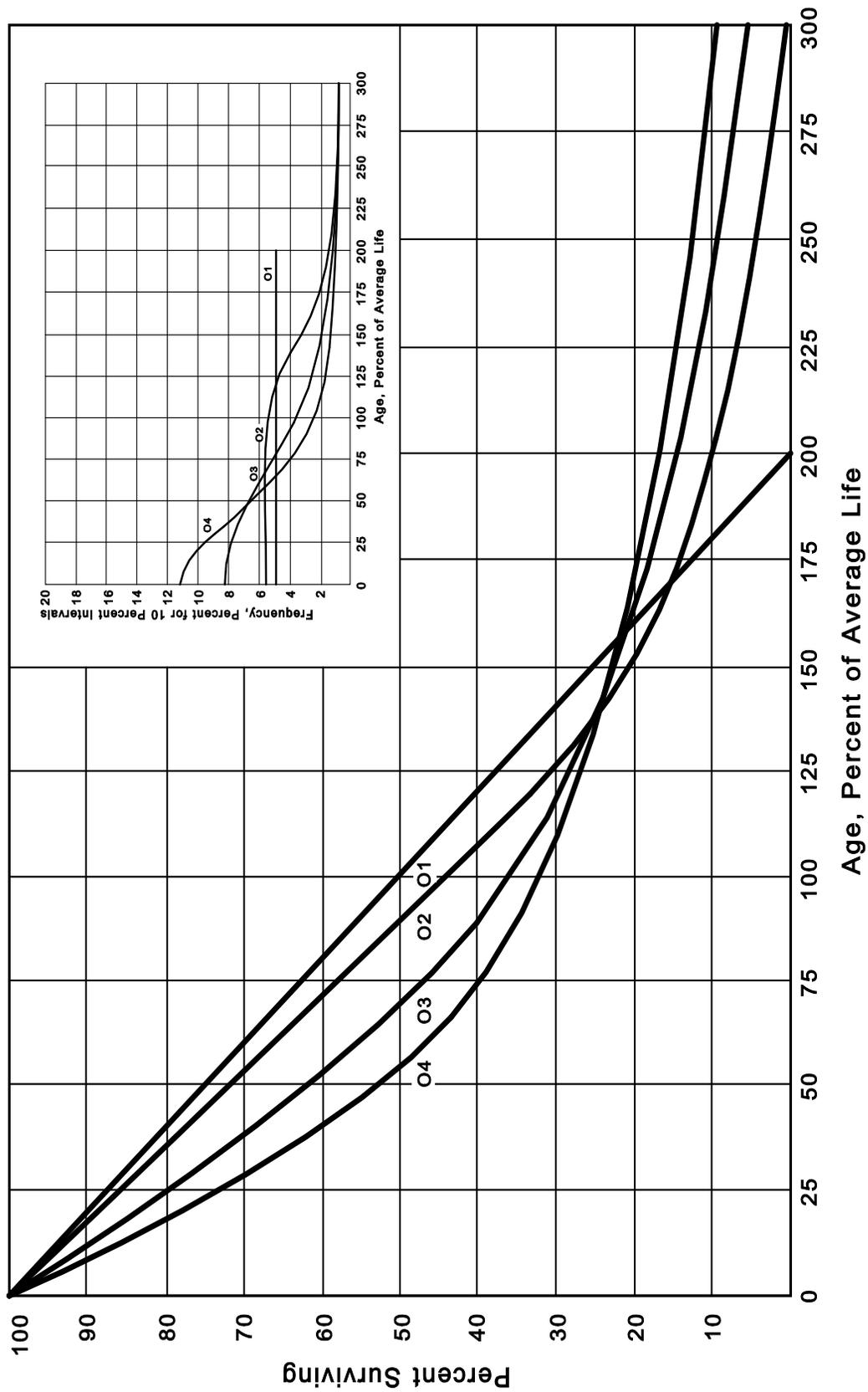


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

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 2010-2019 during which there were placements (or installations) during the years 2005-2019. 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 2005 were retired in 2010. 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 2010 retirements of 2005 installations and ending with the 2019 retirements of the 2014 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 2010-2019
SUMMARIZED BY AGE INTERVAL

Year Placed (1)	Retirements, Thousands of Dollars										Total During Age Interval (12)	Age Interval (13)
	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	2017 (9)	2018 (10)	2019 (11)		
2005	10	11	12	13	14	16	23	24	25	26	26	13½-14½
2006	11	12	13	15	16	18	20	21	22	19	44	12½-13½
2007	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2008	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2009	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2010	4	9	10	11	12	13	14	15	16	20	105	8½-9½
2011		5	11	12	13	14	15	16	18	20	113	7½-8½
2012			6	12	13	15	16	17	19	19	124	6½-7½
2013				6	13	15	16	17	19	19	131	5½-6½
2014					13	14	16	17	19	20	143	4½-5½
2015					7	8	18	20	22	23	146	3½-4½
2016						9	9	20	22	25	150	2½-3½
2017								11	23	25	151	1½-2½
2018									11	24	153	½-1½
2019										13	80	0-½
Total	53	68	86	106	128	157	196	231	273	308	1,606	

Experience Band 2010-2019

Placement Band 2005-2019

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2010-2019
SUMMARIZED BY AGE INTERVAL

Year Placed (1)	During Year										Total During Age Interval (12)	Age Interval (13)	
	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	2017 (9)	2018 (10)	2019 (11)			
2005	-	-	-	-	-	-	60 ^a	-	-	-	-	-	13½-14½
2006	-	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2007	-	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2008	-	-	-	-	-	-	-	(5) ^b	-	-	60	-	10½-11½
2009	-	-	-	-	-	-	-	6 ^a	-	-	-	-	9½-10½
2010	-	-	-	-	-	-	-	-	-	-	(5)	-	8½-9½
2011	-	-	-	-	-	-	-	-	-	-	6	-	7½-8½
2012	-	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2013	-	-	-	-	-	-	-	(12) ^b	-	-	-	-	5½-6½
2014	-	-	-	-	-	-	-	-	22 ^a	-	-	-	4½-5½
2015	-	-	-	-	-	-	-	(19) ^b	-	-	10	-	3½-4½
2016	-	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2017	-	-	-	-	-	-	-	-	-	(102) ^c	(121)	-	1½-2½
2018	-	-	-	-	-	-	-	-	-	-	-	-	½-1½
2019	-	-	-	-	-	-	-	-	-	-	-	-	0-½
Total	-	-	-	-	-	-	60	(30)	22	(102)	(50)	-	

^a Transfer Affecting Exposures at Beginning of Year

^b Transfer Affecting Exposures at End of Year

^c 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 2010 through 2019 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 2015 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 2010-2019
SUMMARIZED BY AGE INTERVAL**

Year Placed	Exposures, Thousands of Dollars										Total at Beginning of Age Interval	Age Interval
	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	2017 (9)	2018 (10)	2019 (11)		
2005	255	245	234	222	209	195	239	216	192	167	167	13½-14½
2006	279	268	256	243	228	212	194	174	153	131	323	12½-13½
2007	307	296	284	271	257	241	224	205	184	162	531	11½-12½
2008	338	330	321	311	300	289	276	262	242	226	823	10½-11½
2009	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½
2010	420 ^a	416	407	397	386	374	361	347	332	316	1,503	8½-9½
2011		460 ^a	455	444	432	419	405	390	374	356	1,952	7½-8½
2012			510 ^a	504	492	479	464	448	431	412	2,463	6½-7½
2013				580 ^a	574	561	546	530	501	482	3,057	5½-6½
2014					660 ^a	653	639	623	628	609	3,789	4½-5½
2015						750 ^a	742	724	685	663	4,332	3½-4½
2016							850 ^a	841	821	799	4,955	2½-3½
2017								960 ^a	949	926	5,719	1½-2½
2018									1,080 ^a	1,069	6,579	½-1½
2019										1,220 ^a	7,490	0-½
Total	1,975	2,382	2,824	3,318	3,872	4,494	5,247	6,017	6,852	7,799	44,780	

^aAdditions during the year

For the entire experience band 2010-2019, 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	=	$143,000 \div 3,789,000 = 0.0377$
Survivor Ratio	=	$1.000 - 0.0377 = 0.9623$
Percent surviving at age 5½	=	$(88.15) \times (0.9623) = 84.83$

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 2010-2019

Placement Band 2005-2019

(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

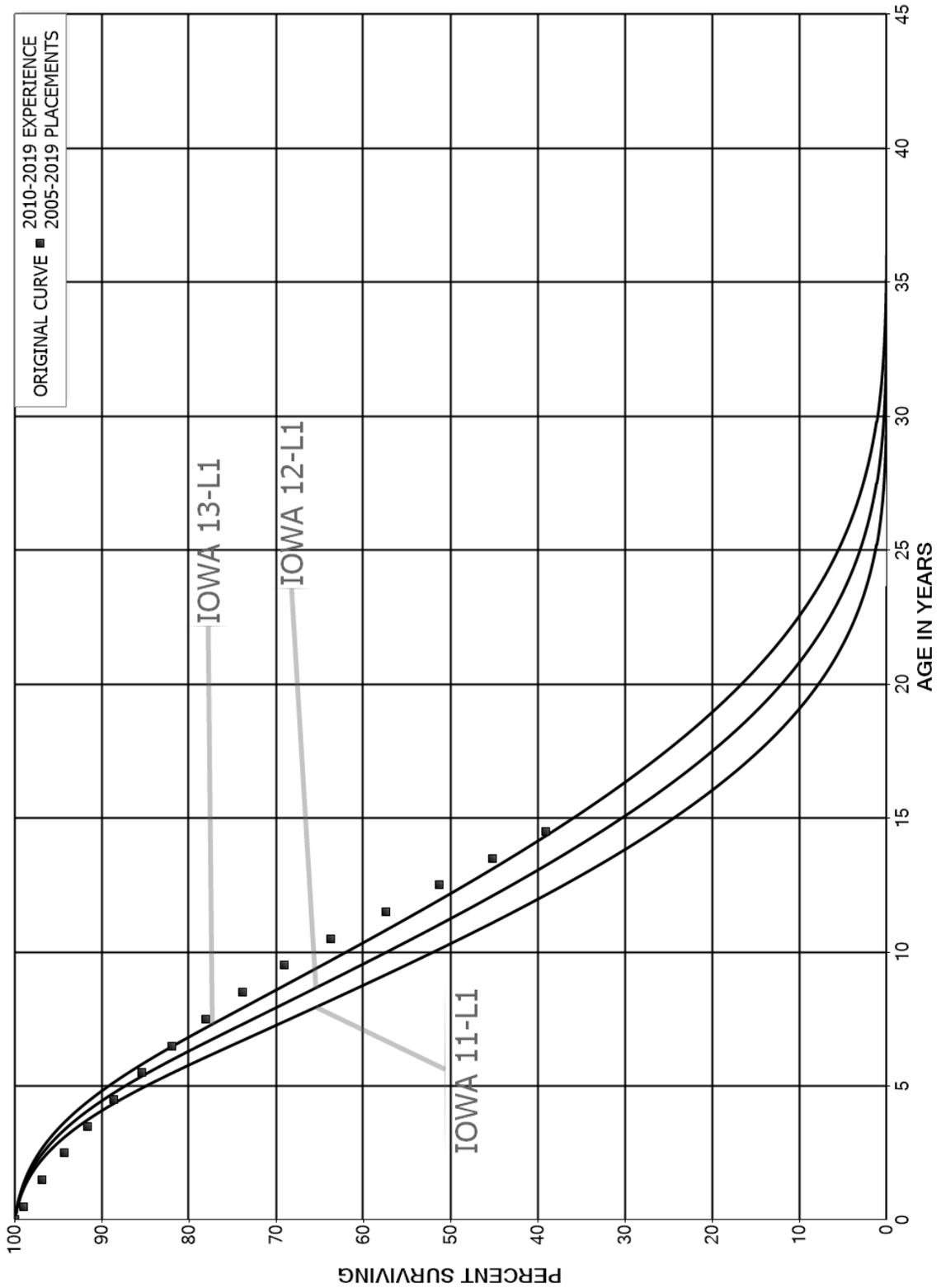


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

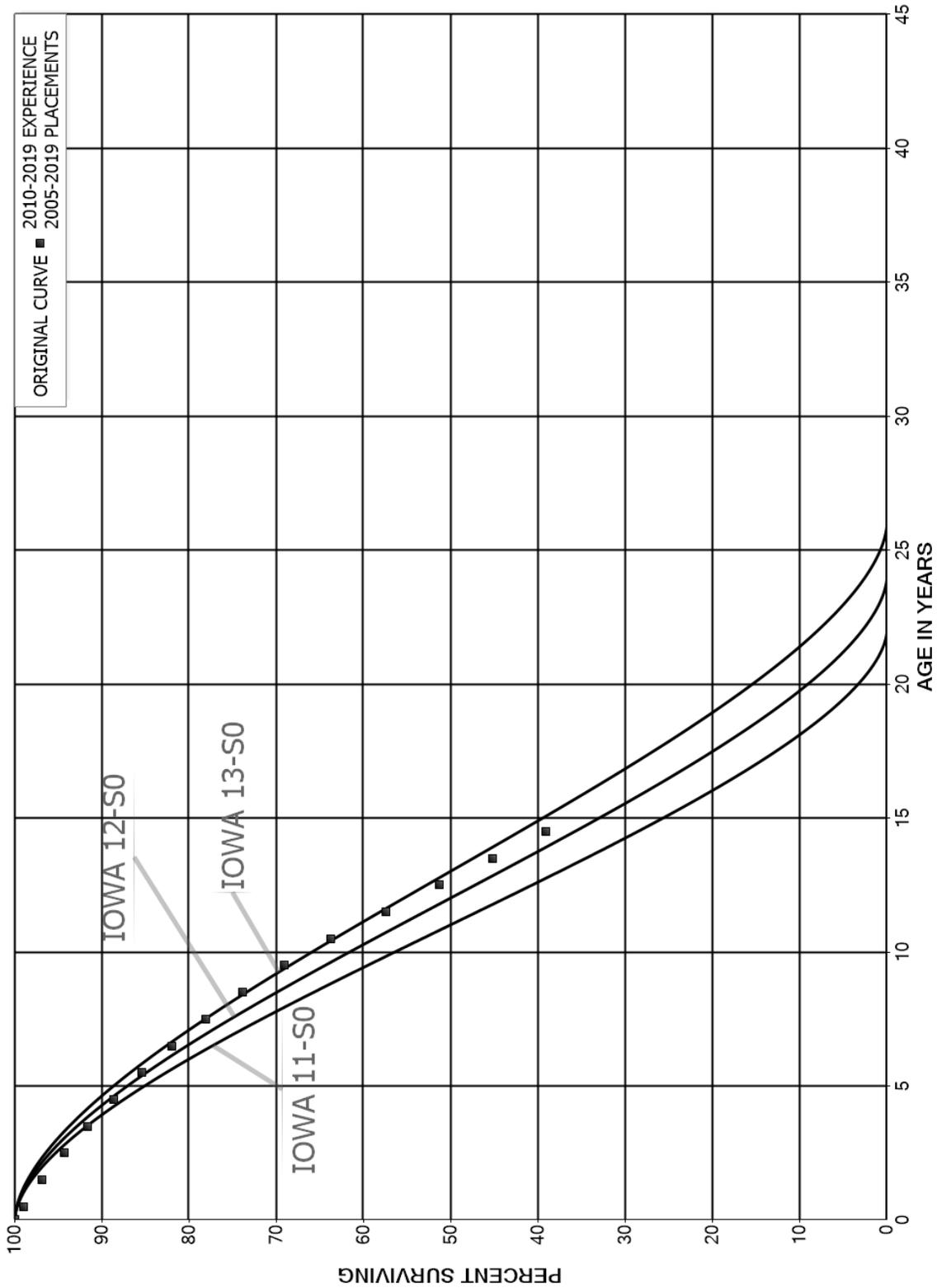


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

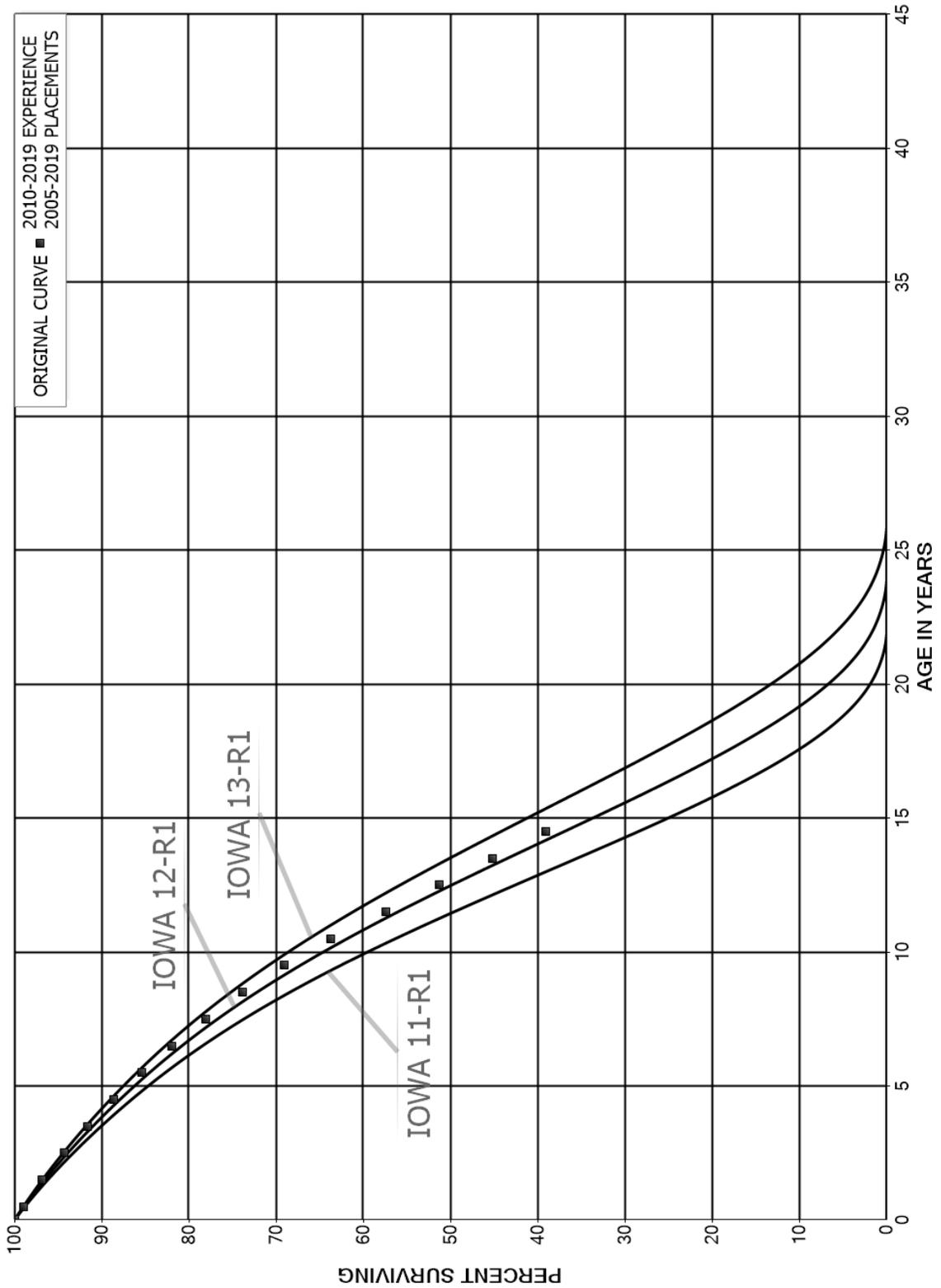
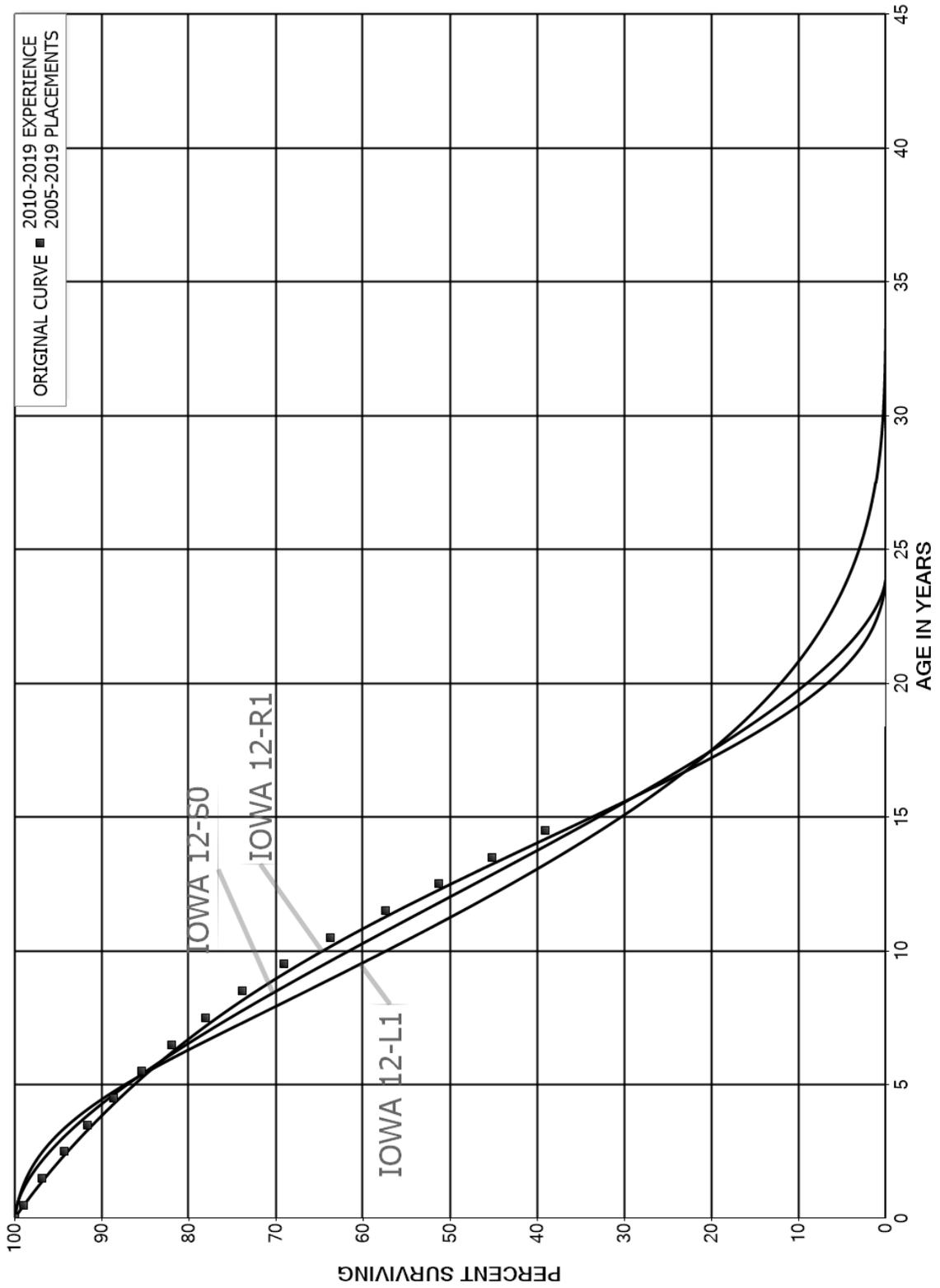


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



PART III. SERVICE LIFE CONSIDERATIONS

PART III. SERVICE LIFE CONSIDERATIONS

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 other Pennsylvania-American wastewater systems. 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.

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."

**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, 2019, is the result of a bringforward of the book reserves established by the Commission for the Kane wastewater operation at the time of acquisition which was August 2020. The projected book reserve as of December 31, 2020, is a bringforward of the December 31, 2019 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, 2020, 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, 2020, 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, 2016 through December 31, 2019, and estimated for the period January 1, 2020 through December 31, 2020. 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.

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, 2020 of the book reserve as of December 31, 2019. Table 4 sets forth the calculation of estimated depreciation accruals for the twelve months ended December 31, 2020. Table 5 presents the amortization of experienced and estimated net salvage, by account, based on the five-year period, 2016-2020. 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 2016-2020 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 2016-2020, 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 CSS KANE OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2020

DEPRECIABLE GROUP (1)	ORIGINAL COST	CUSTOMER	CONTRIBUTIONS	EXCLUDED	NET ORIGINAL COST
	AS OF DECEMBER 31, 2020 (2)	ADVANCES (3)	IN AID OF CONSTRUCTION (4)	PROPERTY (5)	AS OF DECEMBER 31, 2020 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	2,188,468.96				2,188,468.96
354.40 STRUCTURES AND IMPROVEMENTS - TDP	11,022,986.60				11,022,986.60
360.10 COLLECTION SEWERS - FORCE MAINS	551,255.91				551,255.91
361.10 COLLECTION SEWERS - GRAVITY MAINS	9,847,104.34				9,847,104.34
361.20 MANHOLES	915,753.84				915,753.84
363.00 SERVICES	315,217.47				315,217.47
364.00 FLOW MEASURING DEVICES	29,601.42				29,601.42
371.00 PUMPING EQUIPMENT	1,478,990.56				1,478,990.56
380.00 TREATMENT EQUIPMENT	6,128,482.14				6,128,482.14
381.00 PLANT SEWERS	1,576,345.15				1,576,345.15
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	732.58				732.58
390.00 OFFICE FURNITURE AND EQUIPMENT	22,475.29				22,475.29
391.00 TRANSPORTATION EQUIPMENT	33,668.14				33,668.14
392.00 STORES EQUIPMENT	6,403.05				6,403.05
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	86,859.22				86,859.22
394.00 LABORATORY EQUIPMENT	6,372.63				6,372.63
395.00 POWER OPERATED EQUIPMENT	2,684.02				2,684.02
396.00 COMMUNICATION EQUIPMENT	237,045.08				237,045.08
397.00 MISCELLANEOUS EQUIPMENT	132,000.00				132,000.00
TOTAL DEPRECIABLE PLANT	34,582,446.40	0.00	0.00	0.00	34,582,446.40
NONDEPRECIABLE PLANT					
353.20 LAND AND LAND RIGHTS - COLLECTION	38,022.09				38,022.09
TOTAL NONDEPRECIABLE PLANT	38,022.09	0.00	0.00	0.00	38,022.09
TOTAL UTILITY PLANT	34,620,468.49	0.00	0.00	0.00	34,620,468.49

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2020

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2020 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL ACCRUAL AMOUNT (6)	CALCULATED ANNUAL ACCRUAL RATE (7)=(6)/(3)	COMPOSITE REMAINING LIFE (8)
DEPRECIABLE PLANT							
354.30	STRUCTURES AND IMPROVEMENTS - SPP	2,188,468.96	915,808	1,272,661	43,807	1.99	29.2
354.40	STRUCTURES AND IMPROVEMENTS - TDP	11,022,986.60	4,631,894	6,391,092	218,994	1.99	29.2
360.10	COLLECTION SEWERS - FORCE MAINS	551,255.91	214,127	337,129	7,476	1.36	45.1
361.10	COLLECTION SEWERS - GRAVITY MAINS	9,847,104.34	4,537,633	5,309,472	127,974	1.30	41.5
361.20	MANHOLES	915,753.84	307,634	608,120	28,285	3.09	21.5
363.00	SERVICES	315,217.47	118,230	196,987	8,406	2.67	23.4
364.00	FLOW MEASURING DEVICES	29,601.42	17,326	12,276	3,557	12.02	3.5
371.00	PUMPING EQUIPMENT	1,478,990.56	870,929	608,062	50,247	3.40	12.1
380.00	TREATMENT EQUIPMENT	6,128,482.14	3,880,351	2,248,132	234,390	3.82	9.6
381.00	PLANT SEWERS	1,576,345.15	726,905	849,440	32,827	2.08	25.9
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	732.58	273	459	92	12.56	5.0
390.00	OFFICE FURNITURE AND EQUIPMENT	22,475.29	18,027	4,449	383	1.70	11.6
391.00	TRANSPORTATION EQUIPMENT	33,688.14	21,282	12,386	1,422	4.22	8.7
392.00	STORES EQUIPMENT	6,403.05	494	5,909	275	4.29	21.5
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	86,859.22	6,334	80,526	10,146	11.68	7.9
394.00	LABORATORY EQUIPMENT	6,372.63	5,154	1,218	0	-	-
395.00	POWER OPERATED EQUIPMENT	2,684.02	949	1,735	129	4.81	13.4
396.00	COMMUNICATION EQUIPMENT	237,045.08	5,353	231,692	16,213	6.84	14.3
397.00	MISCELLANEOUS EQUIPMENT	132,000.00	(544)	132,544	9,141	6.92	14.5
	TOTAL DEPRECIABLE PLANT	34,582,446.40	16,278,158	18,304,289	793,564	2.29	23.1
NONDEPRECIABLE PLANT							
353.20	LAND AND LAND RIGHTS - COLLECTION	38,022.09					
	TOTAL NONDEPRECIABLE PLANT	38,022.09			999		
	AMORTIZATION OF NET SALVAGE						
	TOTAL UTILITY PLANT	34,620,468.49	16,278,158	18,304,289	794,563		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2020, OF BOOK RESERVE AS OF DECEMBER 31, 2019

ACCOUNT (1)	BOOK RESERVE BALANCE AS OF 12/31/2019 (2)	+	PROJECTED DEPRECIATION ACCRUALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2020 (8)
354.30	0		13,860		4,191		419				906,558		915,808
354.40	0		88,919		21,108		2,111				4,566,194		4,631,894
360.10	0		3,271								210,856		214,127
361.10	0		53,174		9,588		1,918				4,495,964		4,537,633
361.20	0		8,028		1,539		308				301,452		307,634
363.00	0		2,606		1,171		234				117,030		118,230
364.00	0		1,551								15,775		17,326
371.00	0		25,094								845,835		870,929
380.00	0		78,240								3,802,111		3,880,351
381.00	0		12,190								714,715		726,905
389.10	0		14								259		273
390.00	0		590		2,469						19,906		18,027
391.00	0		926								20,356		21,282
392.00	0		85								409		494
393.00	0		1,184		16,022						21,172		6,334
394.00	0		123								5,031		5,154
395.00	0		26								923		949
396.00	0		3,161		926						3,118		5,353
397.00	0		638		5,273						4,091		(544)
TOTAL	0		293,680		62,287		4,989		0		16,051,754		16,278,158

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2020

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2019 (2)	NET ORIGINAL COST AS OF 12/31/2020 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.30	0.00	2,188,468.96	1.90	13,860		13,860
354.40	0.00	11,022,986.60	2.42	88,919		88,919
360.10	0.00	551,255.91	1.78	3,271		3,271
361.10	0.00	9,847,104.34	1.62	53,174		53,174
361.20	0.00	915,753.84	2.63	8,028		8,028
363.00	0.00	315,217.47	2.48	2,606		2,606
364.00	0.00	29,601.42	15.72	1,551		1,551
371.00	0.00	1,478,990.56	5.09	25,094		25,094
380.00	0.00	6,128,482.14	3.83	78,240		78,240
381.00	0.00	1,576,345.15	2.32	12,190		12,190
389.10	0.00	732.58	5.72	14		14
390.00	0.00	22,475.29	7.88	590		590
391.00	0.00	33,668.14	8.25	926		926
392.00	0.00	6,403.05	3.98	85		85
393.00	0.00	86,859.22	4.09	1,184		1,184
394.00	0.00	6,372.63	5.77	123		123
395.00	0.00	2,684.02	2.88	26		26
396.00	0.00	237,045.08	4.00	3,161		3,161
397.00	0.00	132,000.00	1.45	638		638
TOTAL	0.00	34,582,446.40		293,680	-	293,680

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

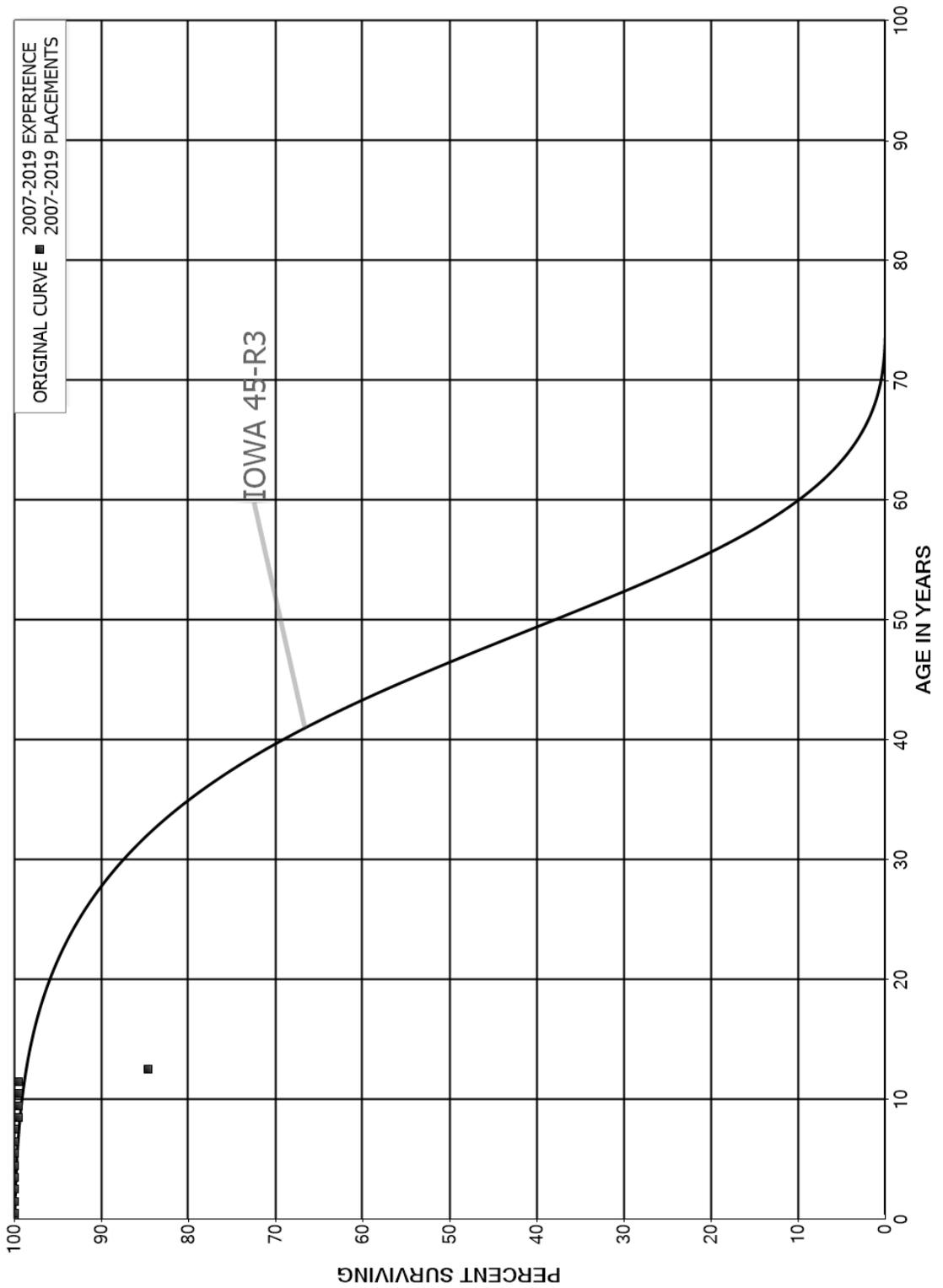
TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2016		2017		2018		2019		PROJECTED 2020		NET SALVAGE (12)*	SALVAGE ACCRUAL (13)=(12)/5
	GROSS SALVAGE - (2)	COST OF REMOVAL (3)	GROSS SALVAGE - (4)	COST OF REMOVAL (5)	GROSS SALVAGE - (6)	COST OF REMOVAL (7)	GROSS SALVAGE - (8)	COST OF REMOVAL (9)	GROSS SALVAGE - (10)	COST OF REMOVAL (11)		
354.30											(419)	(84)
354.40											(2,111)	(422)
361.10											(1,918)	(384)
361.20											(308)	(62)
363.00											(234)	(47)
TOTAL	0	4,989	(4,989)	(999)								

* Column (12) equals the summation of Columns (2) through (11).

PART VI. SERVICE LIFE STATISTICS

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION
 ORIGINAL AND SMOOTH SURVIVOR CURVES



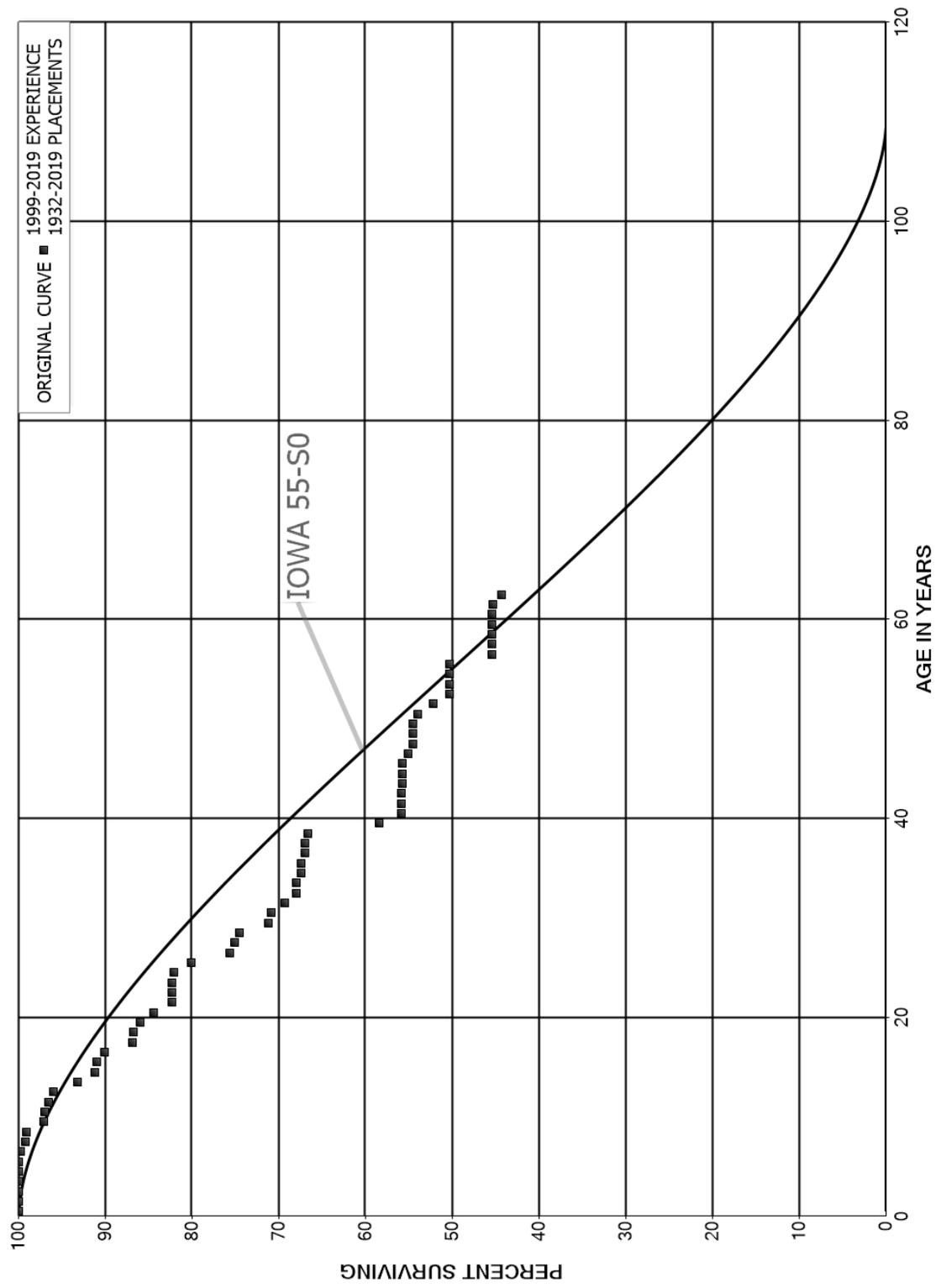
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION

ORIGINAL LIFE TABLE

PLACEMENT BAND 2007-2019			EXPERIENCE BAND 2007-2019		
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	4,844,636		0.0000	1.0000	100.00
0.5	3,478,774		0.0000	1.0000	100.00
1.5	1,864,154		0.0000	1.0000	100.00
2.5	516,452	0	0.0000	1.0000	100.00
3.5	479,797		0.0000	1.0000	100.00
4.5	437,900	416	0.0010	0.9990	100.00
5.5	422,717		0.0000	1.0000	99.90
6.5	321,516		0.0000	1.0000	99.90
7.5	321,516	1,408	0.0044	0.9956	99.90
8.5	311,522		0.0000	1.0000	99.47
9.5	311,522		0.0000	1.0000	99.47
10.5	134,415		0.0000	1.0000	99.47
11.5	20,659	3,076	0.1489	0.8511	99.47
12.5					84.66

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP

ORIGINAL LIFE TABLE

PLACEMENT BAND 1932-2019

EXPERIENCE BAND 1999-2019

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	70,500,767		0.0000	1.0000	100.00
0.5	76,131,665		0.0000	1.0000	100.00
1.5	80,233,751	6,642	0.0001	0.9999	100.00
2.5	105,447,960		0.0000	1.0000	99.99
3.5	85,605,007	28,836	0.0003	0.9997	99.99
4.5	79,002,174	4,425	0.0001	0.9999	99.96
5.5	46,624,214	105,422	0.0023	0.9977	99.95
6.5	51,444,895	277,564	0.0054	0.9946	99.73
7.5	50,906,335	75,090	0.0015	0.9985	99.19
8.5	50,793,050	1,027,715	0.0202	0.9798	99.04
9.5	34,780,266	28,544	0.0008	0.9992	97.04
10.5	15,695,508	65,025	0.0041	0.9959	96.96
11.5	15,618,899	88,716	0.0057	0.9943	96.56
12.5	20,002,643	601,564	0.0301	0.9699	96.01
13.5	17,169,269	353,428	0.0206	0.9794	93.12
14.5	16,203,968	41,247	0.0025	0.9975	91.20
15.5	16,204,082	163,309	0.0101	0.9899	90.97
16.5	13,585,539	481,677	0.0355	0.9645	90.06
17.5	12,995,837	17,548	0.0014	0.9986	86.86
18.5	12,210,208	114,143	0.0093	0.9907	86.74
19.5	7,393,964	134,551	0.0182	0.9818	85.93
20.5	6,513,761	157,405	0.0242	0.9758	84.37
21.5	6,711,244	2,801	0.0004	0.9996	82.33
22.5	7,374,817	1,543	0.0002	0.9998	82.30
23.5	6,783,698	15,823	0.0023	0.9977	82.28
24.5	6,921,413	166,617	0.0241	0.9759	82.09
25.5	6,763,696	380,532	0.0563	0.9437	80.11
26.5	5,899,041	38,147	0.0065	0.9935	75.60
27.5	4,281,769	34,820	0.0081	0.9919	75.12
28.5	3,967,252	175,318	0.0442	0.9558	74.50
29.5	4,051,668	21,732	0.0054	0.9946	71.21
30.5	5,300,696	114,682	0.0216	0.9784	70.83
31.5	4,027,463	76,382	0.0190	0.9810	69.30
32.5	2,813,504	2,190	0.0008	0.9992	67.98
33.5	2,649,698	20,846	0.0079	0.9921	67.93
34.5	1,122,954		0.0000	1.0000	67.40
35.5	398,615	2,457	0.0062	0.9938	67.40
36.5	369,394		0.0000	1.0000	66.98
37.5	339,885	1,942	0.0057	0.9943	66.98
38.5	249,055	30,753	0.1235	0.8765	66.60

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1932-2019			EXPERIENCE BAND 1999-2019		
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	877,505	37,754	0.0430	0.9570	58.37
40.5	1,351,121		0.0000	1.0000	55.86
41.5	19,298,436	4,893	0.0003	0.9997	55.86
42.5	19,293,543	30,808	0.0016	0.9984	55.85
43.5	32,745,779		0.0000	1.0000	55.76
44.5	14,343,608	10,968	0.0008	0.9992	55.76
45.5	14,332,640	153,806	0.0107	0.9893	55.72
46.5	14,199,715	156,087	0.0110	0.9890	55.12
47.5	552,598		0.0000	1.0000	54.51
48.5	1,223,925		0.0000	1.0000	54.51
49.5	1,265,936	12,500	0.0099	0.9901	54.51
50.5	1,284,936	43,517	0.0339	0.9661	53.98
51.5	570,093	20,853	0.0366	0.9634	52.15
52.5	524,823		0.0000	1.0000	50.24
53.5	524,823		0.0000	1.0000	50.24
54.5	447,474		0.0000	1.0000	50.24
55.5	447,474	42,843	0.0957	0.9043	50.24
56.5	13,313,486	1,903	0.0001	0.9999	45.43
57.5	13,311,583		0.0000	1.0000	45.42
58.5	13,049,341	13	0.0000	1.0000	45.42
59.5	140,486		0.0000	1.0000	45.42
60.5	140,486	363	0.0026	0.9974	45.42
61.5	140,123	3,040	0.0217	0.9783	45.31
62.5					44.32
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	40,428		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		

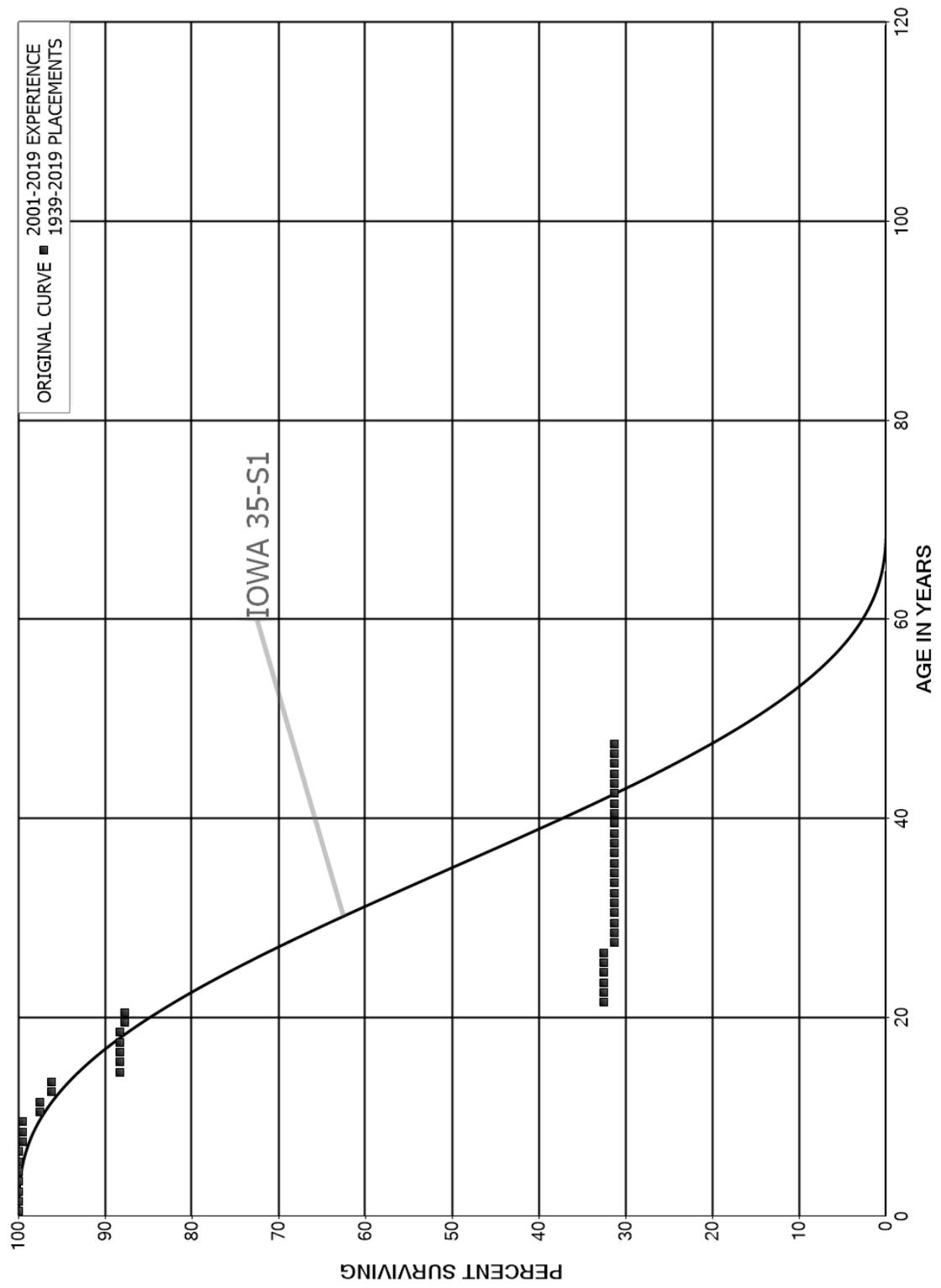
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNTS 354.30 AND 354.40 STRUCTURES AND IMPROVEMENTS - SPP AND TDP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1932-2019			EXPERIENCE BAND 1999-2019		
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	602		0.0000		
85.5	602		0.0000		
86.5	602		0.0000		
87.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 2001-2019		
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	2,331,347		0.0000	1.0000	100.00
0.5	2,248,872	400	0.0002	0.9998	100.00
1.5	2,139,519		0.0000	1.0000	99.98
2.5	2,007,976		0.0000	1.0000	99.98
3.5	1,998,798		0.0000	1.0000	99.98
4.5	978,189		0.0000	1.0000	99.98
5.5	566,034		0.0000	1.0000	99.98
6.5	540,776	2,524	0.0047	0.9953	99.98
7.5	668,631		0.0000	1.0000	99.52
8.5	661,526		0.0000	1.0000	99.52
9.5	622,592	12,303	0.0198	0.9802	99.52
10.5	529,371	373	0.0007	0.9993	97.55
11.5	209,362	2,752	0.0131	0.9869	97.48
12.5	204,311		0.0000	1.0000	96.20
13.5	220,425	18,073	0.0820	0.9180	96.20
14.5	208,207		0.0000	1.0000	88.31
15.5	208,207		0.0000	1.0000	88.31
16.5	165,317		0.0000	1.0000	88.31
17.5	193,471		0.0000	1.0000	88.31
18.5	210,457	1,510	0.0072	0.9928	88.31
19.5	223,914		0.0000	1.0000	87.68
20.5	223,914	140,772	0.6287	0.3713	87.68
21.5	67,028		0.0000	1.0000	32.56
22.5	73,481		0.0000	1.0000	32.56
23.5	73,481		0.0000	1.0000	32.56
24.5	73,481		0.0000	1.0000	32.56
25.5	44,261		0.0000	1.0000	32.56
26.5	27,275	1,047	0.0384	0.9616	32.56
27.5	11,260		0.0000	1.0000	31.31
28.5	11,260		0.0000	1.0000	31.31
29.5	11,260		0.0000	1.0000	31.31
30.5	11,260		0.0000	1.0000	31.31
31.5	11,260		0.0000	1.0000	31.31
32.5	11,260		0.0000	1.0000	31.31
33.5	11,260		0.0000	1.0000	31.31
34.5	11,260		0.0000	1.0000	31.31
35.5	450		0.0000	1.0000	31.31
36.5	450		0.0000	1.0000	31.31
37.5	450		0.0000	1.0000	31.31
38.5	450		0.0000	1.0000	31.31

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 2001-2019		
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	1.0000	31.31
40.5	450		0.0000	1.0000	31.31
41.5	450		0.0000	1.0000	31.31
42.5	450		0.0000	1.0000	31.31
43.5	450		0.0000	1.0000	31.31
44.5	450		0.0000	1.0000	31.31
45.5	450		0.0000	1.0000	31.31
46.5	450		0.0000	1.0000	31.31
47.5					31.31
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	3,519		0.0000		
78.5	3,519		0.0000		

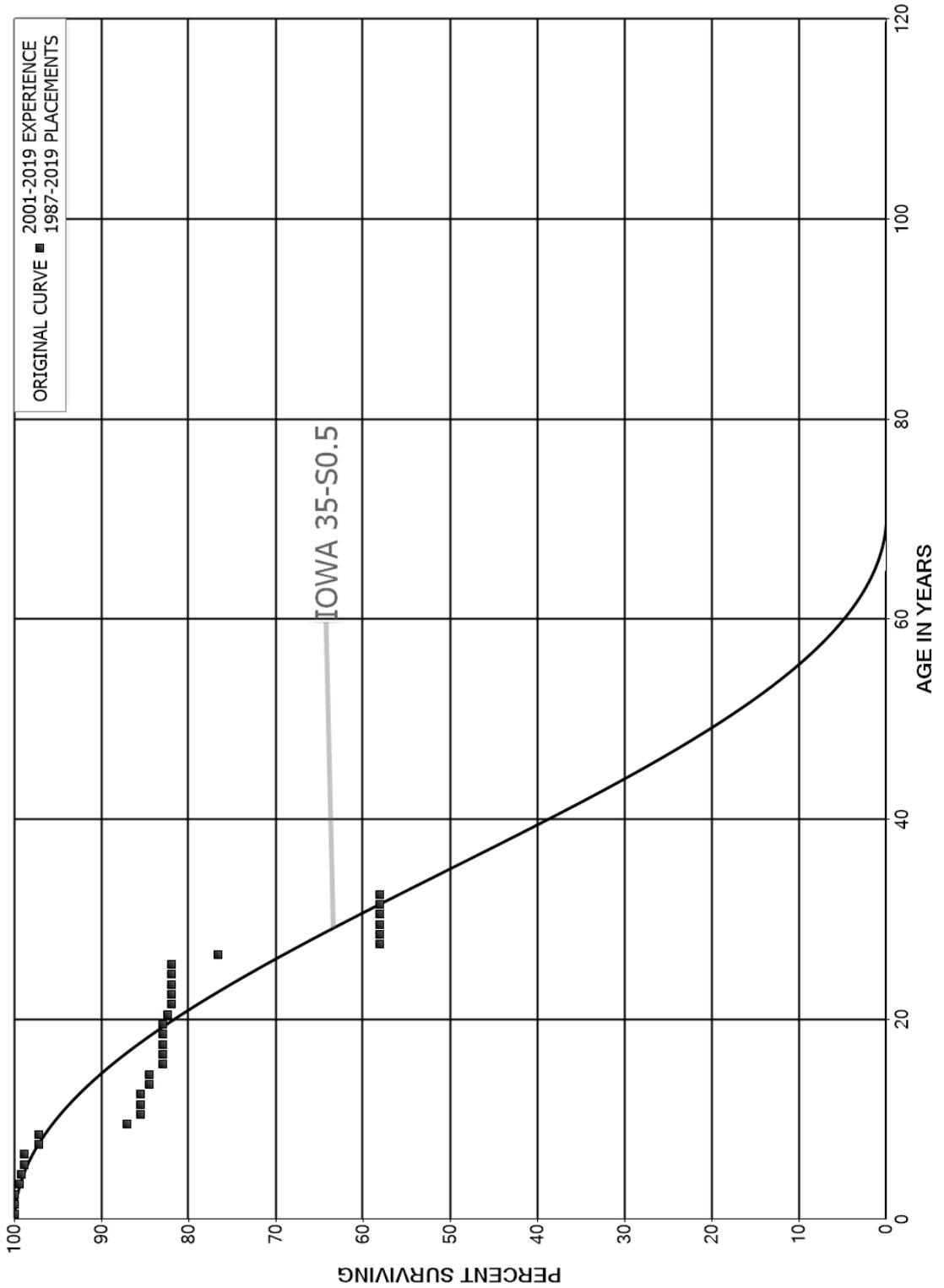
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 354.70 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 2001-2019		
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	3,519		0.0000		

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 355.00 POWER GENERATION EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

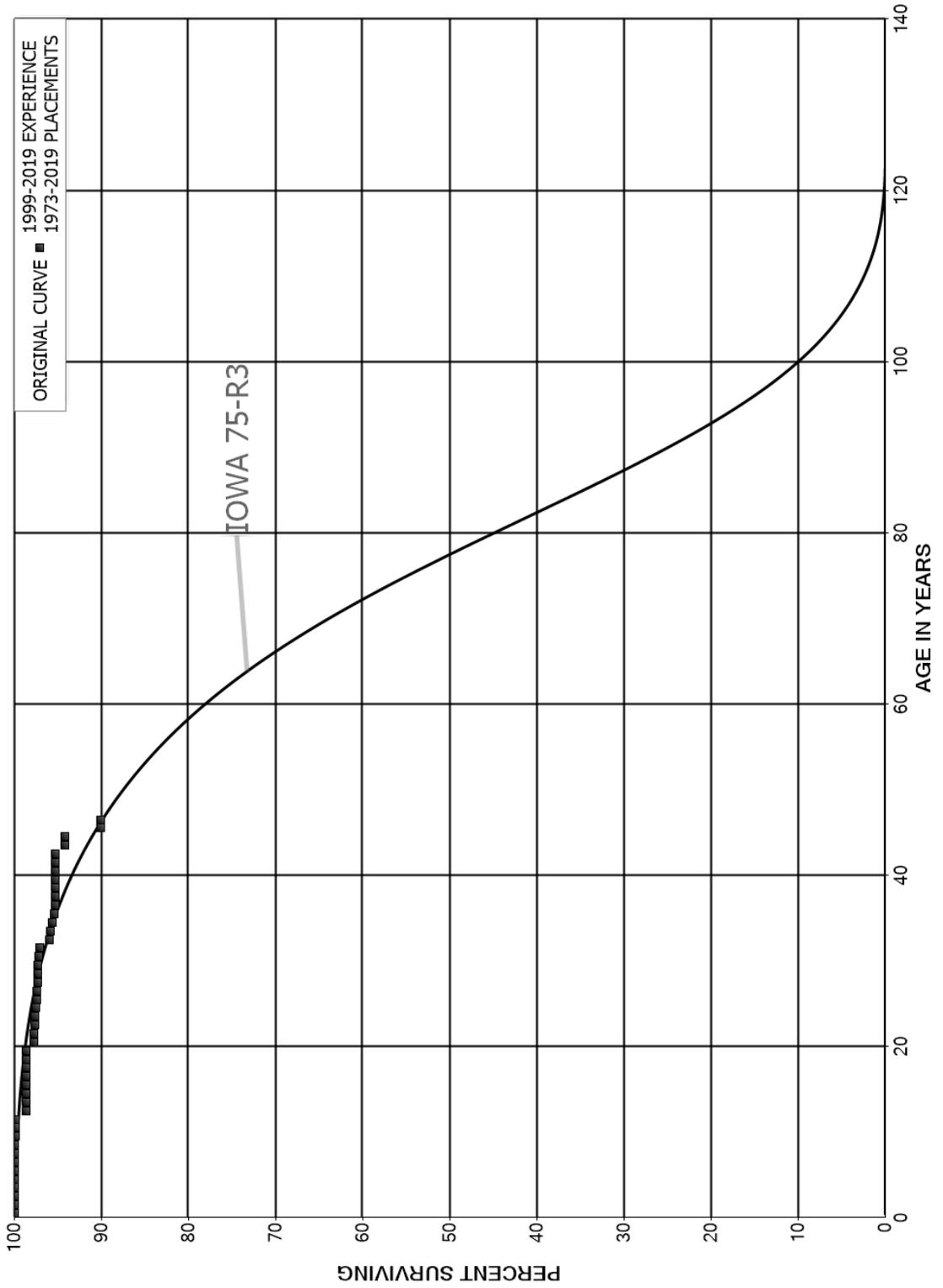
ORIGINAL LIFE TABLE

PLACEMENT BAND 1987-2019

EXPERIENCE BAND 2001-2019

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	3,656,122		0.0000	1.0000	100.00
0.5	3,685,338		0.0000	1.0000	100.00
1.5	4,385,880		0.0000	1.0000	100.00
2.5	4,494,639	26,926	0.0060	0.9940	100.00
3.5	4,479,665	10,161	0.0023	0.9977	99.40
4.5	4,398,000	14,523	0.0033	0.9967	99.18
5.5	3,773,674	1,387	0.0004	0.9996	98.85
6.5	3,828,658	61,470	0.0161	0.9839	98.81
7.5	3,336,361		0.0000	1.0000	97.23
8.5	3,321,984	347,576	0.1046	0.8954	97.23
9.5	2,953,727	51,388	0.0174	0.9826	87.05
10.5	328,249		0.0000	1.0000	85.54
11.5	144,528		0.0000	1.0000	85.54
12.5	267,555	3,097	0.0116	0.9884	85.54
13.5	327,093		0.0000	1.0000	84.55
14.5	278,538	5,336	0.0192	0.9808	84.55
15.5	281,064		0.0000	1.0000	82.93
16.5	293,645		0.0000	1.0000	82.93
17.5	241,944		0.0000	1.0000	82.93
18.5	203,466		0.0000	1.0000	82.93
19.5	203,466	1,204	0.0059	0.9941	82.93
20.5	202,262	1,103	0.0055	0.9945	82.44
21.5	432,455		0.0000	1.0000	81.99
22.5	402,008		0.0000	1.0000	81.99
23.5	402,008		0.0000	1.0000	81.99
24.5	402,008		0.0000	1.0000	81.99
25.5	402,978	26,388	0.0655	0.9345	81.99
26.5	174,978	42,310	0.2418	0.7582	76.62
27.5	89,880		0.0000	1.0000	58.09
28.5	68,585		0.0000	1.0000	58.09
29.5	68,585		0.0000	1.0000	58.09
30.5	19,246		0.0000	1.0000	58.09
31.5	19,246		0.0000	1.0000	58.09
32.5					58.09

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1973-2019

EXPERIENCE BAND 1999-2019

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	31,766,704	19	0.0000	1.0000	100.00
0.5	28,215,316	26	0.0000	1.0000	100.00
1.5	35,558,986	33	0.0000	1.0000	100.00
2.5	23,783,577	70	0.0000	1.0000	100.00
3.5	21,373,939	350	0.0000	1.0000	100.00
4.5	18,774,036	315	0.0000	1.0000	100.00
5.5	14,425,014	397	0.0000	1.0000	100.00
6.5	14,188,090	1,611	0.0001	0.9999	99.99
7.5	14,122,868	1,747	0.0001	0.9999	99.98
8.5	13,850,582	16,747	0.0012	0.9988	99.97
9.5	13,465,099	64	0.0000	1.0000	99.85
10.5	13,318,392	82	0.0000	1.0000	99.85
11.5	10,748,868	127,626	0.0119	0.9881	99.85
12.5	9,661,386		0.0000	1.0000	98.66
13.5	7,868,737	3,291	0.0004	0.9996	98.66
14.5	7,779,655	99	0.0000	1.0000	98.62
15.5	5,905,707	9	0.0000	1.0000	98.62
16.5	5,774,986	949	0.0002	0.9998	98.62
17.5	5,344,267	1,253	0.0002	0.9998	98.60
18.5	4,614,847	826	0.0002	0.9998	98.58
19.5	4,197,905	37,017	0.0088	0.9912	98.56
20.5	3,986,776	70	0.0000	1.0000	97.69
21.5	4,475,797	1,897	0.0004	0.9996	97.69
22.5	3,907,599	569	0.0001	0.9999	97.65
23.5	4,900,347	3,932	0.0008	0.9992	97.64
24.5	6,419,851	13,411	0.0021	0.9979	97.56
25.5	6,580,720	788	0.0001	0.9999	97.35
26.5	6,033,834	1,095	0.0002	0.9998	97.34
27.5	6,011,515	2,049	0.0003	0.9997	97.32
28.5	5,991,855	3,135	0.0005	0.9995	97.29
29.5	6,011,945	3,365	0.0006	0.9994	97.24
30.5	5,911,879	4,784	0.0008	0.9992	97.19
31.5	5,517,306	65,876	0.0119	0.9881	97.11
32.5	5,225,480	4,106	0.0008	0.9992	95.95
33.5	5,192,765	13,636	0.0026	0.9974	95.87
34.5	4,869,190	12,733	0.0026	0.9974	95.62
35.5	4,856,457	2,869	0.0006	0.9994	95.37
36.5	4,661,206	15	0.0000	1.0000	95.31
37.5	4,607,713		0.0000	1.0000	95.31
38.5	4,446,768	1,883	0.0004	0.9996	95.31

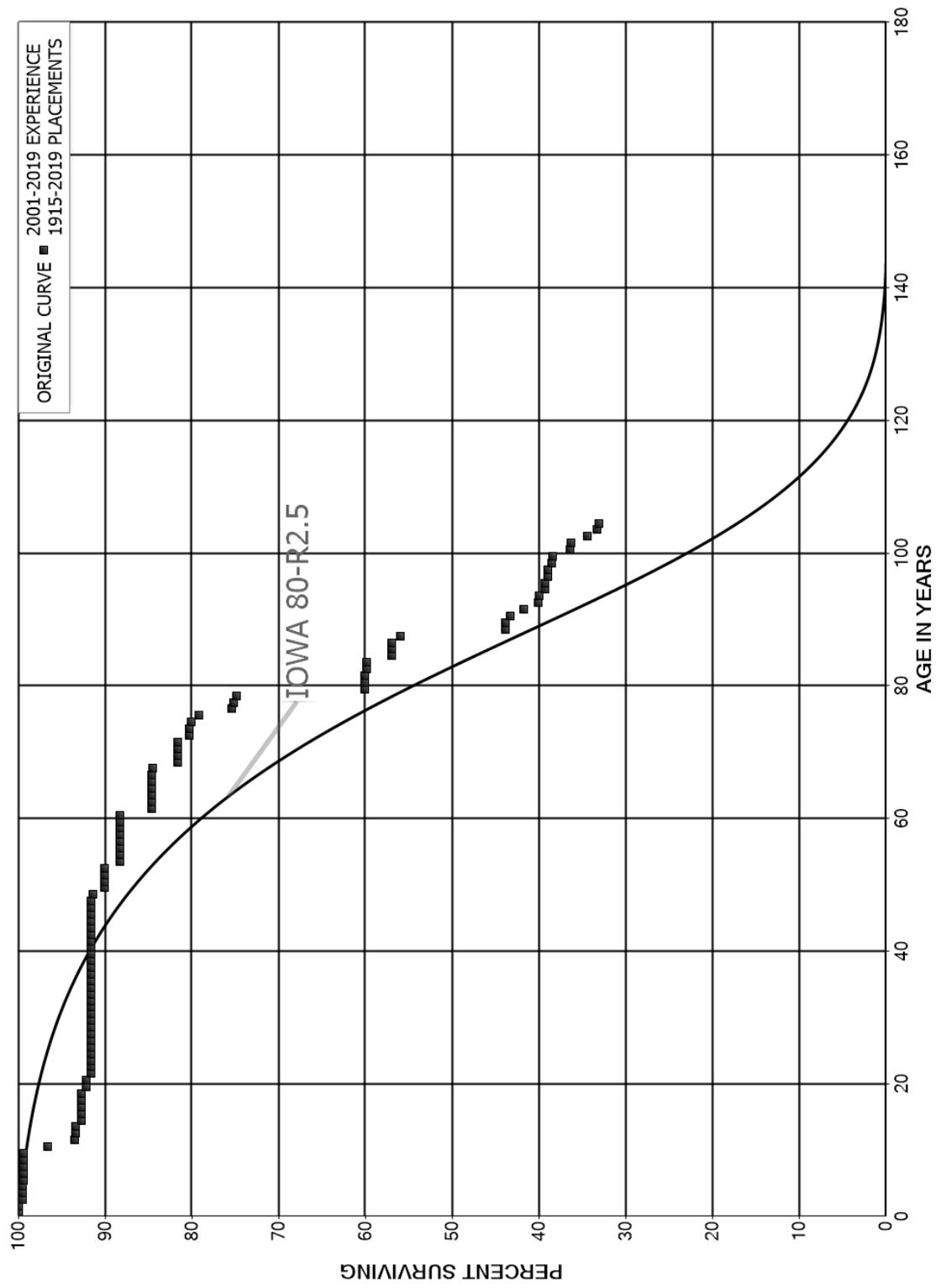
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1973-2019			EXPERIENCE BAND 1999-2019			
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	4,369,779	82	0.0000	1.0000	95.27	
40.5	4,295,948	6	0.0000	1.0000	95.27	
41.5	4,025,587	0	0.0000	1.0000	95.27	
42.5	3,566,737	42,283	0.0119	0.9881	95.27	
43.5	2,553,034		0.0000	1.0000	94.14	
44.5	1,703,254	73,783	0.0433	0.9567	94.14	
45.5	125,695		0.0000	1.0000	90.06	
46.5					90.06	

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1915-2019

EXPERIENCE BAND 2001-2019

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	123,698,865	1,489	0.0000	1.0000	100.00
0.5	80,968,134	1,744	0.0000	1.0000	100.00
1.5	71,427,735	349,743	0.0049	0.9951	100.00
2.5	61,491,291		0.0000	1.0000	99.51
3.5	47,985,505		0.0000	1.0000	99.51
4.5	43,496,282	26,093	0.0006	0.9994	99.51
5.5	34,622,702	11,064	0.0003	0.9997	99.45
6.5	36,236,717	10,556	0.0003	0.9997	99.42
7.5	44,473,440	0	0.0000	1.0000	99.39
8.5	44,403,805	13,334	0.0003	0.9997	99.39
9.5	42,579,956	1,180,167	0.0277	0.9723	99.36
10.5	27,257,562	886,763	0.0325	0.9675	96.60
11.5	23,041,413	10,064	0.0004	0.9996	93.46
12.5	15,696,984	13,300	0.0008	0.9992	93.42
13.5	13,197,516	82,522	0.0063	0.9937	93.34
14.5	9,898,866	187	0.0000	1.0000	92.76
15.5	8,175,329	367	0.0000	1.0000	92.75
16.5	11,005,722	1,374	0.0001	0.9999	92.75
17.5	22,668,123		0.0000	1.0000	92.74
18.5	22,367,436	144,378	0.0065	0.9935	92.74
19.5	21,841,271		0.0000	1.0000	92.14
20.5	10,429,000	56,430	0.0054	0.9946	92.14
21.5	13,494,984		0.0000	1.0000	91.64
22.5	12,095,717		0.0000	1.0000	91.64
23.5	13,846,891		0.0000	1.0000	91.64
24.5	14,182,481		0.0000	1.0000	91.64
25.5	19,071,002		0.0000	1.0000	91.64
26.5	16,170,692		0.0000	1.0000	91.64
27.5	36,060,280		0.0000	1.0000	91.64
28.5	35,923,542		0.0000	1.0000	91.64
29.5	33,683,971		0.0000	1.0000	91.64
30.5	8,391,683	866	0.0001	0.9999	91.64
31.5	8,167,272	21	0.0000	1.0000	91.63
32.5	8,027,418		0.0000	1.0000	91.63
33.5	7,266,714		0.0000	1.0000	91.63
34.5	5,540,059		0.0000	1.0000	91.63
35.5	3,406,034		0.0000	1.0000	91.63
36.5	3,951,146		0.0000	1.0000	91.63
37.5	4,287,296		0.0000	1.0000	91.63
38.5	4,273,219		0.0000	1.0000	91.63

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1915-2019			EXPERIENCE BAND 2001-2019		
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	4,243,666		0.0000	1.0000	91.63
40.5	41,503,891	5,447	0.0001	0.9999	91.63
41.5	41,043,016	49	0.0000	1.0000	91.62
42.5	41,341,828		0.0000	1.0000	91.62
43.5	20,516,395		0.0000	1.0000	91.62
44.5	17,262,745	4,573	0.0003	0.9997	91.62
45.5	17,447,879		0.0000	1.0000	91.60
46.5	16,922,111	1,617	0.0001	0.9999	91.60
47.5	1,493,981	2,878	0.0019	0.9981	91.59
48.5	1,491,103	21,283	0.0143	0.9857	91.41
49.5	995,707	187	0.0002	0.9998	90.11
50.5	1,249,631		0.0000	1.0000	90.09
51.5	1,214,773		0.0000	1.0000	90.09
52.5	1,253,366	24,618	0.0196	0.9804	90.09
53.5	28,374,663		0.0000	1.0000	88.32
54.5	38,998,170		0.0000	1.0000	88.32
55.5	39,986,553		0.0000	1.0000	88.32
56.5	13,005,874		0.0000	1.0000	88.32
57.5	59,432,346		0.0000	1.0000	88.32
58.5	60,820,282	557	0.0000	1.0000	88.32
59.5	59,761,303	747	0.0000	1.0000	88.32
60.5	2,094,297	87,761	0.0419	0.9581	88.32
61.5	22,663,762	8	0.0000	1.0000	84.62
62.5	21,213,491	61	0.0000	1.0000	84.62
63.5	21,215,934	289	0.0000	1.0000	84.62
64.5	46,353		0.0000	1.0000	84.62
65.5	1,102,303		0.0000	1.0000	84.62
66.5	1,102,303	1,673	0.0015	0.9985	84.62
67.5	1,100,630	37,140	0.0337	0.9663	84.49
68.5	1,259,440		0.0000	1.0000	81.64
69.5	290,689		0.0000	1.0000	81.64
70.5	962,463	168	0.0002	0.9998	81.64
71.5	962,295	15,230	0.0158	0.9842	81.62
72.5	1,042,298	993	0.0010	0.9990	80.33
73.5	946,072	2,053	0.0022	0.9978	80.25
74.5	683,176	7,508	0.0110	0.9890	80.08
75.5	675,668	32,767	0.0485	0.9515	79.20
76.5	642,901	1,310	0.0020	0.9980	75.36
77.5	1,531,686	8,017	0.0052	0.9948	75.20
78.5	1,523,669	299,242	0.1964	0.8036	74.81

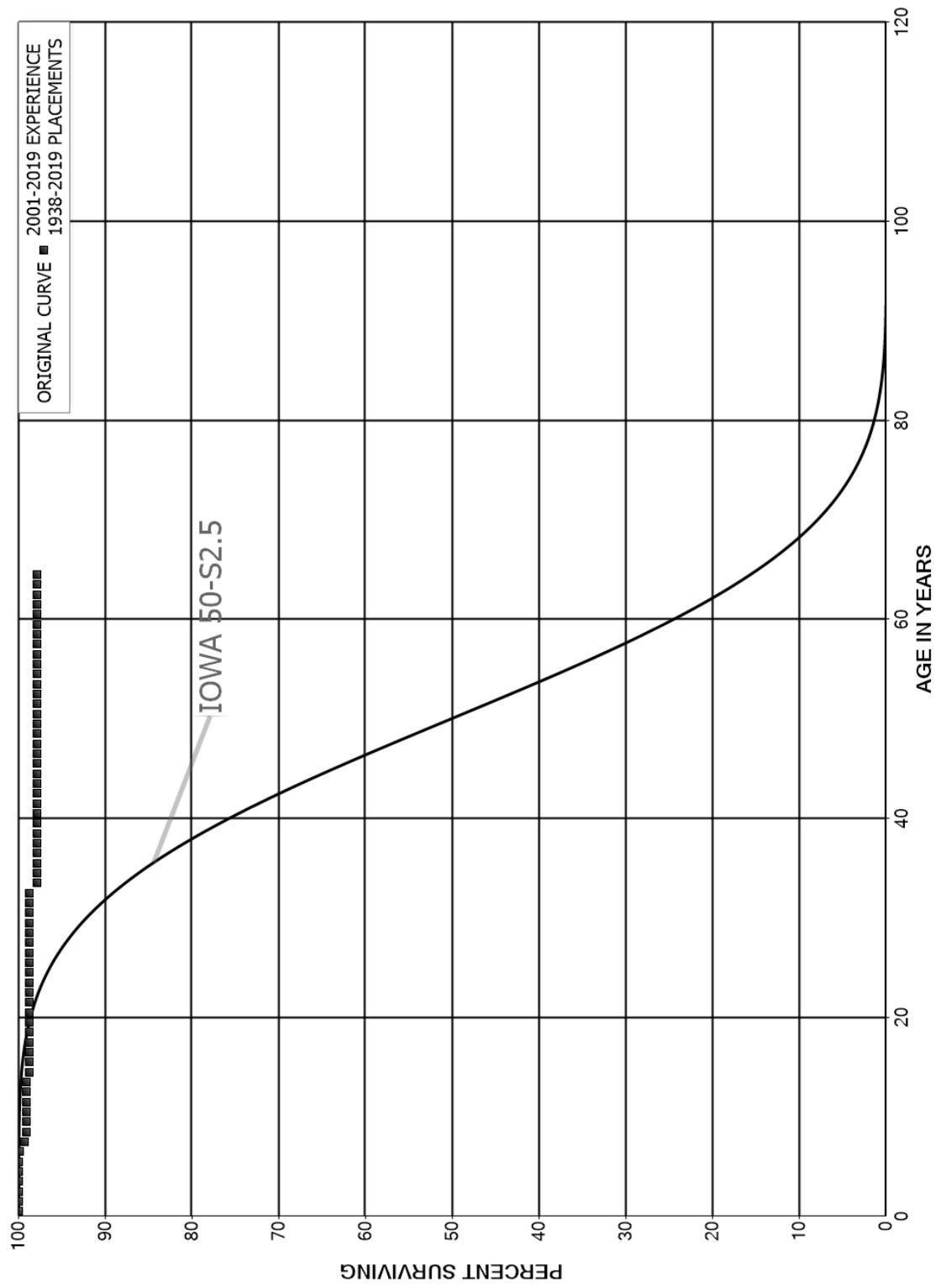
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1915-2019			EXPERIENCE BAND 2001-2019			
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	1,224,427	291	0.0002	0.9998	60.12	
80.5	1,522,508		0.0000	1.0000	60.10	
81.5	632,413	2,303	0.0036	0.9964	60.10	
82.5	648,868		0.0000	1.0000	59.89	
83.5	648,868	31,252	0.0482	0.9518	59.89	
84.5	601,981	10	0.0000	1.0000	57.00	
85.5	722,814		0.0000	1.0000	57.00	
86.5	722,814	13,485	0.0187	0.9813	57.00	
87.5	709,329	153,014	0.2157	0.7843	55.94	
88.5	556,315	264	0.0005	0.9995	43.87	
89.5	329,027	4,352	0.0132	0.9868	43.85	
90.5	306,175	11,276	0.0368	0.9632	43.27	
91.5	294,898	11,132	0.0377	0.9623	41.68	
92.5	283,767	1,273	0.0045	0.9955	40.10	
93.5	282,494	4,366	0.0155	0.9845	39.92	
94.5	278,128	221	0.0008	0.9992	39.31	
95.5	277,906	1,967	0.0071	0.9929	39.27	
96.5	275,939	42	0.0002	0.9998	39.00	
97.5	3,804,626	42,906	0.0113	0.9887	38.99	
98.5	3,761,720	15,091	0.0040	0.9960	38.55	
99.5	3,616,599	191,754	0.0530	0.9470	38.40	
100.5	3,424,846	6,012	0.0018	0.9982	36.36	
101.5	96,405	5,167	0.0536	0.9464	36.30	
102.5	91,238	2,967	0.0325	0.9675	34.35	
103.5	88,271	309	0.0035	0.9965	33.23	
104.5					33.12	

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 361.20 MANHOLES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.20 MANHOLES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1938-2019

EXPERIENCE BAND 2001-2019

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	14,379,651		0.0000	1.0000	100.00
0.5	10,176,887		0.0000	1.0000	100.00
1.5	10,661,285	0	0.0000	1.0000	100.00
2.5	11,952,425		0.0000	1.0000	100.00
3.5	12,083,028	911	0.0001	0.9999	100.00
4.5	7,585,455		0.0000	1.0000	99.99
5.5	5,573,639	6,667	0.0012	0.9988	99.99
6.5	4,589,383	27,566	0.0060	0.9940	99.87
7.5	4,569,090	10,961	0.0024	0.9976	99.27
8.5	5,066,097		0.0000	1.0000	99.03
9.5	5,304,644		0.0000	1.0000	99.03
10.5	5,838,060		0.0000	1.0000	99.03
11.5	5,353,439		0.0000	1.0000	99.03
12.5	4,555,554		0.0000	1.0000	99.03
13.5	4,114,028	12,188	0.0030	0.9970	99.03
14.5	2,635,311		0.0000	1.0000	98.74
15.5	2,105,291	0	0.0000	1.0000	98.74
16.5	2,247,105	472	0.0002	0.9998	98.74
17.5	2,934,821		0.0000	1.0000	98.72
18.5	2,849,242		0.0000	1.0000	98.72
19.5	2,782,656		0.0000	1.0000	98.72
20.5	2,425,509	0	0.0000	1.0000	98.72
21.5	1,772,096		0.0000	1.0000	98.72
22.5	970,343		0.0000	1.0000	98.72
23.5	1,299,611		0.0000	1.0000	98.72
24.5	1,741,110		0.0000	1.0000	98.72
25.5	2,636,710		0.0000	1.0000	98.72
26.5	3,361,749		0.0000	1.0000	98.72
27.5	3,450,899		0.0000	1.0000	98.72
28.5	3,240,536		0.0000	1.0000	98.72
29.5	2,574,979		0.0000	1.0000	98.72
30.5	1,538,799		0.0000	1.0000	98.72
31.5	1,635,548		0.0000	1.0000	98.72
32.5	1,551,747	13,277	0.0086	0.9914	98.72
33.5	1,328,056		0.0000	1.0000	97.88
34.5	1,038,030		0.0000	1.0000	97.88
35.5	1,093,592		0.0000	1.0000	97.88
36.5	1,326,879		0.0000	1.0000	97.88
37.5	1,450,927		0.0000	1.0000	97.88
38.5	1,304,196		0.0000	1.0000	97.88

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 361.20 MANHOLES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1938-2019			EXPERIENCE BAND 2001-2019		
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	994,944		0.0000	1.0000	97.88
40.5	2,263,935		0.0000	1.0000	97.88
41.5	2,043,826		0.0000	1.0000	97.88
42.5	2,216,232		0.0000	1.0000	97.88
43.5	2,406,018		0.0000	1.0000	97.88
44.5	2,040,304		0.0000	1.0000	97.88
45.5	2,008,665		0.0000	1.0000	97.88
46.5	1,708,150		0.0000	1.0000	97.88
47.5	301,817		0.0000	1.0000	97.88
48.5	301,817		0.0000	1.0000	97.88
49.5	170,327		0.0000	1.0000	97.88
50.5	201,568		0.0000	1.0000	97.88
51.5	166,180		0.0000	1.0000	97.88
52.5	172,781		0.0000	1.0000	97.88
53.5	1,995,623		0.0000	1.0000	97.88
54.5	1,827,036		0.0000	1.0000	97.88
55.5	1,951,871		0.0000	1.0000	97.88
56.5	131,436		0.0000	1.0000	97.88
57.5	10,950,272		0.0000	1.0000	97.88
58.5	10,950,272		0.0000	1.0000	97.88
59.5	10,825,437		0.0000	1.0000	97.88
60.5	89,564		0.0000	1.0000	97.88
61.5	89,564		0.0000	1.0000	97.88
62.5	89,564		0.0000	1.0000	97.88
63.5	89,564		0.0000	1.0000	97.88
64.5					97.88
65.5	100,437		0.0000		
66.5	100,437		0.0000		
67.5	123,426		0.0000		
68.5	167,059	22,989	0.1376		
69.5	43,633		0.0000		
70.5	84,331		0.0000		
71.5	84,331		0.0000		
72.5	90,699		0.0000		
73.5	84,331		0.0000		
74.5	43,633		0.0000		
75.5	43,633		0.0000		
76.5	43,633		0.0000		
77.5	306,691		0.0000		
78.5	306,691		0.0000		

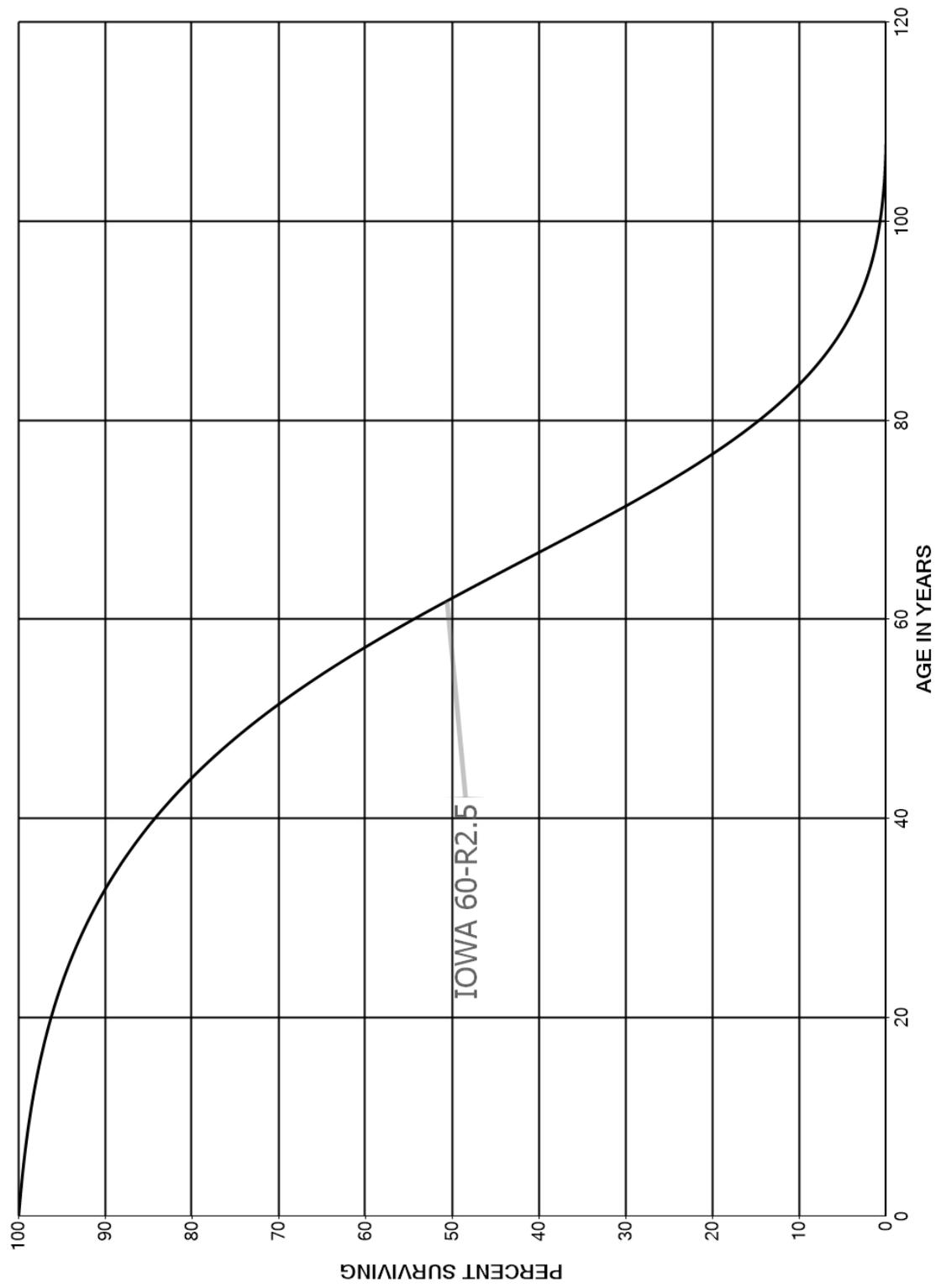
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 361.20 MANHOLES

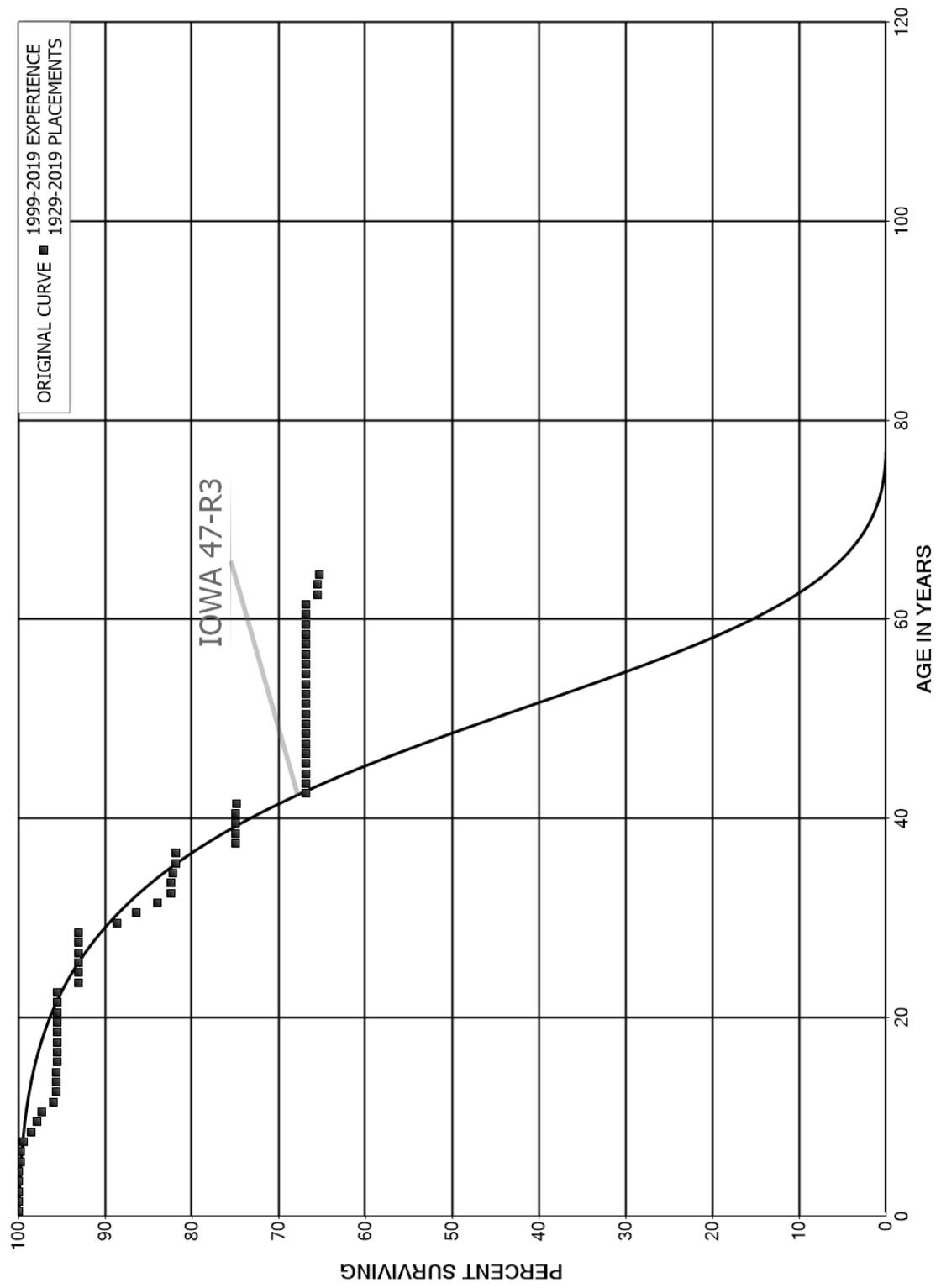
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1938-2019			EXPERIENCE BAND 2001-2019		
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	306,691	1,171	0.0038		
80.5	263,058		0.0000		
81.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 362.00 SPECIAL COLLECTION STRUCTURES
 SMOOTH SURVIVOR CURVE



PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 363.00 SERVICES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1929-2019

EXPERIENCE BAND 1999-2019

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	10,615,796	0	0.0000	1.0000	100.00
0.5	10,038,138	0	0.0000	1.0000	100.00
1.5	9,510,472	60	0.0000	1.0000	100.00
2.5	8,790,677	5,668	0.0006	0.9994	100.00
3.5	8,679,530	421	0.0000	1.0000	99.93
4.5	7,932,683	12,635	0.0016	0.9984	99.93
5.5	6,966,530	2,890	0.0004	0.9996	99.77
6.5	8,411,000	31,963	0.0038	0.9962	99.73
7.5	8,278,555	65,894	0.0080	0.9920	99.35
8.5	8,313,922	64,649	0.0078	0.9922	98.56
9.5	8,351,147	42,617	0.0051	0.9949	97.79
10.5	6,470,010	87,729	0.0136	0.9864	97.29
11.5	6,246,021	19,892	0.0032	0.9968	95.98
12.5	5,858,877	0	0.0000	1.0000	95.67
13.5	4,698,450	4,942	0.0011	0.9989	95.67
14.5	4,095,435	871	0.0002	0.9998	95.57
15.5	3,284,377		0.0000	1.0000	95.55
16.5	3,511,888	0	0.0000	1.0000	95.55
17.5	3,953,464	0	0.0000	1.0000	95.55
18.5	3,909,166	55	0.0000	1.0000	95.55
19.5	3,630,733		0.0000	1.0000	95.55
20.5	3,925,137		0.0000	1.0000	95.55
21.5	3,646,749		0.0000	1.0000	95.55
22.5	3,395,484	87,997	0.0259	0.9741	95.55
23.5	3,780,922		0.0000	1.0000	93.07
24.5	4,115,954	497	0.0001	0.9999	93.07
25.5	5,003,579		0.0000	1.0000	93.06
26.5	5,176,777		0.0000	1.0000	93.06
27.5	4,635,070		0.0000	1.0000	93.06
28.5	4,421,930	209,578	0.0474	0.9526	93.06
29.5	3,596,999	92,585	0.0257	0.9743	88.65
30.5	2,947,708	80,733	0.0274	0.9726	86.37
31.5	2,783,645	51,927	0.0187	0.9813	84.00
32.5	2,491,265	1,241	0.0005	0.9995	82.43
33.5	2,228,511	4,871	0.0022	0.9978	82.39
34.5	1,965,612	8,461	0.0043	0.9957	82.21
35.5	1,925,423	503	0.0003	0.9997	81.86
36.5	1,973,278	167,021	0.0846	0.9154	81.84
37.5	1,839,375	192	0.0001	0.9999	74.91
38.5	1,657,395		0.0000	1.0000	74.90

PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1929-2019			EXPERIENCE BAND 1999-2019		
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	1,207,182		0.0000	1.0000	74.90
40.5	1,197,802	385	0.0003	0.9997	74.90
41.5	1,022,673	110,064	0.1076	0.8924	74.88
42.5	886,687		0.0000	1.0000	66.82
43.5	1,408,938		0.0000	1.0000	66.82
44.5	900,914		0.0000	1.0000	66.82
45.5	855,938		0.0000	1.0000	66.82
46.5	736,586		0.0000	1.0000	66.82
47.5	156,414		0.0000	1.0000	66.82
48.5	155,860		0.0000	1.0000	66.82
49.5	82,277		0.0000	1.0000	66.82
50.5	145,022		0.0000	1.0000	66.82
51.5	132,653		0.0000	1.0000	66.82
52.5	134,754	0	0.0000	1.0000	66.82
53.5	137,757		0.0000	1.0000	66.82
54.5	20,119		0.0000	1.0000	66.82
55.5	100,869		0.0000	1.0000	66.82
56.5	100,869		0.0000	1.0000	66.82
57.5	97,866		0.0000	1.0000	66.82
58.5	256,316		0.0000	1.0000	66.82
59.5	180,162	20	0.0001	0.9999	66.82
60.5	228,822		0.0000	1.0000	66.81
61.5	228,822	4,595	0.0201	0.9799	66.81
62.5	50,781		0.0000	1.0000	65.47
63.5	50,781	162	0.0032	0.9968	65.47
64.5					65.26
65.5	60,144		0.0000		
66.5	60,144		0.0000		
67.5	60,144		0.0000		
68.5	70,211		0.0000		
69.5	13,932	819	0.0588		
70.5	36,101		0.0000		
71.5	36,101	4,521	0.1252		
72.5	31,580	1,251	0.0396		
73.5	30,329	442	0.0146		
74.5	6,899	644	0.0933		
75.5	6,255		0.0000		
76.5	6,255		0.0000		
77.5	151,010		0.0000		
78.5	151,010		0.0000		

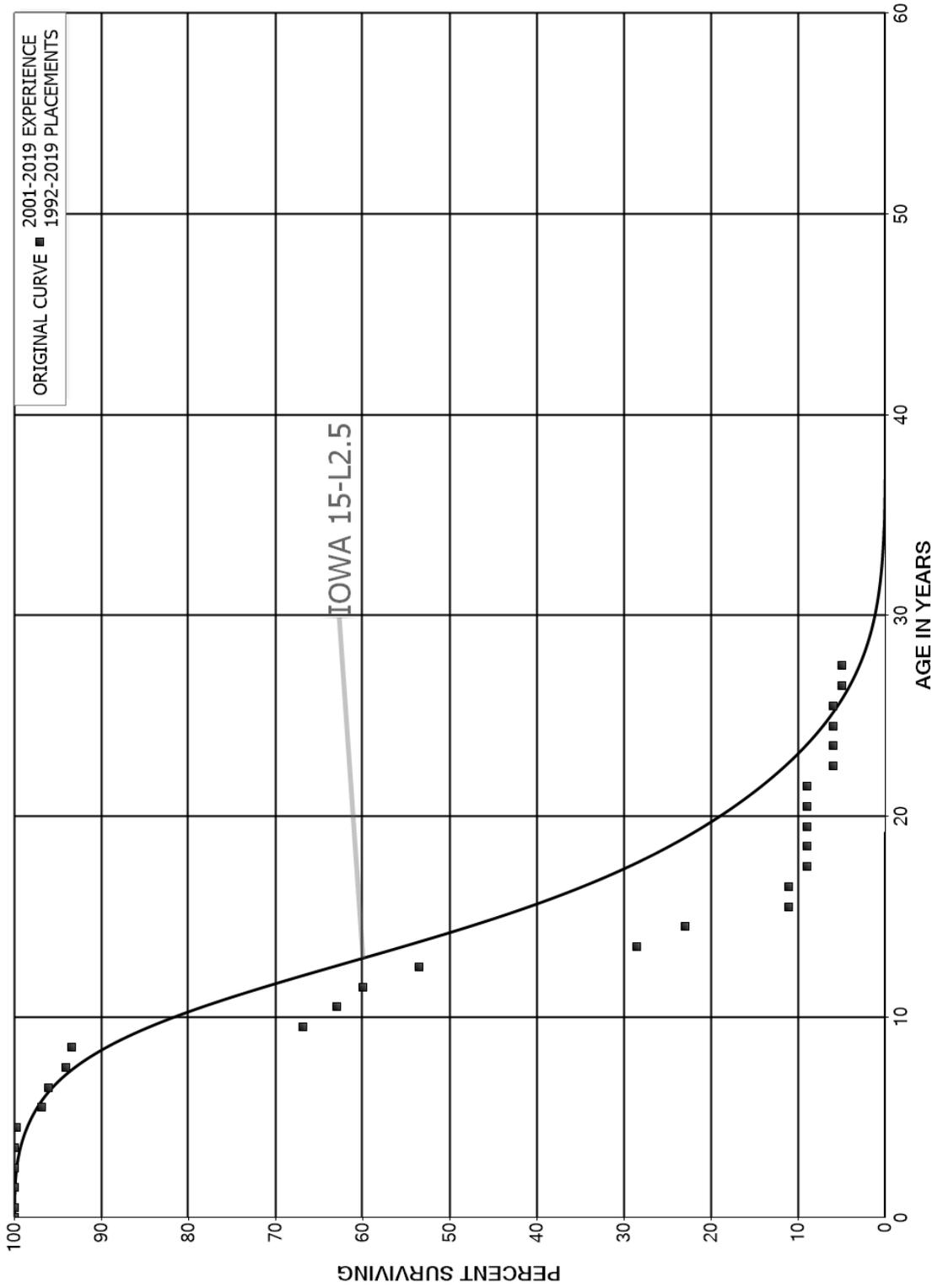
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 363.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1929-2019			EXPERIENCE BAND 1999-2019		
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	151,010		0.0000		
80.5	144,755	1,628	0.0112		
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	717		0.0000		
88.5	717		0.0000		
89.5	717		0.0000		
90.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 364.00 FLOW MEASURING DEVICES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



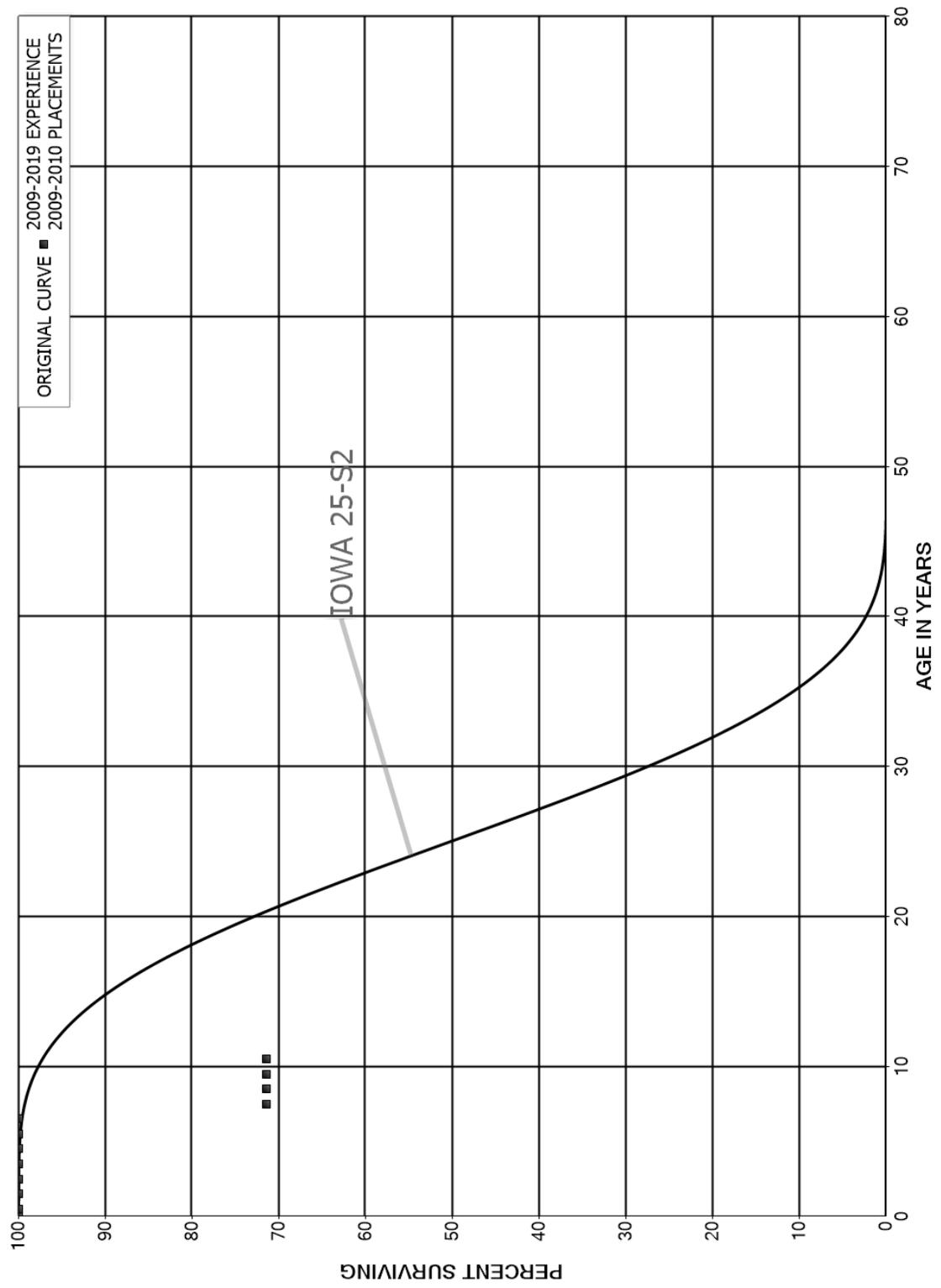
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1992-2019			EXPERIENCE BAND 2001-2019		
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	1,359,184		0.0000	1.0000	100.00
0.5	993,961		0.0000	1.0000	100.00
1.5	1,007,023		0.0000	1.0000	100.00
2.5	1,088,761		0.0000	1.0000	100.00
3.5	829,368	2,564	0.0031	0.9969	100.00
4.5	790,917	22,463	0.0284	0.9716	99.69
5.5	745,466	5,882	0.0079	0.9921	96.86
6.5	575,156	12,254	0.0213	0.9787	96.10
7.5	576,785	4,337	0.0075	0.9925	94.05
8.5	639,652	181,670	0.2840	0.7160	93.34
9.5	332,968	19,182	0.0576	0.9424	66.83
10.5	221,704	10,816	0.0488	0.9512	62.98
11.5	90,287	9,617	0.1065	0.8935	59.91
12.5	71,639	33,466	0.4671	0.5329	53.53
13.5	31,704	6,133	0.1934	0.8066	28.52
14.5	16,849	8,739	0.5187	0.4813	23.00
15.5	16,281		0.0000	1.0000	11.07
16.5	16,281	3,203	0.1967	0.8033	11.07
17.5	13,078		0.0000	1.0000	8.90
18.5	13,078		0.0000	1.0000	8.90
19.5	13,078		0.0000	1.0000	8.90
20.5	13,078		0.0000	1.0000	8.90
21.5	13,078	4,272	0.3266	0.6734	8.90
22.5	8,806		0.0000	1.0000	5.99
23.5	8,806		0.0000	1.0000	5.99
24.5	8,806		0.0000	1.0000	5.99
25.5	8,806	1,522	0.1728	0.8272	5.99
26.5	7,285		0.0000	1.0000	4.95
27.5					4.95

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



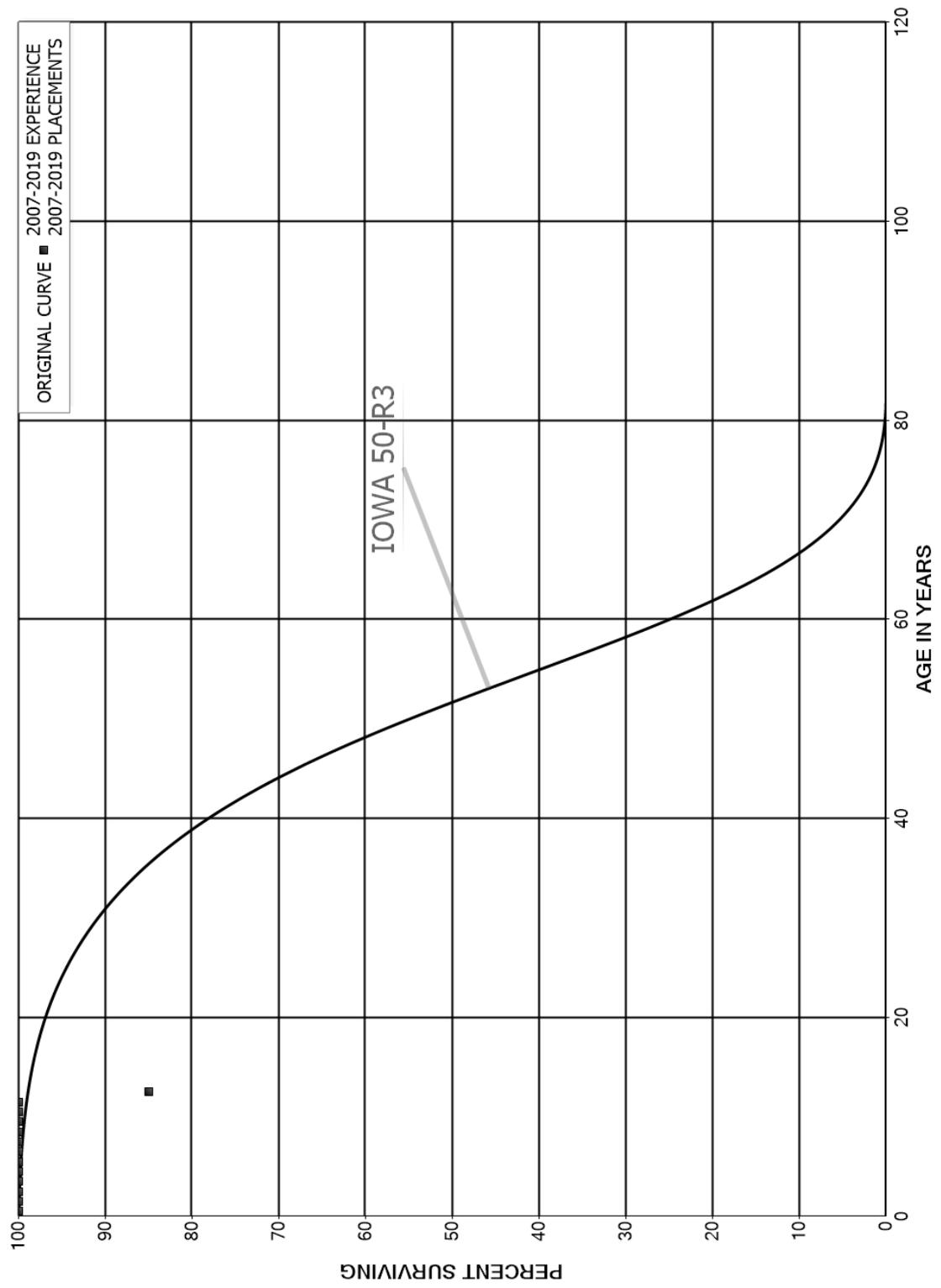
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 365.00 FLOW MEASURING INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2009-2010			EXPERIENCE BAND 2009-2019		
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	20,918	5,980	0.2859	0.7141	100.00
7.5	14,938		0.0000	1.0000	71.41
8.5	14,938		0.0000	1.0000	71.41
9.5	14,938		0.0000	1.0000	71.41
10.5					71.41

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 370.00 RECEIVING WELLS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



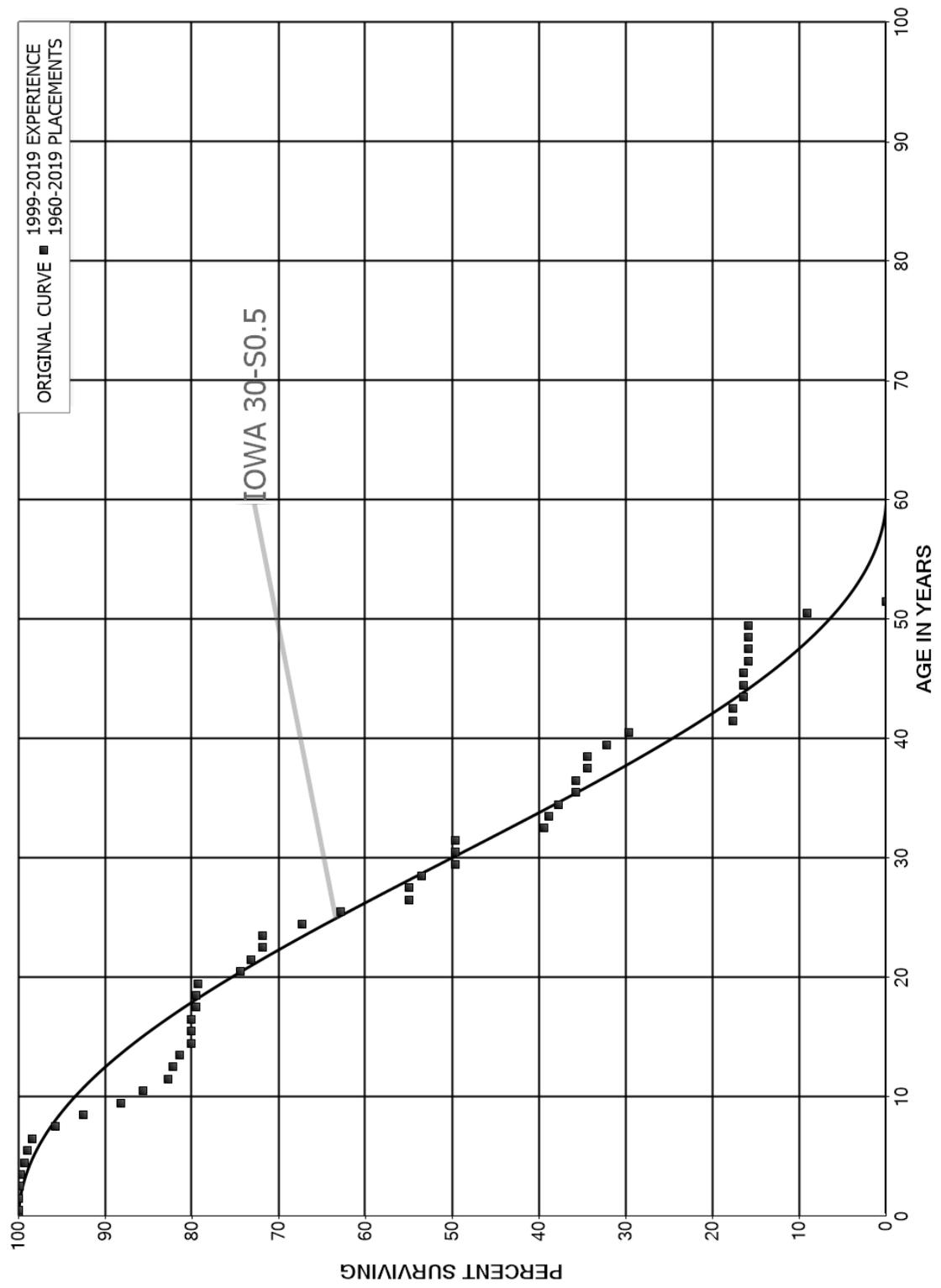
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 370.00 RECEIVING WELLS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2007-2019			EXPERIENCE BAND 2007-2019		
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	121,180		0.0000	1.0000	100.00
0.5	111,148		0.0000	1.0000	100.00
1.5	111,148		0.0000	1.0000	100.00
2.5	132,949		0.0000	1.0000	100.00
3.5	132,949		0.0000	1.0000	100.00
4.5	132,949		0.0000	1.0000	100.00
5.5	132,949		0.0000	1.0000	100.00
6.5	99,482		0.0000	1.0000	100.00
7.5	99,482		0.0000	1.0000	100.00
8.5	99,482		0.0000	1.0000	100.00
9.5	99,482		0.0000	1.0000	100.00
10.5	7,370		0.0000	1.0000	100.00
11.5	7,370	1,109	0.1505	0.8495	100.00
12.5					84.95

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 371.00 PUMPING EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1960-2019

EXPERIENCE BAND 1999-2019

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	13,928,914		0.0000	1.0000	100.00
0.5	8,653,630	5,419	0.0006	0.9994	100.00
1.5	11,021,964	12,306	0.0011	0.9989	99.94
2.5	10,781,219	12,096	0.0011	0.9989	99.83
3.5	9,453,412	44,345	0.0047	0.9953	99.71
4.5	6,817,321	23,246	0.0034	0.9966	99.25
5.5	5,785,361	27,560	0.0048	0.9952	98.91
6.5	5,413,591	148,677	0.0275	0.9725	98.44
7.5	3,768,518	126,794	0.0336	0.9664	95.73
8.5	3,446,810	160,001	0.0464	0.9536	92.51
9.5	2,549,487	73,710	0.0289	0.9711	88.22
10.5	1,455,129	50,056	0.0344	0.9656	85.67
11.5	1,043,502	7,445	0.0071	0.9929	82.72
12.5	1,137,255	10,025	0.0088	0.9912	82.13
13.5	837,345	14,096	0.0168	0.9832	81.41
14.5	784,395		0.0000	1.0000	80.04
15.5	677,887		0.0000	1.0000	80.04
16.5	534,434	3,610	0.0068	0.9932	80.04
17.5	610,401	101	0.0002	0.9998	79.50
18.5	664,971	1,413	0.0021	0.9979	79.48
19.5	663,558	41,426	0.0624	0.9376	79.31
20.5	588,736	9,514	0.0162	0.9838	74.36
21.5	638,927	11,409	0.0179	0.9821	73.16
22.5	599,786		0.0000	1.0000	71.85
23.5	517,501	33,177	0.0641	0.9359	71.85
24.5	484,324	31,555	0.0652	0.9348	67.25
25.5	497,723	62,415	0.1254	0.8746	62.87
26.5	428,133		0.0000	1.0000	54.98
27.5	312,603	8,673	0.0277	0.9723	54.98
28.5	241,647	17,595	0.0728	0.9272	53.46
29.5	235,281		0.0000	1.0000	49.56
30.5	280,168		0.0000	1.0000	49.56
31.5	280,168	57,666	0.2058	0.7942	49.56
32.5	222,502	2,887	0.0130	0.9870	39.36
33.5	140,599	3,932	0.0280	0.9720	38.85
34.5	136,159	7,170	0.0527	0.9473	37.77
35.5	183,946		0.0000	1.0000	35.78
36.5	183,946	7,008	0.0381	0.9619	35.78
37.5	176,938		0.0000	1.0000	34.41
38.5	127,299	8,408	0.0660	0.9340	34.41

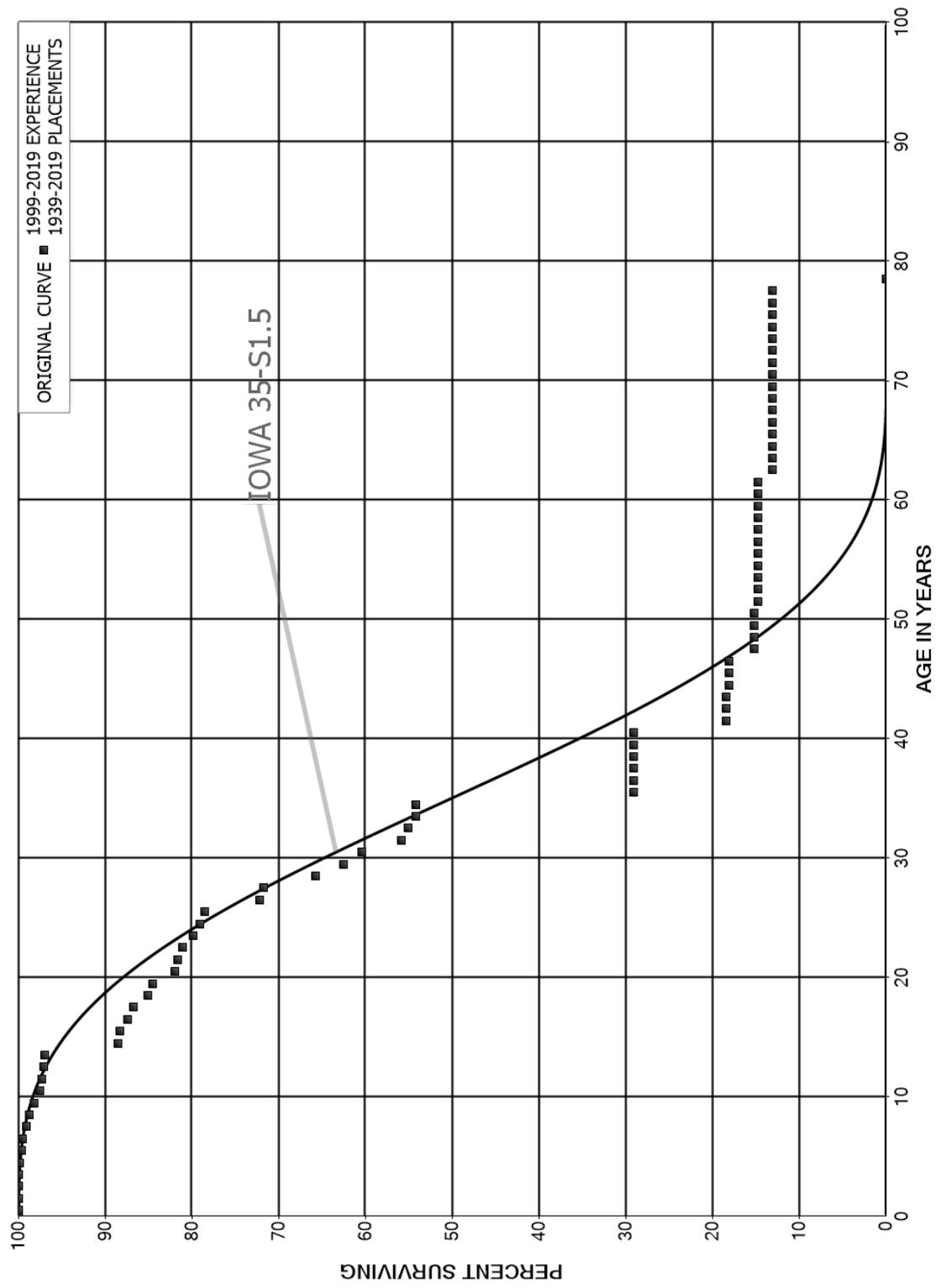
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1960-2019			EXPERIENCE BAND 1999-2019		
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	128,004	9,910	0.0774	0.9226	32.14
40.5	140,361	56,891	0.4053	0.5947	29.65
41.5	83,470		0.0000	1.0000	17.63
42.5	83,470	6,122	0.0733	0.9267	17.63
43.5	28,842		0.0000	1.0000	16.34
44.5	28,842		0.0000	1.0000	16.34
45.5	28,842	860	0.0298	0.9702	16.34
46.5	27,983		0.0000	1.0000	15.85
47.5	21,408		0.0000	1.0000	15.85
48.5	5,141		0.0000	1.0000	15.85
49.5	5,141	2,187	0.4255	0.5745	15.85
50.5	2,953	2,953	1.0000		9.11
51.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 380.00 TREATMENT EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1939-2019

EXPERIENCE BAND 1999-2019

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	52,484,979		0.0000	1.0000	100.00
0.5	52,338,297		0.0000	1.0000	100.00
1.5	64,377,580	1,853	0.0000	1.0000	100.00
2.5	61,280,085	2,456	0.0000	1.0000	100.00
3.5	56,645,719	97,216	0.0017	0.9983	99.99
4.5	44,542,853	95,360	0.0021	0.9979	99.82
5.5	39,192,994	29,279	0.0007	0.9993	99.61
6.5	37,993,990	195,343	0.0051	0.9949	99.53
7.5	37,038,634	104,008	0.0028	0.9972	99.02
8.5	38,046,057	237,211	0.0062	0.9938	98.74
9.5	28,856,102	179,693	0.0062	0.9938	98.13
10.5	11,015,164	26,343	0.0024	0.9976	97.52
11.5	15,100,040	30,352	0.0020	0.9980	97.28
12.5	16,280,292	28,816	0.0018	0.9982	97.09
13.5	16,807,417	1,468,058	0.0873	0.9127	96.92
14.5	14,676,816	22,218	0.0015	0.9985	88.45
15.5	11,808,330	121,942	0.0103	0.9897	88.32
16.5	11,627,778	92,492	0.0080	0.9920	87.41
17.5	12,550,432	231,211	0.0184	0.9816	86.71
18.5	10,724,551	78,054	0.0073	0.9927	85.11
19.5	10,812,422	322,982	0.0299	0.9701	84.49
20.5	9,468,414	37,906	0.0040	0.9960	81.97
21.5	9,609,732	62,020	0.0065	0.9935	81.64
22.5	9,543,450	153,592	0.0161	0.9839	81.11
23.5	9,334,263	87,607	0.0094	0.9906	79.81
24.5	9,070,811	59,133	0.0065	0.9935	79.06
25.5	8,792,217	707,485	0.0805	0.9195	78.54
26.5	4,703,706	32,521	0.0069	0.9931	72.22
27.5	4,778,474	397,707	0.0832	0.9168	71.72
28.5	6,059,797	298,086	0.0492	0.9508	65.75
29.5	6,184,153	215,062	0.0348	0.9652	62.52
30.5	5,152,304	387,965	0.0753	0.9247	60.35
31.5	5,356,247	72,674	0.0136	0.9864	55.80
32.5	3,421,800	52,448	0.0153	0.9847	55.05
33.5	2,753,091		0.0000	1.0000	54.20
34.5	2,272,767	1,055,181	0.4643	0.5357	54.20
35.5	635,826		0.0000	1.0000	29.04
36.5	779,480		0.0000	1.0000	29.04
37.5	801,627		0.0000	1.0000	29.04
38.5	778,140		0.0000	1.0000	29.04

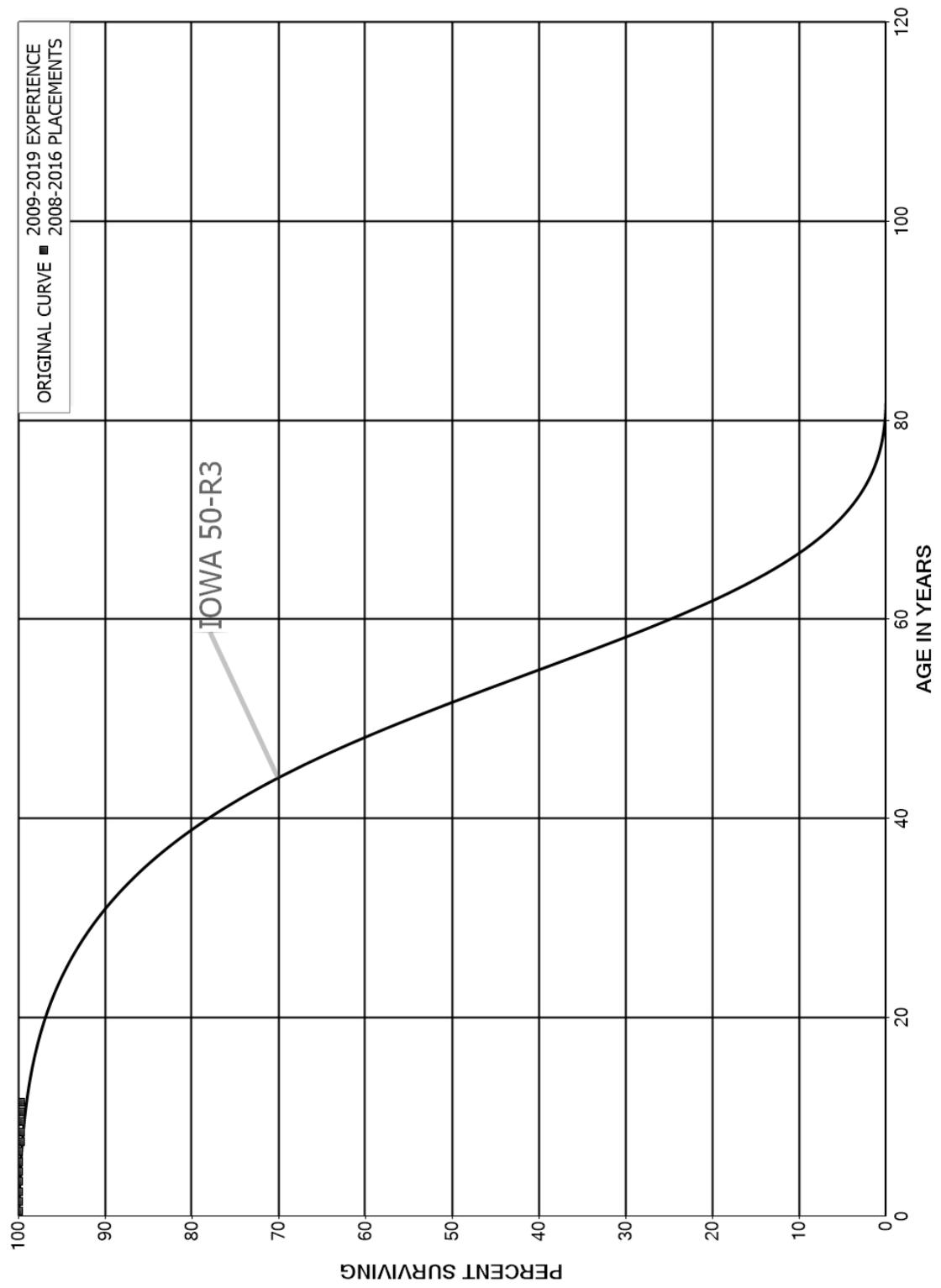
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1939-2019			EXPERIENCE BAND 1999-2019			
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	778,140	411	0.0005	0.9995	29.04	
40.5	777,730	285,407	0.3670	0.6330	29.02	
41.5	15,823,498		0.0000	1.0000	18.37	
42.5	15,823,498		0.0000	1.0000	18.37	
43.5	15,823,498	268,317	0.0170	0.9830	18.37	
44.5	515,644		0.0000	1.0000	18.06	
45.5	515,644		0.0000	1.0000	18.06	
46.5	371,038	60,316	0.1626	0.8374	18.06	
47.5	288,575		0.0000	1.0000	15.12	
48.5	288,575		0.0000	1.0000	15.12	
49.5	288,575		0.0000	1.0000	15.12	
50.5	288,575	6,818	0.0236	0.9764	15.12	
51.5	281,757	315	0.0011	0.9989	14.77	
52.5	107,182		0.0000	1.0000	14.75	
53.5	107,182	462	0.0043	0.9957	14.75	
54.5	23,321		0.0000	1.0000	14.69	
55.5	23,321		0.0000	1.0000	14.69	
56.5	298,010		0.0000	1.0000	14.69	
57.5	298,010		0.0000	1.0000	14.69	
58.5	298,010		0.0000	1.0000	14.69	
59.5	25,215		0.0000	1.0000	14.69	
60.5	25,215		0.0000	1.0000	14.69	
61.5	25,215	2,761	0.1095	0.8905	14.69	
62.5	1,894		0.0000	1.0000	13.08	
63.5	1,894		0.0000	1.0000	13.08	
64.5	1,894		0.0000	1.0000	13.08	
65.5	1,894		0.0000	1.0000	13.08	
66.5	1,894		0.0000	1.0000	13.08	
67.5	1,894		0.0000	1.0000	13.08	
68.5	1,894		0.0000	1.0000	13.08	
69.5	1,894		0.0000	1.0000	13.08	
70.5	1,894		0.0000	1.0000	13.08	
71.5	1,894		0.0000	1.0000	13.08	
72.5	1,894		0.0000	1.0000	13.08	
73.5	1,894		0.0000	1.0000	13.08	
74.5	1,894		0.0000	1.0000	13.08	
75.5	1,894		0.0000	1.0000	13.08	
76.5	1,894		0.0000	1.0000	13.08	
77.5	1,894	1,894	1.0000		13.08	
78.5						

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 381.00 PLANT SEWERS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



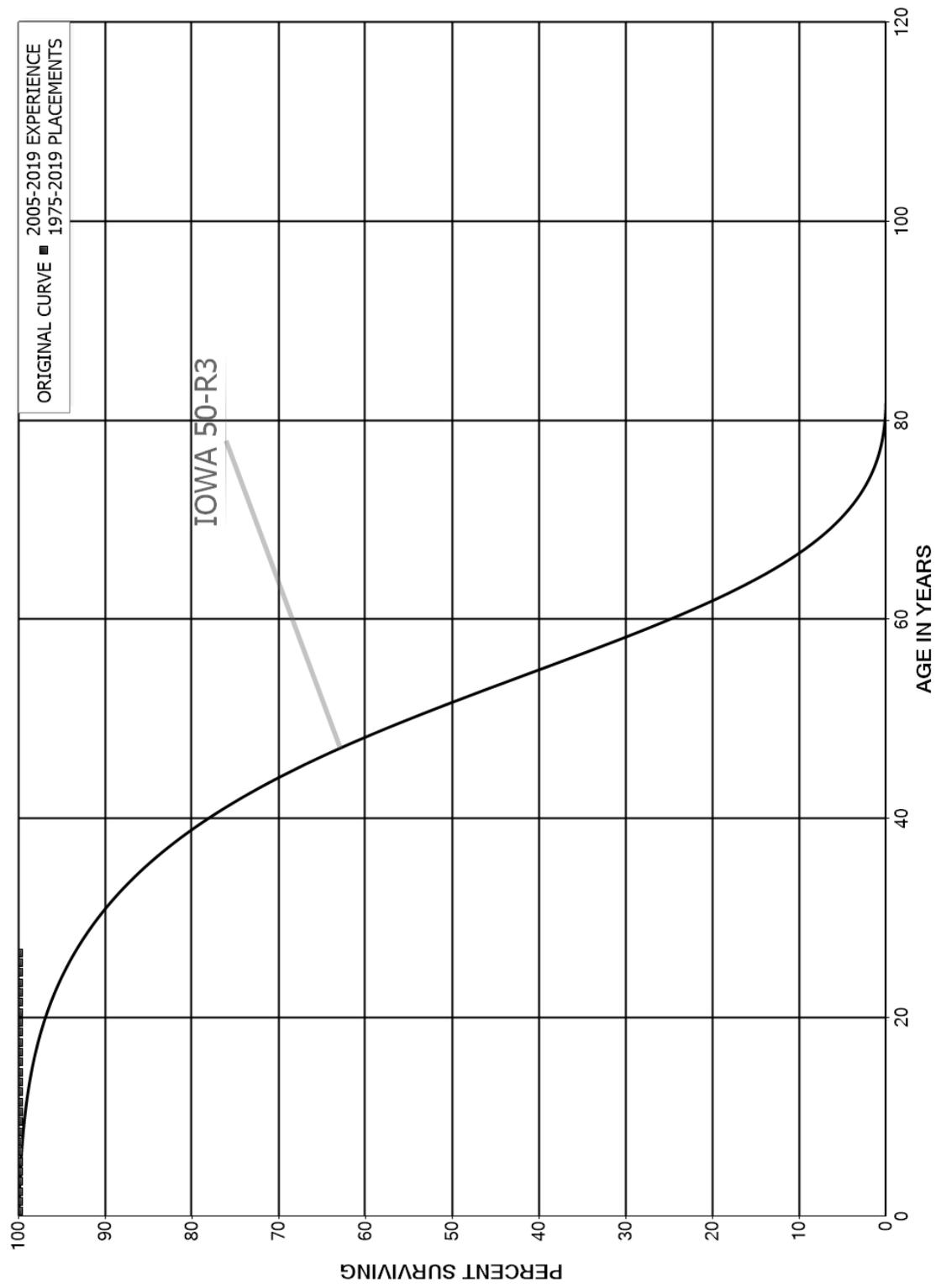
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 381.00 PLANT SEWERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2008-2016			EXPERIENCE BAND 2009-2019		
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	5,524,134		0.0000	1.0000	100.00
0.5	6,227,961		0.0000	1.0000	100.00
1.5	6,227,961		0.0000	1.0000	100.00
2.5	6,227,961		0.0000	1.0000	100.00
3.5	6,182,721		0.0000	1.0000	100.00
4.5	6,175,263		0.0000	1.0000	100.00
5.5	5,940,945		0.0000	1.0000	100.00
6.5	5,940,945	13,300	0.0022	0.9978	100.00
7.5	5,925,961	2,120	0.0004	0.9996	99.78
8.5	5,917,243		0.0000	1.0000	99.74
9.5	4,729,279		0.0000	1.0000	99.74
10.5	294,412		0.0000	1.0000	99.74
11.5					99.74

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 382.00 OUTFALL SEWER LINES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1975-2019

EXPERIENCE BAND 2005-2019

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	1,700,716		0.0000	1.0000	100.00
0.5	1,605,061		0.0000	1.0000	100.00
1.5	360,675		0.0000	1.0000	100.00
2.5	355,425		0.0000	1.0000	100.00
3.5	355,425		0.0000	1.0000	100.00
4.5	355,425		0.0000	1.0000	100.00
5.5	255,003		0.0000	1.0000	100.00
6.5	264,243		0.0000	1.0000	100.00
7.5	265,939		0.0000	1.0000	100.00
8.5	265,939		0.0000	1.0000	100.00
9.5	238,111		0.0000	1.0000	100.00
10.5	212,060		0.0000	1.0000	100.00
11.5	244,789	6	0.0000	1.0000	100.00
12.5	244,783		0.0000	1.0000	100.00
13.5	43,666		0.0000	1.0000	100.00
14.5	34,425		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	202,476		0.0000	1.0000	100.00
24.5	202,476		0.0000	1.0000	100.00
25.5	202,476		0.0000	1.0000	100.00
26.5					100.00
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		

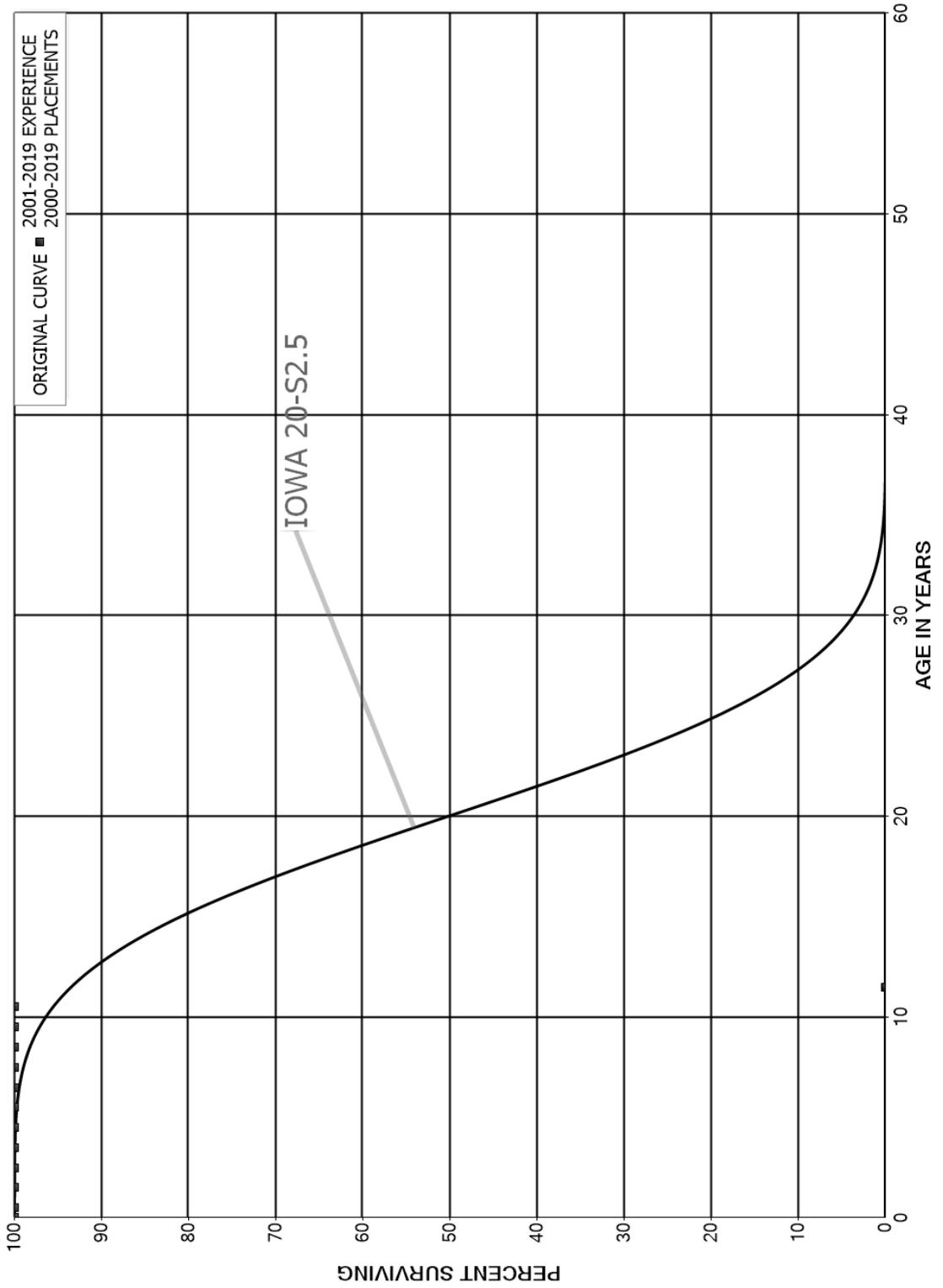
PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS

ACCOUNT 382.00 OUTFALL SEWER LINES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1975-2019			EXPERIENCE BAND 2005-2019		
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	4,984		0.0000		
42.5	4,984		0.0000		
43.5	4,984		0.0000		
44.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



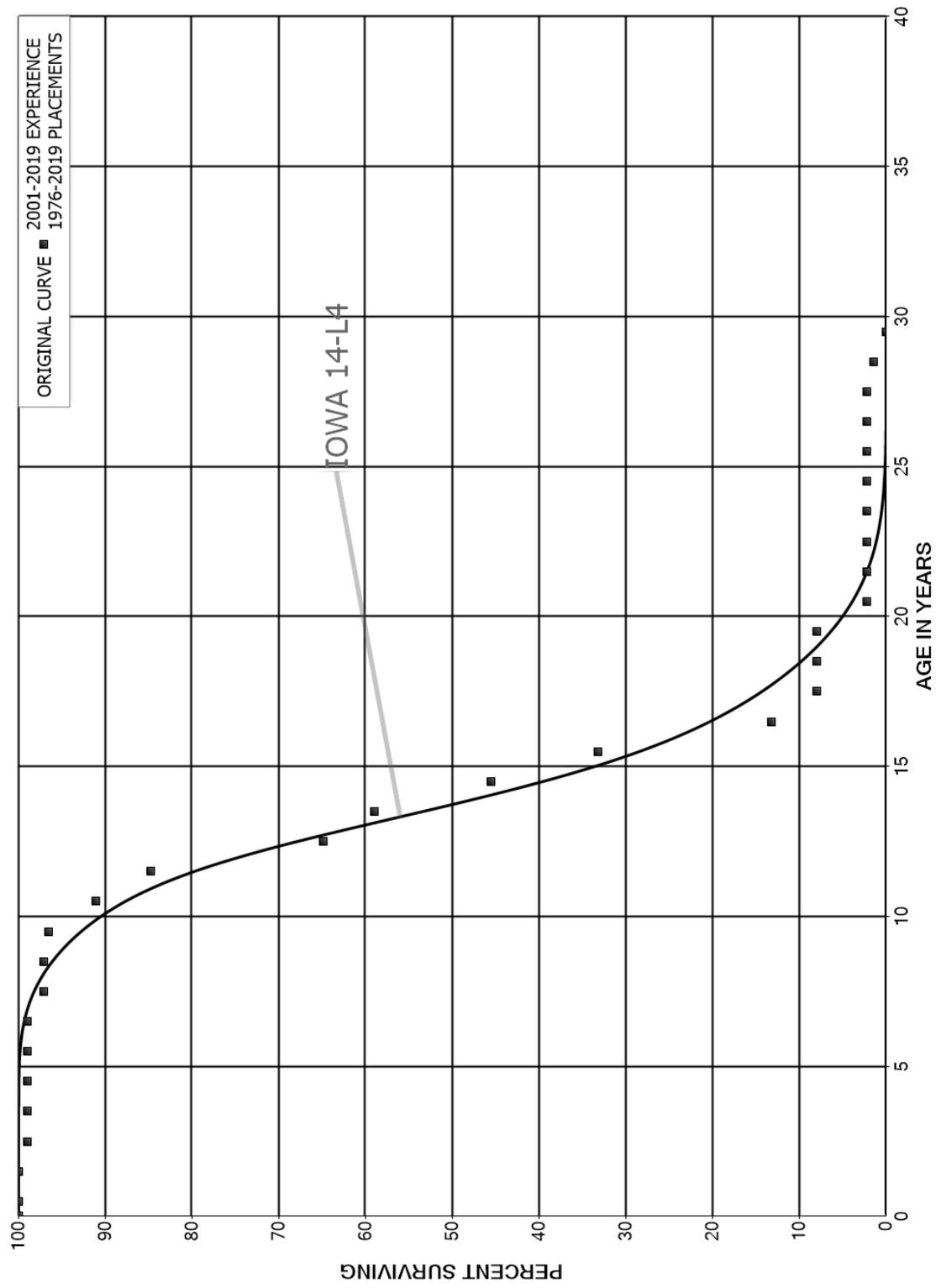
PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 2000-2019			EXPERIENCE BAND 2001-2019		
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	737,756		0.0000	1.0000	100.00
0.5	437,340		0.0000	1.0000	100.00
1.5	405,165		0.0000	1.0000	100.00
2.5	4,547,918		0.0000	1.0000	100.00
3.5	4,547,918		0.0000	1.0000	100.00
4.5	4,547,918	2,997	0.0007	0.9993	100.00
5.5	4,544,921		0.0000	1.0000	99.93
6.5	393,353		0.0000	1.0000	99.93
7.5	393,353		0.0000	1.0000	99.93
8.5	281,642		0.0000	1.0000	99.93
9.5	8,492		0.0000	1.0000	99.93
10.5	8,492	8,492	1.0000		99.93
11.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 391.00 TRANSPORTATION EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

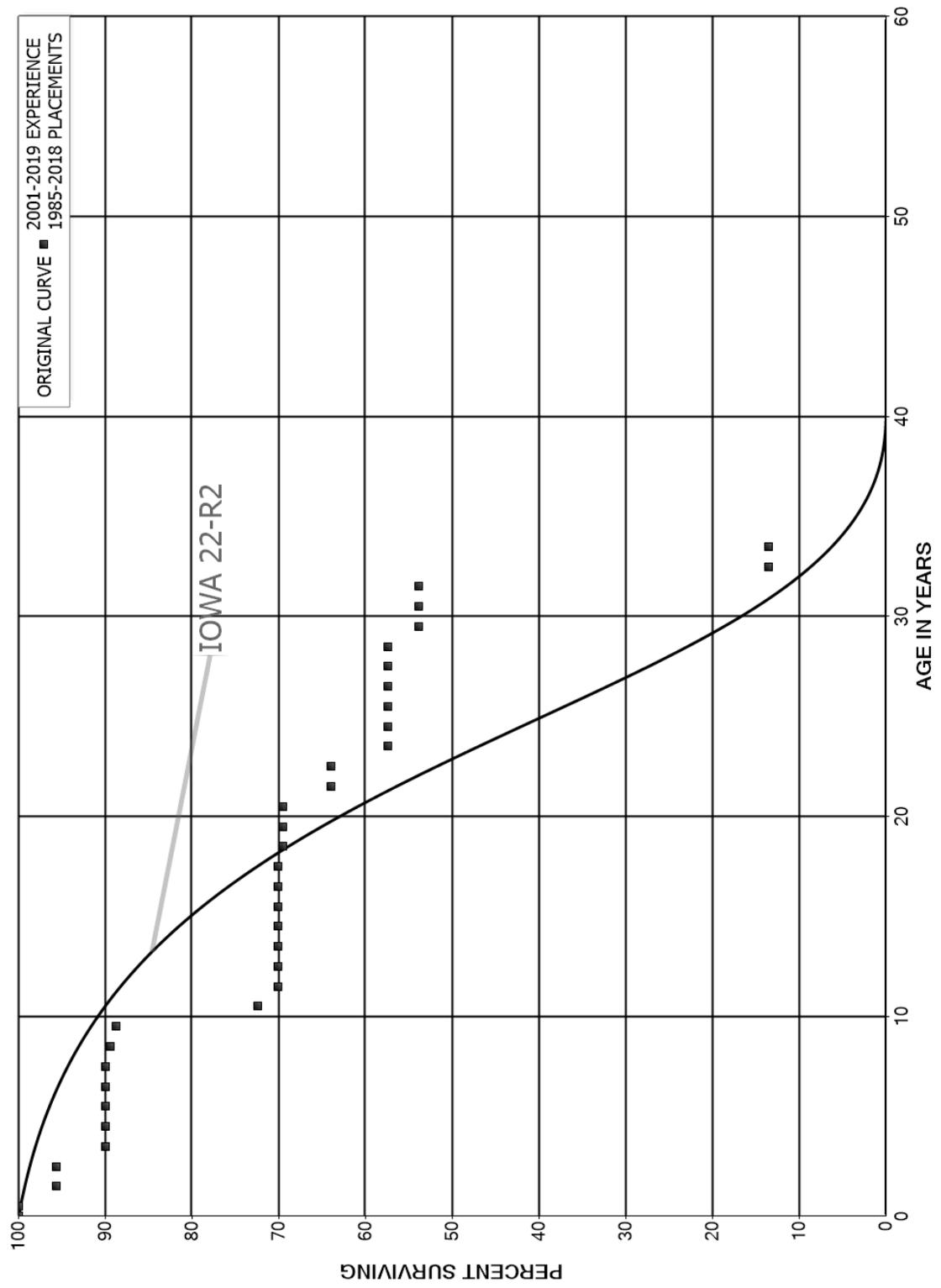
ORIGINAL LIFE TABLE

PLACEMENT BAND 1976-2019

EXPERIENCE BAND 2001-2019

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	4,168,919		0.0000	1.0000	100.00
0.5	3,692,372		0.0000	1.0000	100.00
1.5	1,458,511	14,523	0.0100	0.9900	100.00
2.5	2,332,879		0.0000	1.0000	99.00
3.5	2,514,168		0.0000	1.0000	99.00
4.5	1,930,107		0.0000	1.0000	99.00
5.5	1,664,209		0.0000	1.0000	99.00
6.5	1,677,203	32,676	0.0195	0.9805	99.00
7.5	1,535,566		0.0000	1.0000	97.08
8.5	1,373,777	8,793	0.0064	0.9936	97.08
9.5	1,545,830	87,008	0.0563	0.9437	96.45
10.5	879,899	61,030	0.0694	0.9306	91.03
11.5	743,329	174,600	0.2349	0.7651	84.71
12.5	440,822	40,215	0.0912	0.9088	64.81
13.5	348,542	79,500	0.2281	0.7719	58.90
14.5	276,542	75,000	0.2712	0.7288	45.47
15.5	195,354	117,872	0.6034	0.3966	33.14
16.5	51,900	20,700	0.3988	0.6012	13.14
17.5	31,200		0.0000	1.0000	7.90
18.5	32,855		0.0000	1.0000	7.90
19.5	32,855	23,700	0.7214	0.2786	7.90
20.5	9,155		0.0000	1.0000	2.20
21.5	9,155		0.0000	1.0000	2.20
22.5	9,155		0.0000	1.0000	2.20
23.5	9,155		0.0000	1.0000	2.20
24.5	14,155		0.0000	1.0000	2.20
25.5	14,155		0.0000	1.0000	2.20
26.5	14,155		0.0000	1.0000	2.20
27.5	14,155	5,000	0.3532	0.6468	2.20
28.5	9,155	9,155	1.0000		1.42
29.5					

PENNSYLVANIA-AMERICAN WATER COMPANY
 ALL WASTEWATER OPERATIONS
 ACCOUNT 395.00 POWER OPERATED EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



PENNSYLVANIA-AMERICAN WATER COMPANY
ALL WASTEWATER OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1985-2018

EXPERIENCE BAND 2001-2019

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	192,967		0.0000	1.0000	100.00
0.5	192,967	8,551	0.0443	0.9557	100.00
1.5	127,706		0.0000	1.0000	95.57
2.5	255,380	14,864	0.0582	0.9418	95.57
3.5	324,176		0.0000	1.0000	90.01
4.5	885,603		0.0000	1.0000	90.01
5.5	967,489		0.0000	1.0000	90.01
6.5	1,410,131		0.0000	1.0000	90.01
7.5	1,250,710	8,033	0.0064	0.9936	90.01
8.5	871,073	6,988	0.0080	0.9920	89.43
9.5	536,633	98,717	0.1840	0.8160	88.71
10.5	191,853	6,125	0.0319	0.9681	72.39
11.5	137,458		0.0000	1.0000	70.08
12.5	190,308		0.0000	1.0000	70.08
13.5	169,091		0.0000	1.0000	70.08
14.5	169,091		0.0000	1.0000	70.08
15.5	169,587		0.0000	1.0000	70.08
16.5	190,470		0.0000	1.0000	70.08
17.5	117,685	875	0.0074	0.9926	70.08
18.5	116,810		0.0000	1.0000	69.56
19.5	116,810		0.0000	1.0000	69.56
20.5	124,335	9,999	0.0804	0.9196	69.56
21.5	124,336		0.0000	1.0000	63.97
22.5	124,336	12,782	0.1028	0.8972	63.97
23.5	111,554		0.0000	1.0000	57.39
24.5	111,554		0.0000	1.0000	57.39
25.5	111,554		0.0000	1.0000	57.39
26.5	18,021		0.0000	1.0000	57.39
27.5	8,021		0.0000	1.0000	57.39
28.5	8,021	496	0.0618	0.9382	57.39
29.5	30,053		0.0000	1.0000	53.84
30.5	30,053		0.0000	1.0000	53.84
31.5	30,053	22,528	0.7496	0.2504	53.84
32.5	7,525		0.0000	1.0000	13.48
33.5					13.48

**PART VII. DETAILED DEPRECIATION
CALCULATIONS**

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT		DEPRECIATED ORIGINAL COST CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
			(2)	(3)		
1968	6,745,312	4,499,371	2,245,941		2,245,941	12.3
1993	13,998	6,500	7,498		2,253,439	12.3
1994	742,124	272,903	469,221		2,722,660	14.9
1995	16,350,531	7,611,774	8,738,757		11,461,417	62.6
1996	7,354,174	3,106,241	4,247,933		15,709,350	85.8
1997	7,185	4,370	2,815		15,712,165	85.8
1998	31,476	13,776	17,700		15,729,865	85.9
1999	52,697	20,701	31,996		15,761,861	86.1
2001	432,211	139,123	293,088		16,054,949	87.7
2002	204,875	83,077	121,798		16,176,747	88.4
2003	571,162	218,321	352,841		16,529,588	90.3
2004	418,410	150,228	268,182		16,797,770	91.8
2005	2,197	2,169	28		16,797,798	91.8
2006	213,788	64,971	148,817		16,946,615	92.6
2007	13,082	3,611	9,471		16,956,086	92.6
2008	829	218	611		16,956,697	92.6
2009	13,339	2,856	10,483		16,967,180	92.7
2010	4,407	1,007	3,400		16,970,580	92.7
2011	9,456	4,672	4,784		16,975,364	92.7
2012	90,315	21,715	68,600		17,043,964	93.1
2013	44,467	5,809	38,658		17,082,622	93.3
2014	6,525	1,666	4,859		17,087,481	93.4
2015	102,376	16,773	85,603		17,173,084	93.8
2016	62,792	12,528	50,264		17,223,348	94.1
2017	14,749	1,295	13,454		17,236,802	94.2
2018	8,969	658	8,311		17,245,113	94.2
2020	1,071,000	11,825	1,059,175		18,304,288	100.0
SUBTOTAL	34,582,446	16,278,158	18,304,289			
NONDEPRECIABLE	38,022		38,022			
TOTAL	34,620,468	16,278,158	18,342,311			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 55-S0						
NET SALVAGE PERCENT.. 0						
1993	2,318.84	1,148	1,073	1,246	28.06	44
1994	18,254.37	8,804	8,230	10,024	28.45	352
1995	1,513,513.41	710,140	663,848	849,665	28.85	29,451
1996	518,257.31	237,465	221,985	296,272	28.97	10,227
1999	3,398.43	1,425	1,332	2,066	29.78	69
2001	3,181.87	1,241	1,160	2,022	30.50	66
2002	1,928.04	724	677	1,251	30.76	41
2003	1,219.96	440	411	809	31.04	26
2004	17,870.17	6,162	5,761	12,109	31.35	386
2006	31,289.69	9,800	9,161	22,129	31.80	696
2007	2,102.98	625	584	1,519	31.95	48
2008	137.38	38	36	101	32.14	3
2009	185.96	49	46	140	32.36	4
2010	729.98	178	166	564	32.60	17
2012	742.13	152	142	600	33.00	18
2015	1,139.66	160	150	990	33.56	29
2017	638.26	60	56	582	33.67	17
2020	71,560.52	1,059	990	70,571	33.40	2,113
	2,188,468.96	979,670	915,808	1,272,661		43,607

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 29.2 1.99

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 55-S0						
NET SALVAGE PERCENT.. 0						
1993	11,679.63	5,781	5,427	6,253	28.06	223
1994	91,944.49	44,345	41,626	50,318	28.45	1,769
1995	7,623,337.82	3,576,870	3,357,552	4,265,786	28.85	147,861
1996	2,610,383.55	1,196,078	1,122,739	1,487,645	28.97	51,351
1999	17,117.38	7,176	6,736	10,381	29.78	349
2001	16,026.59	6,250	5,867	10,160	30.50	333
2002	9,711.23	3,648	3,424	6,287	30.76	204
2003	6,144.73	2,215	2,079	4,066	31.04	131
2004	90,009.31	31,035	29,132	60,877	31.35	1,942
2006	157,601.45	49,361	46,335	111,266	31.80	3,499
2007	10,592.42	3,146	2,953	7,639	31.95	239
2008	691.96	194	182	510	32.14	16
2009	936.69	246	231	706	32.36	22
2010	3,676.80	896	841	2,836	32.60	87
2012	3,738.01	766	719	3,019	33.00	91
2015	5,740.27	808	759	4,981	33.56	148
2017	3,214.79	303	284	2,931	33.67	87
2020	360,439.48	5,335	5,008	355,431	33.40	10,642
	11,022,986.60	4,934,453	4,631,894	6,391,092		218,994
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						29.2 1.99

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 75-R3						
NET SALVAGE PERCENT.. 0						
1995	346,434.55	126,310	138,431	208,004	44.43	4,682
1996	179,752.89	62,985	69,030	110,723	45.43	2,437
2004	25,068.47	6,082	6,666	18,403	51.52	357
	551,255.91	195,377	214,127	337,129		7,476
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						45.1 1.36

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1968	4,732,769.10	2,957,034	2,922,599	1,810,170	31.53	57,411
1994	563,940.01	201,778	199,428	364,512	47.57	7,663
1995	1,550,648.61	533,733	527,518	1,023,131	48.58	21,061
1996	2,296,647.07	765,243	756,332	1,540,315	49.03	31,416
1998	18,064.54	5,567	5,502	12,563	50.50	249
1999	12,622.58	3,745	3,701	8,922	50.96	175
2001	299,569.75	81,183	80,238	219,332	52.45	4,182
2002	38,872.56	10,068	9,951	28,922	52.93	546
2003	9,316.00	2,282	2,255	7,061	53.93	131
2004	93,744.98	21,805	21,551	72,194	54.43	1,326
2007	386.54	75	74	313	56.43	6
2009	3,826.54	638	631	3,196	57.46	56
2012	18,457.07	2,322	2,295	16,162	59.07	274
2013	33,091.06	3,700	3,657	29,434	59.61	494
2016	6,872.53	476	471	6,402	60.44	106
2020	168,275.40	1,447	1,430	166,846	57.98	2,878
	9,847,104.34	4,591,096	4,537,633	5,309,472		127,974
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						41.5 1.30

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S2.5						
NET SALVAGE PERCENT.. 0						
1968	80,242.09	67,821	42,747	37,495	9.61	3,902
1994	67,984.79	37,473	23,619	44,366	21.58	2,056
1995	331,696.94	176,794	111,432	220,265	22.34	9,860
1996	380,322.06	195,676	123,332	256,990	23.12	11,115
2001	23,783.36	9,970	6,284	17,499	27.01	648
2020	31,724.60	349	220	31,504	44.75	704
	915,753.84	488,083	307,634	608,120		28,285
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.5 3.09

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 47-R3						
NET SALVAGE PERCENT.. 0						
1995	85,387.79	46,810	36,836	48,552	21.01	2,311
1996	194,120.37	102,728	80,838	113,282	21.80	5,196
2004	709.31	266	209	500	27.55	18
2020	35,000.00	441	347	34,653	39.34	881
	315,217.47	150,245	118,230	196,987		8,406
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						23.4 2.67

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-L2.5						
NET SALVAGE PERCENT.. 0						
1996	11,818.11	10,597	7,469	4,349	2.82	1,542
1998	13,411.65	11,738	8,274	5,138	3.21	1,601
2011	2,612.02	1,643	1,158	1,454	5.61	259
2016	1,759.64	603	425	1,335	8.64	155
	29,601.42	24,581	17,326	12,276		3,557
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						3.5 12.02

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S0.5						
NET SALVAGE PERCENT.. 0						
1995	37,977.20	26,535	24,184	13,793	11.00	1,254
1996	1,162,872.61	794,940	724,516	438,357	11.34	38,656
1997	7,184.66	4,795	4,370	2,815	11.71	240
2001	37,767.40	22,536	20,540	17,227	13.18	1,307
2002	11,398.80	6,600	6,015	5,384	13.45	400
2004	136,926.05	73,653	67,128	69,798	14.17	4,926
2006	18,679.73	9,183	8,370	10,310	15.00	687
2012	21,045.98	6,941	6,326	14,720	17.27	852
2013	4,017.01	1,196	1,090	2,927	17.69	165
2015	35,558.03	8,136	7,415	28,143	18.54	1,518
2016	5,563.09	1,069	975	4,588	18.92	242
	1,478,990.56	955,584	870,929	608,062		50,247
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.1 3.40

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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-S1.5						
NET SALVAGE PERCENT.. 0						
1968	1,932,300.82	1,785,446	1,534,025	398,276	4.32	92,194
1995	3,881,974.46	2,603,252	2,236,669	1,645,305	12.52	131,414
1999	2,563.05	1,543	1,326	1,237	14.21	87
2001	51,881.54	29,137	25,034	26,848	15.22	1,764
2002	112,224.21	60,624	52,087	60,137	15.75	3,818
2003	5,705.24	2,955	2,539	3,166	16.28	194
2004	11,659.50	5,771	4,958	6,702	16.83	398
2009	4,394.40	1,612	1,385	3,009	19.85	152
2012	42,667.10	11,930	10,250	32,417	21.90	1,480
2013	3,161.46	787	676	2,485	22.62	110
2014	3,841.44	834	717	3,124	23.44	133
2015	47,979.09	8,895	7,642	40,337	24.17	1,669
2016	14,668.13	2,238	1,923	12,745	25.00	510
2017	4,492.54	536	461	4,032	25.82	156
2018	8,969.16	767	659	8,311	26.74	311
	6,128,482.14	4,516,327	3,880,351	2,248,132		234,390

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.6 3.82

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 381.00 PLANT SEWERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
1995	963,278.36	501,097	499,022	464,256	23.52	19,739
1999	16,995.91	7,638	7,606	9,390	26.34	356
2002	24,126.76	9,463	9,424	14,703	28.67	513
2003	528,446.92	197,005	196,190	332,257	29.45	11,282
2004	40,964.87	14,465	14,405	26,560	30.23	879
2016	2,532.33	259	258	2,275	39.55	58
	1,576,345.15	729,927	726,905	849,440		32,827
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						25.9 2.08

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2003	732.58	571	273	459	4.97	92
	732.58	571	273	459		92
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 5.0						12.56

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2003	10,612.51	9,286	10,613			
2004	155.44	128	155			
2005	2,196.86	1,703	2,169	28	4.50	6
2011	4,497.54	2,136	2,721	1,777	10.50	169
2012	3,664.69	1,557	1,983	1,682	11.50	146
2016	1,348.25	303	386	963	15.50	62
	22,475.29	15,113	18,027	4,449		383
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					11.6	1.70

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 14-L4						
NET SALVAGE PERCENT.. 0						
1995	14,048.93	13,720	14,049			
2016	19,619.21	6,682	7,233	12,386	8.71	1,422
	33,668.14	20,402	21,282	12,386		1,422
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.7 4.22

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 392.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2017	6,403.05	896	494	5,909	21.50	275
	6,403.05	896	494	5,909		275
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.5 4.29

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2002	6,613.48	6,117	1,499	5,114	1.50	3,409
2003	4,845.24	4,240	1,039	3,806	2.50	1,522
2004	1,301.53	1,074	263	1,039	3.50	297
2006	6,217.59	4,508	1,105	5,113	5.50	930
2009	3,995.49	2,297	563	3,432	8.50	404
2013	4,196.99	1,574	386	3,811	12.50	305
2015	11,958.86	3,289	807	11,152	14.50	769
2016	7,730.04	1,739	426	7,304	15.50	471
2020	40,000.00	1,000	246	39,754	19.50	2,039
	86,859.22	25,838	6,334	80,526		10,146
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						7.9 11.68

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 394.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
1995	2,233.32	2,233	2,233			
2003	4,139.31	4,139	2,921	1,218		
	6,372.63	6,372	5,154	1,218		
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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 22-R2						
NET SALVAGE PERCENT.. 0						
2014	2,684.02	874	949	1,735	13.46	129
	2,684.02	874	949	1,735		129
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.4 4.81

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2011	2,346.41	1,486	793	1,553	5.50	282
2016	2,698.67	810	432	2,267	10.50	216
2020	232,000.00	7,733	4,128	227,872	14.50	15,715
	237,045.08	10,029	5,353	231,692		16,213
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.3 6.84

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 397.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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						
2020	132,000.00	4,400	544-	132,544	14.50	9,141
	132,000.00	4,400	544-	132,544		9,141
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.5 6.92

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

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

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

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2020 TRANSACTION YEAR				
354.30	4,190.64	419.06		419.06-
354.40	21,107.61	2,110.76		2,110.76-
361.10	9,588.00	1,917.60		1,917.60-
361.20	1,538.54	307.71		307.71-
363.00	1,171.22	234.24		234.24-
390.00	2,469.18			
393.00	16,022.27			
396.00	926.34			
397.00	5,273.11			
	62,286.91	4,989.37		4,989.37-
TOTAL	62,286.91	4,989.37		4,989.37-

EXHIBIT NO. 11-AD - DEPRECIATION STUDY

WASTEWATER CSS KANE OPERATIONS

AS OF DECEMBER 31, 2021

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

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS KANE OPERATIONS

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WASTEWATER PLANT

AS OF DECEMBER 31, 2021

Prepared by:



Gannett Fleming

*Excellence Delivered **As Promised***

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

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER CSS KANE OPERATIONS

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2021

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2021. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020". 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

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER CSS KANE OPERATIONS

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2021. Table 1 sets forth the development of the net original cost by account as of December 31, 2021. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2021, 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, 2021. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2021. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2017 through 2021.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-5. 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 2017 through 2021, beginning on page III-2.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	ORIGINAL COST	CUSTOMER	CONTRIBUTIONS	EXCLUDED	NET ORIGINAL COST
	AS OF DECEMBER 31, 2021 (2)	ADVANCES (3)	IN AID OF CONSTRUCTION (4)	PROPERTY (5)	AS OF DECEMBER 31, 2021 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	2,239,223.06				2,239,223.06
354.40 STRUCTURES AND IMPROVEMENTS - TDP	11,278,627.31				11,278,627.31
360.10 COLLECTION SEWERS - FORCE MAINS	551,255.91				551,255.91
361.10 COLLECTION SEWERS - GRAVITY MAINS	10,524,980.12				10,524,980.12
361.20 MANHOLES	997,355.50				997,355.50
363.00 SERVICES	348,674.99				348,674.99
364.00 FLOW MEASURING DEVICES	29,601.42				29,601.42
371.00 PUMPING EQUIPMENT	1,571,390.56				1,571,390.56
380.00 TREATMENT EQUIPMENT	6,168,082.14				6,168,082.14
381.00 PLANT SEWERS	1,576,345.15				1,576,345.15
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	732.58				732.58
390.00 OFFICE FURNITURE AND EQUIPMENT	22,475.29				22,475.29
391.00 TRANSPORTATION EQUIPMENT	33,668.14				33,668.14
392.00 STORES EQUIPMENT	6,403.05				6,403.05
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	116,859.22				116,859.22
395.00 POWER OPERATED EQUIPMENT	2,684.02				2,684.02
396.00 COMMUNICATION EQUIPMENT	379,045.08				379,045.08
397.00 MISCELLANEOUS EQUIPMENT	264,000.00				264,000.00
TOTAL DEPRECIABLE PLANT	36,111,403.54	0.00	0.00	0.00	36,111,403.54
NONDEPRECIABLE PLANT					
353.20 LAND AND LAND RIGHTS - COLLECTION	38,022.09				38,022.09
TOTAL NONDEPRECIABLE PLANT	38,022.09	0.00	0.00	0.00	38,022.09
TOTAL UTILITY PLANT	36,149,425.63	0.00	0.00	0.00	36,149,425.63

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2021 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL ACCRUAL AMOUNT (6)	CALCULATED ANNUAL ACCRUAL RATE (7)=(6)/(3)	COMPOSITE REMAINING LIFE (8)
DEPRECIABLE PLANT							
354.30	STRUCTURES AND IMPROVEMENTS - SPP	2,239,223.06	955,109	1,284,114	44,211	1.97	29.0
354.40	STRUCTURES AND IMPROVEMENTS - TDP	11,278,627.31	4,829,849	6,448,778	222,019	1.97	29.0
360.10	COLLECTION SEWERS - FORCE MAINS	551,255.91	221,624	329,632	7,420	1.35	44.4
361.10	COLLECTION SEWERS - GRAVITY MAINS	10,524,980.12	4,624,105	5,900,875	139,750	1.33	42.2
361.20	MANHOLES	997,355.50	331,293	666,063	29,809	2.99	22.3
363.00	SERVICES	348,674.99	125,187	223,488	9,175	2.63	24.4
364.00	FLOW MEASURING DEVICES	29,601.42	20,884	8,718	2,614	8.83	3.3
371.00	PUMPING EQUIPMENT	1,571,390.56	922,149	649,241	51,913	3.30	12.5
380.00	TREATMENT EQUIPMENT	6,168,082.14	4,114,459	2,053,624	217,010	3.52	9.5
381.00	PLANT SEWERS	1,576,345.15	759,693	816,652	32,519	2.06	25.1
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	732.58	365	367	80	10.92	4.6
390.00	OFFICE FURNITURE AND EQUIPMENT	22,475.29	17,190	5,285	681	3.03	7.8
391.00	TRANSPORTATION EQUIPMENT	33,688.14	22,703	10,986	1,415	4.20	7.7
392.00	STORES EQUIPMENT	6,403.05	769	5,634	275	4.29	20.5
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	116,859.22	17,987	98,872	10,735	9.19	9.2
395.00	POWER OPERATED EQUIPMENT	2,684.02	1,079	1,606	124	4.62	13.0
396.00	COMMUNICATION EQUIPMENT	379,045.08	22,912	356,133	25,899	6.83	13.8
397.00	MISCELLANEOUS EQUIPMENT	264,000.00	10,128	253,872	18,144	6.87	14.0
TOTAL DEPRECIABLE PLANT		36,111,403.54	16,997,485	19,113,920	813,793	2.25	23.5
NONDEPRECIABLE PLANT							
353.20	LAND AND LAND RIGHTS - COLLECTION	38,022.09					
TOTAL NONDEPRECIABLE PLANT		38,022.09			3,217		
AMORTIZATION OF NET SALVAGE							
TOTAL UTILITY PLANT		36,149,425.63	16,997,485	19,113,920	817,010		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2021, OF BOOK RESERVE AS OF DECEMBER 31, 2020

ACCOUNT (1)	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2020 (2)	+	PROJECTED DEPRECIATION ACCRUALS (3)	-	PROJECTED RETIREMENTS (4)	+	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	+	TRANSFERS (8)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (9)
354.30	915,808		43,967		4,241		424								955,109
354.40	4,631,894		221,455		21,364		2,136								4,829,849
360.10	214,127		7,497												221,624
361.10	4,537,633		130,517		36,703		7,341								4,624,105
361.20	307,634		28,962		4,419		884								331,293
363.00	118,230		8,808		1,542		308								125,187
364.00	17,326		3,558												20,884
371.00	870,929		51,221												922,149
380.00	3,880,351		234,108												4,114,459
381.00	726,905		32,788												759,693
389.10	273		92												365
390.00	18,027		362										(1,218)		17,190
391.00	21,282		1,421												22,703
392.00	494		275												769
393.00	6,334		11,654												17,987
394.00	5,154		0		6,373								1,218		0
395.00	949		129												1,079
396.00	5,353		17,559												22,912
397.00	(544)		10,672												10,128
TOTAL	16,278,158		805,064		74,643		11,094		0		0		0		16,997,485

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2020 (2)	NET ORIGINAL COST AS OF 12/31/2021 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.30	2,188,468.96	2,239,223.06	1.99	43,883	84	43,967
354.40	11,022,986.60	11,278,627.31	1.99	221,033	422	221,455
360.10	551,255.91	551,255.91	1.36	7,497		7,497
361.10	9,847,104.34	10,524,980.12	1.30	130,133	384	130,517
361.20	915,753.84	997,355.50	3.09	28,900	62	28,962
363.00	315,217.47	348,674.99	2.67	8,761	47	8,808
364.00	29,601.42	29,601.42	12.02	3,558		3,558
371.00	1,478,990.56	1,571,390.56	3.40	51,221		51,221
380.00	6,128,482.14	6,168,082.14	3.82	234,108		234,108
381.00	1,576,345.15	1,576,345.15	2.08	32,788		32,788
389.10	732.58	732.58	12.56	92		92
390.00	22,475.29	22,475.29	1.70	382		382
391.00	33,668.14	33,668.14	4.22	1,421		1,421
392.00	6,403.05	6,403.05	4.29	275		275
393.00	86,859.22	116,859.22	11.68	11,654		11,654
394.00	6,372.63	0.00	-	0		0
395.00	2,684.02	2,684.02	4.81	129		129
396.00	237,045.08	379,045.08	6.84	17,559		17,559
397.00	132,000.00	264,000.00	6.92	10,672		10,672
TOTAL	34,582,446.40	36,111,403.54		804,065	999	805,064

* Total accruals shown are based on average monthly balances.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2017		2018		2019		PROJECTED 2020		PROJECTED 2021		NET SALVAGE (12)*	SALVAGE ACCRUAL (13)=(12)/5
	GROSS SALVAGE - (2)	COST OF REMOVAL (3)	GROSS SALVAGE - (4)	COST OF REMOVAL (5)	GROSS SALVAGE - (6)	COST OF REMOVAL (7)	GROSS SALVAGE - (8)	COST OF REMOVAL (9)	GROSS SALVAGE - (10)	COST OF REMOVAL (11)		
354.30							419	424			(843)	(169)
354.40							2,111	2,136			(4,247)	(849)
361.10							1,918	7,341			(9,258)	(1,852)
361.20							308	884			(1,192)	(238)
363.00							234	308			(543)	(109)
TOTAL	0	0	0	0	0	0	4,989	11,094	0	11,094	(16,083)	(3,217)

* Column (12) equals the summation of Columns (2) through (11).

PART II. DETAILED DEPRECIATION CALCULATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT		DEPRECIATED ORIGINAL COST CUMULATIVE AMOUNT (5)	PCT OF COL 4 TOTAL (6)
			(2)	(3)		
1968	6,715,626	4,603,871	2,111,755		2,111,755	11.0
1993	13,968	6,703	7,265		2,119,020	11.1
1994	740,529	281,417	459,112		2,578,132	13.5
1995	16,325,230	7,972,465	8,352,765		10,930,897	57.2
1996	7,341,788	3,232,917	4,108,871		15,039,768	78.7
1997	7,185	4,610	2,575		15,042,343	78.7
1998	31,445	15,586	15,859		15,058,202	78.8
1999	52,640	21,629	31,011		15,089,213	78.9
2001	431,703	146,498	285,205		15,374,418	80.4
2002	204,801	91,119	113,682		15,488,100	81.0
2003	566,999	228,577	338,422		15,826,522	82.8
2004	418,123	160,019	258,104		16,084,626	84.2
2005	2,197	1,918	279		16,084,905	84.2
2006	213,532	71,080	142,452		16,227,357	84.9
2007	13,065	3,857	9,208		16,236,565	84.9
2008	828	234	594		16,237,159	84.9
2009	13,334	3,981	9,353		16,246,512	85.0
2010	4,402	1,098	3,304		16,249,816	85.0
2011	9,456	5,184	4,272		16,254,088	85.0
2012	90,294	24,265	66,029		16,320,117	85.4
2013	44,438	7,170	37,268		16,357,385	85.6
2014	6,525	1,934	4,591		16,361,976	85.6
2015	102,371	21,453	80,918		16,442,894	86.0
2016	62,787	16,134	46,653		16,489,547	86.3
2017	14,747	1,815	12,932		16,502,479	86.3
2018	8,969	958	8,011		16,510,490	86.4
2020	1,070,822	50,079	1,020,743		17,531,233	91.7
2021	1,603,600	20,913	1,582,687		19,113,920	100.0
SUBTOTAL	36,111,404	16,997,485	19,113,920			
NONDEPRECIABLE	38,022		38,022			
TOTAL	36,149,426	16,997,485	19,151,942			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 55-S0						
NET SALVAGE PERCENT.. 0						
1993	2,313.80	1,167	1,107	1,207	28.00	43
1994	18,216.31	9,017	8,550	9,666	28.06	344
1995	1,510,431.27	728,481	690,730	819,701	28.45	28,812
1996	517,242.53	242,690	230,113	287,130	28.85	9,953
1999	3,392.37	1,466	1,390	2,002	29.58	68
2001	3,176.51	1,283	1,217	1,960	30.26	65
2002	1,924.96	751	712	1,213	30.50	40
2003	1,218.07	458	434	784	30.76	25
2004	17,843.37	6,433	6,100	11,743	31.04	378
2006	31,247.18	10,318	9,783	21,464	31.45	682
2007	2,100.24	658	624	1,476	31.80	46
2008	137.21	41	39	98	31.95	3
2009	185.75	52	49	137	32.14	4
2010	729.18	191	181	548	32.36	17
2012	741.44	166	157	584	32.87	18
2015	1,138.87	186	176	963	33.34	29
2017	637.95	75	71	567	33.67	17
2020	71,550.47	3,062	2,904	68,646	33.59	2,044
2021	54,995.58	814	772	54,223	33.40	1,623
	2,239,223.06	1,007,309	955,109	1,284,114		44,211

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 29.0 1.97

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 55-S0						
NET SALVAGE PERCENT.. 0						
1993	11,654.40	5,878	5,596	6,058	28.00	216
1994	91,752.78	45,418	43,236	48,517	28.06	1,729
1995	7,607,813.54	3,669,248	3,492,928	4,114,886	28.45	144,636
1996	2,605,272.24	1,222,394	1,163,653	1,441,619	28.85	49,969
1999	17,086.87	7,382	7,027	10,060	29.58	340
2001	15,999.57	6,461	6,151	9,849	30.26	325
2002	9,695.70	3,781	3,599	6,097	30.50	200
2003	6,135.20	2,304	2,193	3,942	30.76	128
2004	89,874.30	32,400	30,843	59,031	31.04	1,902
2006	157,387.33	51,969	49,472	107,915	31.45	3,431
2007	10,578.60	3,313	3,154	7,425	31.80	233
2008	691.12	205	195	496	31.95	16
2009	935.61	262	249	687	32.14	21
2010	3,672.76	963	917	2,756	32.36	85
2012	3,734.52	837	797	2,938	32.87	89
2015	5,736.29	936	891	4,845	33.34	145
2017	3,213.21	379	361	2,852	33.67	85
2020	360,388.85	15,425	14,684	345,705	33.59	10,292
2021	277,004.42	4,100	3,903	273,102	33.40	8,177
	11,278,627.31	5,073,655	4,829,849	6,448,778		222,019
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						29.0 1.97

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 75-R3						
NET SALVAGE PERCENT.. 0						
1995	346,434.55	130,363	142,811	203,624	43.92	4,636
1996	179,752.89	65,538	71,796	107,957	44.43	2,430
2004	25,068.47	6,405	7,017	18,052	50.99	354
	551,255.91	202,306	221,624	329,632		7,420
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						44.4 1.35

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1968	4,705,339.72	2,995,419	2,950,795	1,754,545	30.54	57,451
1994	562,798.11	207,391	204,301	358,497	47.13	7,607
1995	1,547,639.11	553,745	545,496	1,002,143	47.57	21,067
1996	2,292,375.68	789,036	777,282	1,515,094	48.58	31,188
1998	18,033.70	5,764	5,678	12,356	50.03	247
1999	12,601.96	3,884	3,826	8,776	50.50	174
2001	299,122.47	84,622	83,361	215,761	51.96	4,152
2002	38,817.00	10,519	10,362	28,455	52.45	543
2003	9,303.26	2,410	2,374	6,929	52.93	131
2004	93,622.25	22,937	22,596	71,026	53.93	1,317
2007	386.10	80	79	307	55.43	6
2009	3,822.55	688	678	3,145	56.94	55
2012	18,440.23	2,574	2,536	15,904	58.53	272
2013	33,062.21	4,159	4,097	28,965	59.07	490
2016	6,867.30	574	565	6,302	60.29	105
2020	168,169.26	4,087	4,026	164,143	60.23	2,725
2021	714,579.21	6,145	6,053	708,526	57.98	12,220
	10,524,980.12	4,694,034	4,624,105	5,900,875		139,750
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						42.2 1.33

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S2.5						
NET SALVAGE PERCENT.. 0						
1968	77,985.60	66,756	44,049	33,937	9.00	3,771
1994	67,762.06	38,387	25,330	42,432	21.04	2,017
1995	330,739.84	182,304	120,294	210,446	21.58	9,752
1996	379,367.10	202,203	133,424	245,943	22.34	11,009
2001	23,755.51	10,422	6,877	16,879	26.23	643
2020	31,724.60	1,053	695	31,030	43.75	709
2021	86,020.79	946	624	85,397	44.75	1,908
	997,355.50	502,071	331,293	666,063		29,809
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						22.3 2.99

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 47-R3						
NET SALVAGE PERCENT.. 0						
1995	84,892.46	47,913	38,505	46,387	20.45	2,268
1996	193,086.59	105,850	85,065	108,022	21.01	5,141
2004	707.52	280	225	483	26.75	18
2020	34,988.42	1,291	1,038	33,950	39.15	867
2021	35,000.00	441	354	34,646	39.34	881
	348,674.99	155,775	125,187	223,488		9,175
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						24.4 2.63

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-L2.5						
NET SALVAGE PERCENT.. 0						
1996	11,818.11	10,698	8,920	2,898	2.67	1,085
1998	13,411.65	11,883	9,908	3,504	3.02	1,160
2011	2,612.02	1,744	1,454	1,158	5.22	222
2016	1,759.64	722	602	1,158	7.90	147
	29,601.42	25,047	20,884	8,718		2,614
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						3.3 8.83

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S0.5						
NET SALVAGE PERCENT.. 0						
1995	37,977.20	27,070	25,410	12,567	10.68	1,177
1996	1,162,872.61	812,499	762,664	400,209	11.00	36,383
1997	7,184.66	4,911	4,610	2,575	11.34	227
2001	37,767.40	23,302	21,873	15,894	12.72	1,250
2002	11,398.80	6,802	6,385	5,014	13.18	380
2004	136,926.05	76,432	71,743	65,183	13.85	4,706
2006	18,679.73	9,613	9,023	9,657	14.62	661
2012	21,045.98	7,577	7,112	13,934	16.89	825
2013	4,017.01	1,325	1,244	2,773	17.27	161
2015	35,558.03	9,384	8,809	26,749	18.13	1,475
2016	5,563.09	1,273	1,195	4,368	18.54	236
2021	92,400.00	2,218	2,081	90,319	20.38	4,432
	1,571,390.56	982,406	922,149	649,241		51,913
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.5 3.30

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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-S1.5						
NET SALVAGE PERCENT.. 0						
1968	1,932,300.82	1,798,779	1,609,027	323,274	3.97	81,429
1995	3,881,974.46	2,664,587	2,383,503	1,498,471	12.11	123,738
1999	2,563.05	1,592	1,424	1,139	13.73	83
2001	51,881.54	30,205	27,019	24,863	14.71	1,690
2002	112,224.21	63,025	56,376	55,848	15.22	3,669
2003	5,705.24	3,082	2,757	2,948	15.75	187
2004	11,659.50	6,040	5,403	6,256	16.28	384
2009	4,394.40	1,736	1,553	2,841	19.15	148
2012	42,667.10	13,214	11,820	30,847	21.17	1,457
2013	3,161.46	884	791	2,370	21.90	108
2014	3,841.44	957	856	2,985	22.62	132
2015	47,979.09	10,416	9,317	38,662	23.44	1,649
2016	14,668.13	2,719	2,432	12,236	24.17	506
2017	4,492.54	686	614	3,879	25.00	155
2018	8,969.16	1,071	958	8,011	25.82	310
2021	39,600.00	681	609	38,991	28.57	1,365
	6,168,082.14	4,599,674	4,114,459	2,053,624		217,010
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.5						3.52

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 381.00 PLANT SEWERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
1995	963,278.36	518,244	518,739	444,539	22.76	19,532
1999	16,995.91	7,954	7,962	9,034	25.58	353
2002	24,126.76	9,926	9,935	14,192	27.90	509
2003	528,446.92	207,257	207,455	320,992	28.67	11,196
2004	40,964.87	15,272	15,286	25,679	29.45	872
2016	2,532.33	315	316	2,217	38.75	57
	1,576,345.15	758,968	759,693	816,652		32,519
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						25.1 2.06

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2003	732.58	587	365	367	4.60	80
	732.58	587	365	367		80
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						4.6 10.92

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2003	10,612.51	9,817	10,393	220	1.50	147
2004	155.44	136	144	11	2.50	4
2005	2,196.86	1,812	1,918	279	3.50	80
2011	4,497.54	2,361	2,499	1,999	9.50	210
2012	3,664.69	1,741	1,843	1,822	10.50	174
2016	1,348.25	371	393	955	14.50	66
	22,475.29	16,238	17,190	5,285		681
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						7.8 3.03

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 14-L4						
NET SALVAGE PERCENT.. 0						
1995	14,048.93	13,813	14,049			
2016	19,619.21	8,146	8,654	10,966	7.75	1,415
	33,668.14	21,959	22,703	10,966		1,415
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.7						4.20

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 392.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2017	6,403.05	1,153	769	5,634	20.50	275
	6,403.05	1,153	769	5,634		275
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 20.5 4.29						

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2002	6,613.48	6,448	3,750	2,863	0.50	2,863
2003	4,845.24	4,482	2,606	2,239	1.50	1,493
2004	1,301.53	1,139	662	640	2.50	256
2006	6,217.59	4,819	2,802	3,416	4.50	759
2009	3,995.49	2,497	1,452	2,543	7.50	339
2013	4,196.99	1,784	1,038	3,159	11.50	275
2015	11,958.86	3,887	2,260	9,699	13.50	718
2016	7,730.04	2,126	1,236	6,494	14.50	448
2020	40,000.00	3,000	1,745	38,255	18.50	2,068
2021	30,000.00	750	436	29,564	19.50	1,516
	116,859.22	30,932	17,987	98,872		10,735

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.2 9.19

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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 22-R2						
NET SALVAGE PERCENT.. 0						
2014	2,684.02	986	1,079	1,606	12.91	124
	2,684.02	986	1,079	1,606		124
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.0 4.62

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2011	2,346.41	1,642	1,231	1,115	4.50	248
2016	2,698.67	990	742	1,957	9.50	206
2020	232,000.00	23,200	17,391	214,609	13.50	15,897
2021	142,000.00	4,733	3,548	138,452	14.50	9,548
	379,045.08	30,565	22,912	356,133		25,899
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.8 6.83

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 397.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2021

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						
2020	132,000.00	13,200	7,596	124,404	13.50	9,215
2021	132,000.00	4,400	2,532	129,468	14.50	8,929
	264,000.00	17,600	10,128	253,872		18,144
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						14.0 6.87

PART III. EXPERIENCED AND ESTIMATED NET SALVAGE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

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

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2020 TRANSACTION YEAR				
354.30	4,190.64	419.06		419.06-
354.40	21,107.61	2,110.76		2,110.76-
361.10	9,588.00	1,917.60		1,917.60-
361.20	1,538.54	307.71		307.71-
363.00	1,171.22	234.24		234.24-
390.00	2,469.18			
393.00	16,022.27			
396.00	926.34			
397.00	5,273.11			
	62,286.91	4,989.37		4,989.37-
2021 TRANSACTION YEAR				
354.30	4,241.48	424.15		424.15-
354.40	21,363.71	2,136.37		2,136.37-
361.10	36,703.43	7,340.69		7,340.69-
361.20	4,419.13	883.83		883.83-
363.00	1,542.48	308.50		308.50-
394.00	6,372.63			
	74,642.86	11,093.54		11,093.54-
TOTAL	136,929.77	16,082.91		16,082.91-

EXHIBIT NO. 11-AE - DEPRECIATION STUDY

WASTEWATER CSS KANE OPERATIONS

AS OF DECEMBER 31, 2022

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

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER CSS KANE OPERATIONS

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS

RELATED TO WASTEWATER PLANT

AS OF DECEMBER 31, 2022

Prepared by:



Gannett Fleming

*Excellence Delivered **As Promised***

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

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WASTEWATER CSS KANE OPERATIONS

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2022

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2022. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020". 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

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

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER CSS KANE OPERATIONS

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2022. Table 1 sets forth the development of the net original cost by account as of December 31, 2022. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2022, 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, 2022. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2022. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2018 through 2022.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-5. 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 2018 through 2022, beginning on page III-2.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2022

DEPRECIABLE GROUP (1)	ORIGINAL COST	CUSTOMER	CONTRIBUTIONS	EXCLUDED	NET ORIGINAL COST
	AS OF DECEMBER 31, 2022 (2)	ADVANCES (3)	IN AID OF CONSTRUCTION (4)	PROPERTY (5)	AS OF DECEMBER 31, 2022 (6)
DEPRECIABLE PLANT					
354.30 STRUCTURES AND IMPROVEMENTS - SPP	2,273,000.42				2,273,000.42
354.40 STRUCTURES AND IMPROVEMENTS - TDP	11,448,758.73				11,448,758.73
360.10 COLLECTION SEWERS - FORCE MAINS	551,255.91				551,255.91
361.10 COLLECTION SEWERS - GRAVITY MAINS	11,222,180.40				11,222,180.40
361.20 MANHOLES	1,080,438.19				1,080,438.19
363.00 SERVICES	381,253.33				381,253.33
364.00 FLOW MEASURING DEVICES	29,601.42				29,601.42
371.00 PUMPING EQUIPMENT	1,571,390.56				1,571,390.56
380.00 TREATMENT EQUIPMENT	6,168,082.14				6,168,082.14
381.00 PLANT SEWERS	1,576,345.15				1,576,345.15
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	732.58				732.58
389.60 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	1,438,800.00				1,438,800.00
390.00 OFFICE FURNITURE AND EQUIPMENT	32,475.29				32,475.29
391.00 TRANSPORTATION EQUIPMENT	33,668.14				33,668.14
392.00 STORES EQUIPMENT	6,403.05				6,403.05
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	130,245.74				130,245.74
395.00 POWER OPERATED EQUIPMENT	2,684.02				2,684.02
396.00 COMMUNICATION EQUIPMENT	389,045.08				389,045.08
397.00 MISCELLANEOUS EQUIPMENT	406,000.00				406,000.00
TOTAL DEPRECIABLE PLANT	38,742,360.15	0.00	0.00	0.00	38,742,360.15
NONDEPRECIABLE PLANT					
353.20 LAND AND LAND RIGHTS - COLLECTION	38,022.09				38,022.09
TOTAL NONDEPRECIABLE PLANT	38,022.09	0.00	0.00	0.00	38,022.09
TOTAL UTILITY PLANT	38,780,382.24	0.00	0.00	0.00	38,780,382.24

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2022

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2022 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL ACCRUAL AMOUNT (6)	CALCULATED ANNUAL ACCRUAL RATE (7)=(6)/(3)	COMPOSITE REMAINING LIFE (8)
DEPRECIABLE PLANT							
354.30	STRUCTURES AND IMPROVEMENTS - SPP	2,273,000.42	994,479	1,278,522	44,358	1.95	28.8
354.40	STRUCTURES AND IMPROVEMENTS - TDP	11,448,758.73	5,028,143	6,420,616	222,749	1.95	28.8
360.10	COLLECTION SEWERS - FORCE MAINS	551,255.91	229,066	322,190	7,392	1.34	43.6
361.10	COLLECTION SEWERS - GRAVITY MAINS	11,222,180.40	4,655,722	6,566,458	151,451	1.35	43.4
361.20	MANHOLES	1,080,438.19	349,572	730,866	31,240	2.89	23.4
363.00	SERVICES	381,253.33	131,890	249,363	9,908	2.60	25.2
364.00	FLOW MEASURING DEVICES	29,601.42	23,498	6,104	1,897	6.41	3.2
371.00	PUMPING EQUIPMENT	1,571,390.56	974,005	597,385	48,916	3.11	12.2
380.00	TREATMENT EQUIPMENT	6,168,082.14	4,331,575	1,836,507	197,904	3.21	9.3
381.00	PLANT SEWERS	1,576,345.15	792,165	784,180	31,988	2.03	24.5
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	732.58	445	287	68	9.28	4.2
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	1,438,800.00	11,990	1,426,810	317,069	22.04	4.5
390.00	OFFICE FURNITURE AND EQUIPMENT	32,475.29	18,023	14,452	1,085	3.34	13.3
391.00	TRANSPORTATION EQUIPMENT	33,668.14	24,117	9,551	1,403	4.17	6.8
392.00	STORES EQUIPMENT	6,403.05	1,044	5,359	275	4.29	19.5
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	130,245.74	22,627	107,619	8,605	6.61	12.5
395.00	POWER OPERATED EQUIPMENT	2,684.02	1,203	1,482	120	4.47	12.4
396.00	COMMUNICATION EQUIPMENT	389,045.08	49,399	339,646	26,516	6.82	12.8
397.00	MISCELLANEOUS EQUIPMENT	406,000.00	29,805	376,195	27,843	6.86	13.5
	TOTAL DEPRECIABLE PLANT	38,742,360.15	17,668,766	21,073,592	1,130,787	2.92	18.6
NONDEPRECIABLE PLANT							
353.20	LAND AND LAND RIGHTS - COLLECTION	38,022.09					
	TOTAL NONDEPRECIABLE PLANT	38,022.09			8,120		
	AMORTIZATION OF NET SALVAGE						
	TOTAL UTILITY PLANT	38,780,382.24	17,668,766	21,073,592	1,138,907		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2022, OF BOOK RESERVE AS OF DECEMBER 31, 2021

ACCOUNT (1)	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (2)	+	PROJECTED DEPRECIATION ACCRUALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	+	TRANSFERS (8)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2022 (9)
354.30	955,109		44,488		4,653		465								994,479
354.40	4,829,849		224,076		23,438		2,344								5,028,143
360.10	221,624		7,442												229,066
361.10	4,624,105		146,124		95,422		19,084								4,655,722
361.20	331,293		31,113		10,695		2,139								349,572
363.00	125,187		9,609		2,422		484								131,890
364.00	20,884		2,614												23,498
371.00	922,149		51,856												974,005
380.00	4,114,459		217,116												4,331,575
381.00	759,693		32,473												792,165
389.10	365		80												445
389.60	0		11,990												11,990
390.00	17,190		833												18,023
391.00	22,703		1,414												24,117
392.00	769		275												1,044
393.00	17,987		11,253		6,613										22,627
395.00	1,079		124												1,203
396.00	22,912		26,486												49,399
397.00	10,128		19,677												29,805
TOTAL	16,997,485		839,041		143,243		24,517		0		0		0		17,668,766

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2021 (2)	NET ORIGINAL COST AS OF 12/31/2022 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.30	2,239,223.06	2,273,000.42	1.97	44,319	169	44,488
354.40	11,278,627.31	11,448,758.73	1.97	223,227	849	224,076
360.10	551,255.91	551,255.91	1.35	7,442		7,442
361.10	10,524,980.12	11,222,180.40	1.33	144,272	1,852	146,124
361.20	997,355.50	1,080,438.19	2.99	30,875	238	31,113
363.00	348,674.99	381,253.33	2.63	9,500	109	9,609
364.00	29,601.42	29,601.42	8.83	2,614		2,614
371.00	1,571,390.56	1,571,390.56	3.30	51,856		51,856
380.00	6,168,082.14	6,168,082.14	3.52	217,116		217,116
381.00	1,576,345.15	1,576,345.15	2.06	32,473		32,473
389.10	732.58	732.58	10.92	80		80
389.60	0.00	1,438,800.00	20.00	11,990		11,990
390.00	22,475.29	32,475.29	3.03	833		833
391.00	33,668.14	33,668.14	4.20	1,414		1,414
392.00	6,403.05	6,403.05	4.29	275		275
393.00	116,859.22	130,245.74	9.19	11,253		11,253
395.00	2,684.02	2,684.02	4.62	124		124
396.00	379,045.08	389,045.08	6.83	26,486		26,486
397.00	264,000.00	406,000.00	6.87	19,677		19,677
TOTAL	36,111,403.54	38,742,360.15		835,824	3,217	839,041

* Total accruals shown are based on average monthly balances.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2018		2019		PROJECTED 2020		PROJECTED 2021		PROJECTED 2022		NET SALVAGE (12)*	SALVAGE ACCURAL (13)=(12)/5
	GROSS SALVAGE - (2)	COST OF REMOVAL (3)	GROSS SALVAGE - (4)	COST OF REMOVAL (5)	GROSS SALVAGE - (6)	COST OF REMOVAL (7)	GROSS SALVAGE - (8)	COST OF REMOVAL (9)	GROSS SALVAGE - (10)	COST OF REMOVAL (11)		
354.30					419	424		465			(1,309)	(262)
354.40					2,111	2,136		2,344			(6,591)	(1,318)
361.10					1,918	7,341		19,084			(28,343)	(5,669)
361.20					308	884		2,139			(3,330)	(666)
363.00					234	308		484			(1,027)	(205)
TOTAL	0	0	0	0	4,989	11,094	0	24,517	0	24,517	(40,600)	(8,120)

* Column (12) equals the summation of Columns (2) through (11).

PART II. DETAILED DEPRECIATION CALCULATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

CUMULATIVE DEPRECIATED ORIGINAL COST BY YEAR INSTALLED
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

YEAR INST (1)	ORIGINAL COST (2)	ACCRUED DEPRECIATION (3)	AMOUNT		CUMULATIVE AMOUNT (5)	DEPRECIATED ORIGINAL COST PCT OF COL 4 TOTAL (6)
			(2)	(3)		
1968	6,634,467	4,637,449	1,997,018		1,997,018	9.5
1993	13,934	6,925	7,009		2,004,027	9.5
1994	737,343	288,239	449,104		2,453,131	11.6
1995	16,295,582	8,305,672	7,989,910		10,443,041	49.6
1996	7,322,255	3,361,118	3,961,137		14,404,178	68.4
1997	7,185	4,842	2,343		14,406,521	68.4
1998	31,385	16,955	14,430		14,420,951	68.4
1999	52,560	22,497	30,063		14,451,014	68.6
2001	430,748	153,877	276,871		14,727,885	69.9
2002	198,063	92,997	105,066		14,832,951	70.4
2003	566,963	242,127	324,836		15,157,787	71.9
2004	417,719	169,782	247,937		15,405,724	73.1
2005	2,197	1,967	230		15,405,954	73.1
2006	213,244	76,025	137,219		15,543,173	73.8
2007	13,046	4,108	8,938		15,552,111	73.8
2008	827	249	578		15,552,689	73.8
2009	13,326	4,757	8,569		15,561,258	73.8
2010	4,396	1,185	3,211		15,564,469	73.9
2011	9,456	5,915	3,541		15,568,010	73.9
2012	90,262	27,068	63,194		15,631,204	74.2
2013	44,392	8,298	36,094		15,667,298	74.3
2014	6,525	2,196	4,329		15,671,627	74.4
2015	102,365	25,822	76,543		15,748,170	74.7
2016	62,779	19,569	43,210		15,791,380	74.9
2017	14,744	2,336	12,408		15,803,788	75.0
2018	8,969	1,267	7,702		15,811,490	75.0
2020	1,070,503	92,266	978,237		16,789,727	79.7
2021	1,602,924	65,765	1,537,159		18,326,886	87.0
2022	2,774,200	27,493	2,746,707		21,073,593	100.0
SUBTOTAL	38,742,360	17,668,766	21,073,592			
NONDEPRECIABLE	38,022		38,022			
TOTAL	38,780,382	17,668,766	21,111,614			

NET UTILITY PLANT IN SERVICE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - SPP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 55-S0						
NET SALVAGE PERCENT.. 0						
1993	2,308.14	1,191	1,143	1,165	27.65	42
1994	18,174.59	9,167	8,798	9,377	28.00	335
1995	1,507,081.87	746,006	716,002	791,080	28.06	28,192
1996	516,121.35	248,925	238,914	277,207	28.45	9,744
1999	3,385.66	1,504	1,444	1,942	29.41	66
2001	3,170.65	1,329	1,276	1,895	29.78	64
2002	1,921.53	776	745	1,177	30.26	39
2003	1,215.96	474	455	761	30.50	25
2004	17,813.81	6,691	6,422	11,392	30.76	370
2006	31,199.53	10,758	10,325	20,875	31.35	666
2007	2,097.18	692	664	1,433	31.45	46
2008	137.02	43	41	96	31.80	3
2009	185.51	55	53	133	31.95	4
2010	728.27	204	196	532	32.14	17
2012	740.64	180	173	568	32.60	17
2015	1,137.93	210	202	936	33.15	28
2017	637.53	90	86	552	33.56	16
2020	71,525.67	4,935	4,736	66,790	33.73	1,980
2021	54,986.93	2,353	2,258	52,729	33.59	1,570
2022	38,430.65	569	546	37,885	33.40	1,134
	2,273,000.42	1,036,152	994,479	1,278,522		44,358

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 28.8 1.95

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 354.40 STRUCTURES AND IMPROVEMENTS - TDP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 55-S0						
NET SALVAGE PERCENT.. 0						
1993	11,625.94	6,001	5,782	5,844	27.65	211
1994	91,542.63	46,174	44,486	47,057	28.00	1,681
1995	7,590,943.11	3,757,517	3,620,142	3,970,801	28.06	141,511
1996	2,599,625.03	1,253,799	1,207,960	1,391,665	28.45	48,916
1999	17,053.05	7,575	7,298	9,755	29.41	332
2001	15,970.03	6,695	6,450	9,520	29.78	320
2002	9,678.40	3,908	3,765	5,913	30.26	195
2003	6,124.58	2,389	2,302	3,823	30.50	125
2004	89,725.40	33,701	32,469	57,256	30.76	1,861
2006	157,147.30	54,184	52,203	104,944	31.35	3,347
2007	10,563.17	3,488	3,361	7,202	31.45	229
2008	690.18	216	208	482	31.80	15
2009	934.39	278	268	666	31.95	21
2010	3,668.18	1,027	989	2,679	32.14	83
2012	3,730.50	909	876	2,854	32.60	88
2015	5,731.58	1,057	1,018	4,714	33.15	142
2017	3,211.12	452	435	2,776	33.56	83
2020	360,263.94	24,858	23,950	336,314	33.73	9,971
2021	276,960.85	11,854	11,421	265,540	33.59	7,905
2022	193,569.35	2,865	2,760	190,810	33.40	5,713
	11,448,758.73	5,218,947	5,028,143	6,420,616		222,749

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 28.8 1.95

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 360.10 COLLECTION SEWERS - FORCE MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 75-R3						
NET SALVAGE PERCENT.. 0						
1995	346,434.55	135,283	147,780	198,655	42.92	4,628
1996	179,752.89	67,641	73,889	105,864	43.92	2,410
2004	25,068.47	6,771	7,397	17,672	49.99	354
	551,255.91	209,695	229,066	322,190		7,392
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						43.6 1.34

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 361.10 COLLECTION SEWERS - GRAVITY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 80-R2.5						
NET SALVAGE PERCENT.. 0						
1968	4,629,017.17	2,976,921	2,917,564	1,711,453	30.25	56,577
1994	560,459.03	212,414	208,179	352,280	46.69	7,545
1995	1,541,564.22	568,066	556,739	984,825	47.13	20,896
1996	2,283,830.95	817,155	800,862	1,482,969	47.57	31,174
1998	17,973.50	5,989	5,870	12,104	49.03	247
1999	12,562.34	4,015	3,935	8,627	50.03	172
2001	298,282.56	88,500	86,735	211,548	50.96	4,151
2002	38,713.48	10,952	10,734	27,979	51.96	538
2003	9,279.96	2,515	2,465	6,815	52.45	130
2004	93,399.61	24,190	23,707	69,693	52.93	1,317
2007	385.33	85	83	302	54.92	5
2009	3,815.80	736	721	3,095	56.43	55
2012	18,412.90	2,823	2,767	15,646	57.99	270
2013	33,016.23	4,609	4,517	28,499	58.53	487
2016	6,859.32	669	656	6,203	60.17	103
2020	168,016.41	6,637	6,505	161,511	60.79	2,657
2021	713,968.97	17,349	17,003	696,966	60.23	11,572
2022	792,622.62	6,817	6,680	785,942	57.98	13,555
	11,222,180.40	4,750,442	4,655,722	6,566,458		151,451
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						43.4 1.35

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 361.20 MANHOLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S2.5						
NET SALVAGE PERCENT.. 0						
1968	73,149.16	62,989	42,982	30,167	8.79	3,432
1994	67,166.68	39,239	26,776	40,391	20.28	1,992
1995	328,163.16	185,904	126,857	201,306	21.04	9,568
1996	376,760.36	207,670	141,710	235,050	21.58	10,892
2001	23,676.09	10,844	7,400	16,276	25.45	640
2020	31,724.57	1,751	1,195	30,530	42.75	714
2021	86,020.79	2,856	1,948	84,073	43.75	1,922
2022	93,777.38	1,032	704	93,073	44.75	2,080
	1,080,438.19	512,285	349,572	730,866		31,240
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						23.4 2.89

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 363.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 47-R3						
NET SALVAGE PERCENT.. 0						
1995	84,115.68	49,039	40,107	44,009	19.67	2,237
1996	191,473.30	108,068	88,383	103,090	20.45	5,041
2004	704.80	292	239	466	26.14	18
2020	34,972.74	2,133	1,744	33,229	38.48	864
2021	34,986.81	1,291	1,056	33,931	39.15	867
2022	35,000.00	441	361	34,639	39.34	881
	381,253.33	161,264	131,890	249,363		9,908
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						25.2 2.60

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-L2.5						
NET SALVAGE PERCENT.. 0						
1996	11,818.11	10,804	9,959	1,859	2.49	747
1998	13,411.65	12,026	11,085	2,327	2.82	825
2011	2,612.02	1,829	1,686	926	4.92	188
2016	1,759.64	833	768	992	7.24	137
	29,601.42	25,492	23,498	6,104		1,897
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						3.2 6.41

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S0.5						
NET SALVAGE PERCENT.. 0						
1995	37,977.20	27,571	26,591	11,386	10.38	1,097
1996	1,162,872.61	828,896	799,441	363,432	10.68	34,029
1997	7,184.66	5,020	4,842	2,343	11.00	213
2001	37,767.40	23,952	23,101	14,666	12.40	1,183
2002	11,398.80	7,033	6,783	4,616	12.72	363
2004	136,926.05	79,280	76,463	60,463	13.45	4,495
2006	18,679.73	10,048	9,691	8,989	14.17	634
2012	21,045.98	8,176	7,885	13,161	16.53	796
2013	4,017.01	1,446	1,395	2,622	16.89	155
2015	35,558.03	10,589	10,213	25,345	17.69	1,433
2016	5,563.09	1,468	1,416	4,147	18.13	229
2021	92,400.00	6,413	6,184	86,216	20.10	4,289
	1,571,390.56	1,009,892	974,005	597,385		48,916
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.2 3.11

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 380.00 TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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-S1.5						
NET SALVAGE PERCENT.. 0						
1968	1,932,300.82	1,811,339	1,676,903	255,398	3.64	70,164
1995	3,881,974.46	2,722,040	2,520,013	1,361,961	11.72	116,208
1999	2,563.05	1,638	1,516	1,047	13.26	79
2001	51,881.54	31,233	28,915	22,967	14.21	1,616
2002	112,224.21	65,337	60,488	51,736	14.71	3,517
2003	5,705.24	3,204	2,966	2,739	15.22	180
2004	11,659.50	6,298	5,831	5,828	15.75	370
2009	4,394.40	1,851	1,714	2,680	18.55	144
2012	42,667.10	14,473	13,398	29,269	20.46	1,431
2013	3,161.46	979	906	2,255	21.17	107
2014	3,841.44	1,074	994	2,847	21.90	130
2015	47,979.09	11,947	11,061	36,918	22.62	1,632
2016	14,668.13	3,184	2,948	11,720	23.44	500
2017	4,492.54	833	771	3,722	24.17	154
2018	8,969.16	1,369	1,267	7,702	25.00	308
2021	39,600.00	2,035	1,884	37,716	27.66	1,364
	6,168,082.14	4,678,834	4,331,575	1,836,507		197,904
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.3 3.21

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 381.00 PLANT SEWERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
1995	963,278.36	532,500	537,392	425,886	22.25	19,141
1999	16,995.91	8,228	8,304	8,692	25.04	347
2002	24,126.76	10,387	10,482	13,645	27.12	503
2003	528,446.92	217,403	219,400	309,047	27.90	11,077
2004	40,964.87	16,066	16,214	24,751	28.67	863
2016	2,532.33	370	373	2,159	37.95	57
	1,576,345.15	784,954	792,165	784,180		31,988
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						24.5 2.03

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2003	732.58	601	445	287	4.25	68
	732.58	601	445	287		68
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						4.2 9.28

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 389.60 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
2022	1,438,800.00	143,880	11,990	1,426,810	4.50	317,069
	1,438,800.00	143,880	11,990	1,426,810		317,069
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.5						22.04

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 390.00 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2003	10,612.51	10,347	10,589	24	0.50	24
2004	155.44	144	147	8	1.50	5
2005	2,196.86	1,922	1,967	230	2.50	92
2011	4,497.54	2,586	2,647	1,851	8.50	218
2012	3,664.69	1,924	1,969	1,696	9.50	179
2016	1,348.25	438	448	900	13.50	67
2022	10,000.00	250	256	9,744	19.50	500
	32,475.29	17,611	18,023	14,452		1,085
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.3 3.34

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 391.00 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 14-L4						
NET SALVAGE PERCENT.. 0						
1995	14,048.93	13,908	14,049			
2016	19,619.21	9,578	10,068	9,552	6.81	1,403
	33,668.14	23,486	24,117	9,551		1,403
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						6.8 4.17

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 392.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2017	6,403.05	1,409	1,044	5,359	19.50	275
	6,403.05	1,409	1,044	5,359		275
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.5 4.29

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 393.00 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2003	4,845.24	4,724	3,505	1,340	0.50	1,340
2004	1,301.53	1,204	893	409	1.50	273
2006	6,217.59	5,130	3,806	2,412	3.50	689
2009	3,995.49	2,697	2,001	1,994	6.50	307
2013	4,196.99	1,994	1,480	2,717	10.50	259
2015	11,958.86	4,485	3,328	8,631	12.50	690
2016	7,730.04	2,512	1,864	5,866	13.50	435
2020	40,000.00	5,000	3,709	36,291	17.50	2,074
2021	30,000.00	2,250	1,670	28,330	18.50	1,531
2022	20,000.00	500	371	19,629	19.50	1,007
	130,245.74	30,496	22,627	107,619		8,605

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.5 6.61

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 395.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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 22-R2						
NET SALVAGE PERCENT.. 0						
2014	2,684.02	1,093	1,203	1,482	12.38	120
	2,684.02	1,093	1,203	1,482		120
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.4 4.47

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 396.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2011	2,346.41	1,799	1,582	764	3.50	218
2016	2,698.67	1,169	1,028	1,671	8.50	197
2020	232,000.00	38,667	34,007	197,993	12.50	15,839
2021	142,000.00	14,200	12,489	129,511	13.50	9,593
2022	10,000.00	333	293	9,707	14.50	669
	389,045.08	56,168	49,399	339,646		26,516
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.8 6.82

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

ACCOUNT 397.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2022

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						
2020	132,000.00	22,000	16,420	115,580	12.50	9,246
2021	132,000.00	13,200	9,852	122,148	13.50	9,048
2022	142,000.00	4,733	3,533	138,467	14.50	9,549
	406,000.00	39,933	29,805	376,195		27,843
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.5 6.86

PART III. EXPERIENCED AND ESTIMATED NET SALVAGE

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER CSS KANE OPERATIONS

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

ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2020 TRANSACTION YEAR				
354.30	4,190.64	419.06		419.06-
354.40	21,107.61	2,110.76		2,110.76-
361.10	9,588.00	1,917.60		1,917.60-
361.20	1,538.54	307.71		307.71-
363.00	1,171.22	234.24		234.24-
390.00	2,469.18			
393.00	16,022.27			
396.00	926.34			
397.00	5,273.11			
	62,286.91	4,989.37		4,989.37-
2021 TRANSACTION YEAR				
354.30	4,241.48	424.15		424.15-
354.40	21,363.71	2,136.37		2,136.37-
361.10	36,703.43	7,340.69		7,340.69-
361.20	4,419.13	883.83		883.83-
363.00	1,542.48	308.50		308.50-
394.00	6,372.63			
	74,642.86	11,093.54		11,093.54-
2022 TRANSACTION YEAR				
354.30	4,653.29	465.33		465.33-
354.40	23,437.93	2,343.79		2,343.79-
361.10	95,422.34	19,084.47		19,084.47-
361.20	10,694.69	2,138.94		2,138.94-
363.00	2,421.66	484.33		484.33-
393.00	6,613.48			
	143,243.39	24,516.86		24,516.86-
TOTAL	280,173.16	40,599.77		40,599.77-