



BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Aqua :  
Ohio, Inc. for Authority to Increase its : Case No. 09-1044-WW-AIR  
Rates and Charges in the Lake Erie :  
Division. :

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PREPARED DIRECT TESTIMONY OF

**JOHN J. SPANOS**

ON BEHALF OF  
AQUA OHIO, INC.  
LAKE ERIE DIVISION

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3 **I. INTRODUCTION AND PURPOSE**

4 **Q. Please state your name and address.**

5 A. My name is John J. Spanos. My business address is 207 Senate Avenue, Camp Hill,  
6 Pennsylvania.

7 **Q. Are you associated with any firm?**

8 A. Yes. I am associated with the firm of Gannett Fleming, Inc.

9 **Q. How long have you been associated with Gannett Fleming, Inc.?**

10 A. I have been associated with the firm since college graduation in June, 1986.

11 **Q. What is your position with the firm?**

12 A. I am a Vice President of the Valuation and Rate Division.

13 **Q. What is your educational background?**

14 A. I have Bachelor of Science degrees in Industrial Management and Mathematics from  
15 Carnegie-Mellon University and a Master of Business Administration from York College.

1   **Q.    Do you belong to any professional societies?**

2   A.    Yes. I am a member of the Society of Depreciation Professionals and the American Gas  
3       Association/Edison Electric Institute Industry Accounting Committee.

4   **Q.    Do you hold any special certification as a depreciation expert?**

5   A.    Yes. The Society of Depreciation Professionals has established national standards for  
6       depreciation professionals. The Society administers an examination to become certified in  
7       this field. I passed the certification exam in September 1997 and was recertified in August  
8       2003 and February 2008.

9   **Q.    Please outline your experience in the field of depreciation.**

10  A.    In June, 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc. as  
11       a Depreciation Analyst. During the period from June, 1986 through December, 1995, I  
12       helped prepare numerous depreciation and original cost studies for utility companies in  
13       various industries. I helped perform depreciation studies for the following telephone  
14       companies: United Telephone of Pennsylvania, United Telephone of New Jersey and  
15       Anchorage Telephone Utility. I helped perform depreciation studies for the following  
16       companies in the railroad industry: Union Pacific Railroad, Burlington Northern Railroad  
17       and Wisconsin Central Transportation Corporation.

18           I helped perform depreciation studies for the following organizations in the elec-  
19       tric industry: Chugach Electric Association, Duke Energy Ohio, Inc. ("DE-Ohio"), Duke  
20       Energy Kentucky, Inc. ("DE-Kentucky"), Northwest Territories Power Corporation and  
21       the City of Calgary - Electric System.

1 I helped perform depreciation studies for the following pipeline companies: Trans  
2 Canada Pipelines Limited, Trans Mountain Pipe Line Company Ltd., Interprovincial Pipe  
3 Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline Company.

4 I helped perform depreciation studies for the following gas companies: Columbia  
5 Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural Gas Company, T.  
6 W. Phillips Gas & Oil Company, DE-Ohio, DE-Kentucky, Lawrenceburg Gas Company  
7 and Penn Fuel Gas, Inc.

8 I helped perform depreciation studies for the following water companies: Indiana-  
9 American Water Company, Consumers Pennsylvania Water Company and The York Wa-  
10 ter Company; and depreciation and original cost studies for Philadelphia Suburban Water  
11 Company and Pennsylvania-American Water Company.

12 In each of the above studies, I assembled and analyzed historical and simulated  
13 data, performed field reviews, developed preliminary estimates of service life and net sal-  
14 vage, calculated annual depreciation, and prepared reports for submission to state Public  
15 Utility Commissions or federal regulatory agencies. I performed these studies under the  
16 general direction of William M. Stout, P.E.

17 In January, 1996, I was assigned to the position of Supervisor of Depreciation  
18 Studies. In July, 1999, I was promoted to the position of Manager, Depreciation and Val-  
19 uation Studies. In December, 2000, I was promoted to my present position as Vice-  
20 President of Gannett Fleming Valuation and Rate Consultants, Inc. and I became respon-  
21 sible for conducting all depreciation, valuation and original cost studies, including the  
22 preparation of final exhibits and responses to data requests for submission to the appro-  
23 priate regulatory bodies.

1           Since January 1996, I have conducted depreciation studies similar to those previ-  
2           ously listed including assignments for   Pennsylvania American Water Company; Aqua  
3           Pennsylvania, Inc.; Kentucky American Water Company; Virginia American Water  
4           Company; Indiana American Water Company; Hampton Water Works Company; Omaha  
5           Public Power District; Enbridge Pipe Line Company, Inc.; Columbia Gas of Virginia,  
6           Inc.; Virginia Natural Gas Company National Fuel Gas Distribution Corporation - New  
7           York and Pennsylvania Divisions; The City of Bethlehem - Bureau of Water; The City of  
8           Coatesville Authority; The City of Lancaster - Bureau of Water; Peoples Energy Corpora-  
9           tion; The York Water Company; Public Service Company of Colorado; Enbridge Pipe-  
10          lines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP; Massachusetts-American  
11          Water Company; St. Louis County Water Company; Missouri-American Water Com-  
12          pany; Chugach Electric Association; Alliant Energy; Oklahoma Gas & Electric Com-  
13          pany; Nevada Power Company; Dominion Virginia Power; NUI-Virginia Gas Compa-  
14          nies; Pacific Gas & Electric Company; PSI Energy; NUI - Elizabethtown Gas Company;  
15          Cinergy Corporation – CG&E; Cinergy Corporation – ULH&P; Columbia Gas of Ken-  
16          tucky; SCANA, Inc.; Idaho Power Company; El Paso Electric Company; Central Hudson  
17          Gas & Electric; Centennial Pipeline Company; CenterPoint Energy-Arkansas; Center-  
18          Point Energy – Oklahoma; CenterPoint Energy – Entex; CenterPoint Energy - Louisiana;  
19          NSTAR – Boston Edison Company; Westar Energy, Inc.; PPL Electric Utilities; PPL Gas  
20          Utilities; Wisconsin Power & Light Company; TransAlaska Pipeline; Avista Corporation;  
21          Northwest Natural Gas; Allegheny Energy Supply, Inc.; Public Service Company of  
22          North Carolina; Artesian Water Company; Potomac Electric Power Company; South Jer-  
23          sey Gas Company; Duquesne Light Company; MidAmerican Energy Company; Laclede

1 Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas Services; Anchorage  
2 Water and Wastewater Utility; Duke Energy Carolinas; Duke Energy Ohio Gas; Duke  
3 Energy Kentucky; Duke Energy Indiana; Northern Indiana Public Service Company;  
4 Tennessee American Water Company; Columbia Gas of Maryland; Bonneville Power  
5 Administration; NSTAR Electric and Gas Company; EPCOR Distribution, Inc. and B. C.  
6 Gas Utility, Ltd.

7 My additional duties include determining final life and salvage estimates, con-  
8 ducting field reviews and presenting recommended depreciation rates to management for  
9 their consideration.

10 **Q. What is the extent of your formal instruction with respect to utility plant**  
11 **depreciation?**

12 A. I have completed the "Techniques of Life Analysis", "Techniques of Salvage and  
13 Depreciation Analysis", "Forecasting Life and Salvage", "Modeling and Life Analysis  
14 Using Simulation" and "Managing a Depreciation Study" programs conducted by  
15 Depreciation Programs, Inc. Also, I have completed the "Introduction to Public Utility  
16 Accounting" program conducted by the American Gas Association.

17 **Q. Have you previously testified on public utility ratemaking matters?**

18 A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the  
19 Commonwealth of Kentucky Public Service Commission; the Public Utilities Commis-  
20 sion of Ohio; the Nevada Public Utility Commission; the Public Utilities Board of New  
21 Jersey; the Missouri Public Service Commission; the Massachusetts Department of Tele-  
22 communications and Energy; the Alberta Energy & Utility Board; the Idaho Public Utility  
23 Commission; the Louisiana Public Service Commission; the State Corporation Commis-

1 sion of Kansas; the Oklahoma Corporate Commission; the Public Service Commission of  
2 South Carolina; Railroad Commission of Texas – Gas Services Division; the New York  
3 Public Service Commission; Illinois Commerce Commission; the Indiana Utility Regula-  
4 tory Commission; the California Public Utilities Commission; the Federal Energy Regu-  
5 latory Commission (“FERC”); the Arkansas Public Service Commission; the Public Util-  
6 ity Commission of Texas; the District of Columbia Public Service Commission; the  
7 Delaware Public Service Commission; the Maryland Public Service Commission; the  
8 Washington Utilities and Transportation Commission; the Tennessee Regulatory Com-  
9 mission; the Regulatory Commission of Alaska; and the North Carolina Utilities Com-  
10 mission.

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

12 A. I sponsor the depreciation study performed for Aqua Ohio, Inc.

## 13 **II. DEPRECIATION STUDY**

14 **Q. Please define the concept of depreciation.**

15 A. Depreciation refers to the loss in service value not restored by current maintenance,  
16 incurred in connection with the consumption or prospective retirement of utility plant in  
17 the course of service from causes which can be reasonably anticipated or contemplated,  
18 against which the Company is not protected by insurance. Among the causes to be given  
19 consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence,  
20 changes in the art, changes in demand and the requirements of public authorities.

21 **Q. Did you prepare the depreciation study filed by Aqua Ohio, Inc. in this proceeding?**

22 A. Yes. I prepared the depreciation study submitted by Aqua Ohio, Inc. with its filing in this  
proceeding. My report is entitled: “Depreciation Study - Calculated Annual Depreciation

1 Accruals Related to Water Plant at December 31, 2008". This report sets forth the results of  
2 my depreciation study for Aqua Ohio, Inc.

3 **Q. In preparing the depreciation study, did you follow generally accepted practices in**  
4 **the field of depreciation?**

5 A. Yes.

6 **Q. Please describe the contents of your report.**

7 A. My report is presented in three parts. Part I, Introduction, presents the scope and basis for  
8 the depreciation study. Part II, Methods Used in Study, includes descriptions of the basis  
9 of the study, the estimation of survivor curves and net salvage and the calculation of an-  
10 nual and accrued depreciation. Part III, Results of Study, presents a description of the re-  
11 sults, summaries of the depreciation calculations, graphs and tables that relate to the ser-  
12 vice life and net salvage analyses, and the detailed depreciation calculations.

13 The table on pages III-4 through III-6 presents the estimated survivor curve, the net  
14 salvage percent, the original cost at December 31, 2008, the calculated annual depreciation  
15 accrual and rate and the calculated accrued depreciation for each account or subaccount.  
16 The section beginning on page III-7 presents the results of the retirement rate analyses  
17 prepared as the historical bases for the service life estimates. The section beginning on page  
18 III-112 presents the results of the salvage analysis. The section beginning on page III-147  
19 presents the depreciation calculations related to surviving original cost at December 31,  
20 2008.

21 **Q. Please explain how you performed your depreciation study.**

22 A. I used the straight line whole life method of depreciation, with the average service life  
23 procedure. The annual depreciation is based on a method of depreciation accounting that



1 seeks to distribute the cost of fixed capital assets over the useful life of each unit, or  
2 group of assets, in a systematic and reasonable manner.

3 For General Plant Accounts 340.00, 340.10, 340.20, 342.00, 343.00, 344.00,  
4 346.00 and 347.00, I used the straight line whole life method of amortization. The ac-  
5 count numbers identified throughout my testimony represent those in effect as of Decem-  
6 ber 31, 2008. The annual amortization is based on amortization accounting that distrib-  
7 utes the cost of fixed capital assets over the amortization period selected for each account  
8 and vintage.

9 **Q. How did you determine the recommended annual depreciation accrual rates?**

10 A. I did this in two phases. In the first phase, I estimated the service life and net salvage  
11 characteristics for each depreciable group, that is, each plant account or subaccount  
12 identified as having similar characteristics. In the second phase, I calculated the annual  
13 depreciation accrual rates based on the service life and net salvage estimates determined in  
14 the first phase.

15 **Q. Please describe the first phase of the depreciation study, in which you estimated the**  
16 **service life and net salvage characteristics for each depreciable group.**

17 A. The service life and net salvage study consisted of compiling historical data from records  
18 related to Aqua Ohio, Inc. plant; analyzing these data to obtain historical trends of survivor  
19 characteristics; obtaining supplementary information from management and operating  
20 personnel concerning practices and plans as they relate to plant operations; and interpreting  
21 the above data and the estimates used by other water utilities to form judgments of average  
22 service life and net salvage characteristics.

1 **Q. What historical data did you analyze for the purpose of estimating service life**  
2 **characteristics?**

3 A. I analyzed the Company's accounting entries that record plant transactions during the period  
4 1915 through 2008. The transactions included additions, retirements, transfers, sales and the  
5 related balances. The Company records included surviving dollar value by original division  
6 for each plant account as of December 31, 2008.

7 **Q. What method did you use to analyze this service life data?**

8 A. I used the retirement rate method. This is the most appropriate method when retirement data  
9 covering a long period of time is available, because this method determines the average  
10 rates of retirement actually experienced by the Company during the period of time covered  
11 by the depreciation study.

12 **Q. Please describe how you used the retirement rate method to analyze Aqua Ohio,**  
13 **Inc.'s service life data.**

14 A. I applied the retirement rate analysis to each different group of property in the study. For  
15 each property group, I used the retirement rate data to form a life table which, when plotted,  
16 shows an original survivor curve for that property group. Each original survivor curve  
17 represents the average survivor pattern experienced by the several vintage groups during the  
18 experience band studied. The survivor patterns do not necessarily describe the life  
19 characteristics of the property group; therefore, interpretation of the original survivor curves  
20 is required in order to use them as valid considerations in estimating service life. The Iowa  
21 type survivor curves were used to perform these interpretations.

22 **Q. What is an "Iowa-type survivor curve" and how did you use such curves to estimate**  
23 **the service life characteristics for each property group?**

1 A. Iowa type curves are a widely-used group of survivor curves that contain the range of  
2 survivor characteristics usually experienced by utilities and other industrial companies. The  
3 Iowa curves were developed at the Iowa State College Engineering Experiment Station  
4 through an extensive process of observing and classifying the ages at which various types of  
5 property used by utilities and other industrial companies had been retired.

6 Iowa type curves are used to smooth and extrapolate original survivor curves de-  
7 termined by the retirement rate method. The Iowa curves and truncated Iowa curves were  
8 used in this study to describe the forecasted rates of retirement based on the observed  
9 rates of retirement and the outlook for future retirements.

10 The estimated survivor curve designations for each depreciable property group in-  
11 dicate the average service life, the family within the Iowa system to which the property  
12 group belongs, and the relative height of the mode. For example, the Iowa 55-R3 indi-  
13 cates an average service life of fifty-five years; a right-moded, or R, type curve (the mode  
14 occurs after average life for right-moded curves); and a moderate height, 3, for the mode  
15 (possible modes for R type curves range from 1 to 5).

16 **Q. Please use an example to describe how you estimated the average service lives and**  
17 **survivor curves utilized in this study.**

18 A. I will use Account 333, Services, as an example because it is one of the largest deprecia-  
19 ble groups and represents 14% of depreciable plant.

20 The retirement rate method was used to analyze the survivor characteristics of this  
21 property group. Aged plant accounting data was compiled from 1887 through 2008 and  
22 analyzed in periods that best represent the overall service life of this property. The life ta-  
23 bles for the 1887-2008 and 1969-2008 experience bands are presented on pages III-77

1 through III-82 of the report. The life tables display the retirement and surviving ratios of  
2 the aged plant data exposed to retirement by age interval. For example, page III-77 shows  
3 \$2,484 retired at age 1.5 with \$23,179,857 exposed to retirement. Consequently, the re-  
4 tirement ratio is .0001 and the surviving ratio is 0.9999. These life tables, or original sur-  
5 vivor curves, are plotted along with the estimated smooth survivor curve, the 60-R3 on  
6 page III-76.

7 **Q. Please describe how you estimated net salvage percentages.**

8 A. I estimated the net salvage percentages by incorporating the historical data for the period  
9 1986 through 2008 and considered estimates for other water companies.

10 **Q. Please describe the second phase of the process that you used in the depreciation**  
11 **study in which you calculated annual depreciation accrual rates.**

12 A. After I estimated the service life and net salvage characteristics for each depreciable  
13 property group, I calculated the annual depreciation accrual rates for each group, using the  
14 straight line whole life method, and the average service life procedure.

15 **Q. Please describe the straight line whole life method of depreciation.**

16 A. The straight line whole life method of depreciation allocates the original cost of the  
17 property, less future net salvage, in equal amounts to each year of service life.

18 **Q. Please describe amortization accounting.**

19 A. In amortization accounting, units of property are capitalized in the same manner as they are  
20 in depreciation accounting. Amortization accounting is used for accounts with a large  
21 number of units, but small asset values, therefore, depreciation accounting is difficult for  
22 these assets because periodic inventories are required to properly reflect plant in service.  
23 Consequently, retirements are recorded when a vintage is fully amortized rather than as the

1 units are removed from service. That is, there is no dispersion of retirement. All units are  
2 retired when the age of the vintage reaches the amortization period. Each plant account or  
3 group of assets is assigned a fixed period which represents an anticipated life which the  
4 asset will render full benefit. For example, in amortization accounting, assets that have a 20-  
5 year amortization period will be fully recovered after 20 years of service and taken off the  
6 Company books, but not necessarily removed from service. In contrast, assets that are taken  
7 out of service before 20 years remain on the books until the amortization period for that  
8 vintage has expired.

9 **Q. Amortization accounting is being implemented to which plant accounts?**

10 A. Amortization accounting is only appropriate for certain General Plant accounts. These  
11 accounts are 340.00, 340.10, 340.20, 343.00, 344.00, 346.00 and 347.00 which represent  
12 slightly more than three percent of depreciable plant.

13 **Q. Please use an example to illustrate how the annual depreciation accrual rate for a**  
14 **particular group of property is presented in your depreciation study.**

15 A. I will use Account 331, Mains, as an example because it is the largest depreciable group and  
16 represents 34% of depreciable plant.

17 As described on page 10 of this testimony, the retirement rate method was used to  
18 analyze the survivor characteristics of this property group. The life tables for the 1888-  
19 2008 and 1969-2008 experience bands are plotted along with the estimated smooth survi-  
20 vor curve, the 80-R3 on page III-69.

21 My calculation of the annual depreciation related to the original cost as of Decem-  
22 ber 31, 2008, of utility plant is presented on pages III-171 through III-174. The calculation  
23 is based on the 80-R3 survivor curve, 20% negative net salvage and the attained age. The

1 tabulation sets forth the installation year, the original cost, calculated accrued deprecia-  
2 tion, average life, life expectancy and annual accrual amount and rate. These totals are  
3 brought forward to the table on page III-4.

### III. CONCLUSION

4 **Q. Was the depreciation study filed by Aqua Ohio, Inc. In this proceeding prepared by**  
5 **you or under your direction and control?**

6 **A. Yes.**

7 **Q. Should the depreciation rates contained in the study filed by Aqua Ohio, Inc. in this**  
8 **proceeding be approved by the commission Aqua Ohio's calculation of its future**  
9 **depreciation expense?**

10 **A. Yes.**

11 **Q. Does this conclude your pre-filed direct testimony?**

12 **A. Yes**

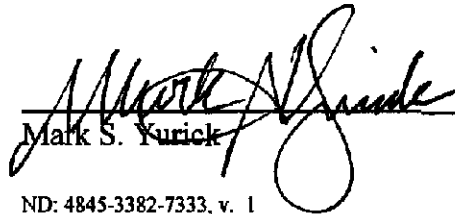
**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing *Prepared Direct Testimony of John J. Spanos* was served upon the following parties of record or as a courtesy, via U.S. Mail postage prepaid, express mail, hand delivery, or electronic transmission, on December 16<sup>th</sup>, 2009.

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