

# STATE OF NEW HAMPSHIRE BEFORE THE PUBLIC UTILITIES COMMISSION

Docket No. DW 19-084

Pennichuck Water Works Inc. Request for a Change in Rates

**DIRECT TESTIMONY** 

**OF** 

**GREGG H. THERRIEN** 

June 27, 2019

# TABLE OF CONTENTS

I.	INTRODUCTION	4
II.	ACOS Principles for Water Utilities	6
ш.	ACOS Study Methodology	8
	A. Introduction	8
	B. Special Contract Customers	9
	C. Cost Allocators	10
	D. Model Runs	16
IV.	ACOS Results	16
	A. Summary Class Allocation Results	16
	B. Fixed Versus Variable Cost Summary	21
V.	Use of the ACOS in Rate Design	22
VI.	Conclusion	22

# **ATTACHMENTS**

GHT-1	Curriculum Vitae					
Allocated Cost of Service Exhibits						
ACOS-1	Summary of Cost Allocation by Class					
ACOS-2	Summary of Cost Allocation by Functional Classification					
ACOS-3	Functional Revenue Requirement and Unit Costs by Class					
ACOS-4	Summary of External Allocators					
ACOS-5	Cost Classification and Allocation					
ACOS-6	Cost Classification and Allocation Results by Class					
ACOS-7	Allocation of System Revenue Requirements					
	Class Allocators used in ACOS Model					
ALLOC-1	Base and Excess Factor Calculations					
ALLOC-2	Customers and Bill Counts by Class					
ALLOC-3	Services Allocators (Cost Weighted)					
ALLOC-4	Base and Excess Factor Calculations by Class					
ALLOC-5	Revenue Details by Class					

I. INTRODUCTION	<b>UCTION</b>
-----------------	---------------

1

2	$\mathbf{O}$	Please state vour name,	address	and	nosition
2	v.	i lease state your maine.	auui ess.	anu	DO21HOH.

- 3 A. My name is Gregg H. Therrien. I am an Assistant Vice President with Concentric Energy
- 4 Advisors, Inc. ("Concentric"), 293 Boston Post Road West, Suite 500, Marlborough,
- 5 Massachusetts. My professional qualifications and experience are provided in
- 6 Attachment GHT-1 to this testimony.

# 7 Q. Have you testified previously before the New Hampshire Public Utilities

- 8 Commission ("NHPUC" or the "Commission")?
- 9 A. Yes, I have. I previously provided written and oral testimony in Docket No. DG 17-048,
- Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities'
- 11 ("EnergyNorth") distribution service rate case. I have also filed direct testimony in
- Docket No. DE 19-064, Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
- 13 Utilities distribution service rate case.
- Q. Have you previously provided consulting service and rate support for water
- 15 utilities?
- A. Yes. I have provided rate reviews, power purchasing strategies, and regulatory
- 17 consulting services for the Connecticut Water Company. Additionally, our firm is

currently engaged with San Jose Water and the Connecticut Water Company, supporting
their proposed merger in regulatory proceedings in Connecticut and Maine.

# **Q.** What is your responsibility in this proceeding?

- 4 A. In this proceeding, I am responsible for conducting an Allocated Cost of Service Study
  5 ("ACOS") for Pennichuck Water Works, Inc. ("Pennichuck", "PWW" or "the
  6 Company").
  - Q. Please describe Concentric.

A. Concentric is an economic advisory and management consulting firm, headquartered in Marlborough, Massachusetts, which provides consulting services related to energy industry transactions, energy market analysis, litigation, and regulatory support. Our regulatory economic and market analysis services include utility ratemaking, including allocated and marginal cost of service studies, rate design, revenue requirements, and other services in support of general rate cases. Our regulatory services also include energy market assessments, market entry and exit analysis, corporate and business unit strategy development, demand forecasting, resource planning, and energy contract negotiations. Our financial advisory activities include both buy and sell side merger, acquisition and divestiture assignments, due diligence and valuation assignments, project and corporate finance services, and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues on behalf of clients throughout North America.

# 21 Q. What is the purpose of your testimony in this proceeding?

22 A. The purpose of my testimony is to explain the ACOS study prepared on behalf of
23 Pennichuck. ACOS studies perform an important task in establishing just and reasonable

rates. Allocating the Company's proposed revenue requirements (or cost of service) to
the individual rate classes provides the Company with valuable cost-based insight to
assist in establishing rates for each of these classes of customers. ACOSs are used by
gas, electric, and water utility industries; the concepts used in ACOSs are common to all
utility industries.

- Q. Were Attachments ACOS-1 through ACOS-7 and Attachments ALLOC-1 through ALLOC-5 (collectively, the "ACOS Exhibits") prepared by you or under your direct supervision?
- 9 A. Yes.

12

13

14

15

16

17

18

19

20

21

22

23

A.

# 10 II. ACOS PRINCIPLES FOR WATER UTILITIES

11 Q. Please describe the principle factors that govern water ACOS studies.

An ACOS is a critical tool used to establish just and reasonable rates, which collect the pro forma revenue requirements as submitted by Pennichuck. Proper cost allocation is based on system design and customer usage with the goal of representing the true cost to serve each individual class for the use of the water distribution system. The purpose of the ACOS is to allocate the overall revenue requirements to the rate classes. The ACOS does so in a manner that reflects the relative costs of providing service to each class and avoids unjust or undue discrimination between rate classes. This is accomplished through analyzing variable and fixed costs associated with service provided to each customer class and assigning each customer or rate class its proportionate share of the utility's total cost of service, i.e., the utility's total revenue requirement. The results of ACOS studies can be utilized to determine the relative cost of service for each customer class and to help determine the individual class revenue responsibility. Rate design is the

product of ACOS consultation, customer rate gradualism considerations, efficiency, simplicity, continuity of rates, fairness between rate classes and corporate earnings stability.<sup>1</sup> The Company's proposed rate design is described in detail in the pre-filed

testimony of Mr. Donald Ware.

4

7

8

9

10

11

12

13

14

15

16

Q. Please provide an overview of the ACOS cost allocation methodology used in yourstudy.

A. Consistent with Pennichuck's past cost of service studies, the base-extra capacity method was primarily used to allocate the various components of the revenue requirement in my study.<sup>2</sup> This methodology allocates the cost of providing water service to the rate classes based on each classes' use of the commodity (the actual water), various facilities (e.g., pumps, mains, etc.), and services (the physical service lines, meters and appurtenances). The American Water Works Association ("AWWA") recognizes the base-extra capacity method as a "fair and equitable" means of distributing the total revenue requirements in proportion to each class's contribution to the cost of the system.<sup>3</sup> The functionalization and class allocation methodologies used in this study are discussed in detail in Section III below.

<sup>&</sup>lt;sup>1</sup> Principles of Public Utility Rates, Public Utility reports, Inc. by James C. Bonbright, Albert L. Danielsen and David R. Kamerschen. Second edition March 1988, pp. 383-384.

<sup>&</sup>lt;sup>2</sup> See, Docket No. DW 10-091, *Pennichuck Water Works, Inc.*, Testimony of John R. Palko, April 2010. See also, Docket No. DW 17-071, Testimony of Donald L. Ware, Attachment DLW-1, *Cost of Service Study*, April 2017 by Raftelis Financial Consultants, Inc.

<sup>&</sup>lt;sup>3</sup> AWWA Cost Manual, *Principles of Water Rates, Fees and Charges*, M1 Sixth Edition.

# III. ACOS STUDY METHODOLOGY

#### A. Introduction

1

2

10

classes.

- 3 Q. Please describe the Company's pro forma revenue requirements.
- A. PWW provided Concentric with several important documents. First, PWW provided us with their 2018 Annual Report filed with the Commission. This report served as a guide to the detailed accounts used to accumulate costs in the test year. Additionally, the Company's pro forma revenue requirements build off of these 2018 actual costs, adjusting for known and measurable changes. The ACOS relies on this pro forma revenue requirement, in its account-level detail, to allocate specific costs to the rate
- 11 Q. What are the major components of the Company's revenue requirements?
- A. Unlike most investor-owned utilities ("IOU's"), Pennichuck is wholly-owned by a single 12 investor, the City of Nashua, NH (the "City"). The City owns the single share of the 13 Company, under-pinned by the issuance of City bonds. Pennichuck's revenue 14 requirements are comprised of repayment of these City bonds (herein referred to as the 15 "City Bond Fixed Revenue Requirement", or "CBFRR"), as well as more traditional 16 costs such as Operations and Maintenance ("O&M") expenses, taxes, and interest. 17 Lastly, Special Contract Revenues are treated as a deduction to revenue requirements for 18 purposes of the ACOS. 19
- 20 Q. Does the Company have a rate base revenue requirement?
- 21 A. Yes, but it is not recovered through traditional revenue requirements as with traditional
  22 IOUs. Pennichuck's rate base is supported by the combination of the City bond proceeds

and Company-issued debt. Rate base depreciation and return are not part of the revenue requirement *per se*; rather, revenue requirements related to net plant are based on recovery of the CBFRR and debt service. This is described in detail in Mr. Ware's testimony.

# Q. Does the unique build-up of PWW's revenue requirement affect the ACOS methodology?

No, it doesn't. Concentric uses the Company's rate base accounts to derive cost allocation factors. The cost allocation factors are then applied to the CBFRR, the Debt Service Revenue Requirement ("DSRR 1.0"), and the 10% Debt Service Reserve Revenue Requirement ("0.1 DSRRR").

# B. Special Contract Customers

A.

A.

Q. Please explain how special contract customers are treated in the ACOS and why these proceeds are treated as a deduction to the revenue requirement.

Special contracts, by their nature, are the result of arms-length negotiations. The purpose of a special contract is to provide service to a large facility or water system that is: 1) not willing to pay a standard General Metered rate given its ability to utilize alternative supply at a cheaper price; and 2) provides incremental revenues in excess of the marginal cost to serve that special contract customer. These incremental revenues provide a benefit to the General Metered customers through an offset to the revenue requirements necessary to operate, maintain, and invest in, the utility water system. Further, special contract customers' rates include a fixed fee component, which is based on the negotiated contract price and cannot be changed until contract expiration. Because of this unique arrangement, it is logical to exclude special contracts as a stand-alone class in the ACOS.

Furthermore, assignment of the full revenue requirements to the core customer groups – General Metered, Public and Private Fire – results in costs being allocated to the customers that cause those costs to be incurred in the first place. Low investment, marginal-cost priced special contract revenue is best applied as an offset to the General Metered class rates in recognition of that the General Metered class pays for the overall system deliverability. This approach addresses not being able to establish a separate class for special contract customers. A separate class for special contracts is moot because the special contracts have set, fixed prices for the remaining term of the contract, and as such, cannot be changed. Another distinguishing factor is that special contract customers have traditionally paid for these specific investments through a Contribution In Aid of Construction ("CIAC") whereas other customer classes have not. Such investments include dedicated pipes that do not rely on the existing core system for service. Certainly, special contract customers do receive the benefit of being a customer of the utility, whereby they receive metering information, billing information, maintenance on pipes and appurtenances and the like; however, the revenues charged to these customers more than offset these costs. Therefore, crediting this revenue back to the General Metered class is both efficient and accurate for purposes of the ACOS.

# C. Cost Allocators

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

- Q. Please summarize the major cost allocators deployed in the ACOS.
- 20 A. There are two types of cost allocators: functional allocators and class allocators.
- Functional allocators are used to assign various costs to specific functional categories and the class allocators are then utilized to allocate these functionalized costs to the three rate
- classes. Functional allocators allocate costs to the following cost functions:

1		1) Base;
2		2) Extra;
3		3) Customer; and
4		4) Fire.
5		Class allocators allocate costs to the rate classes:
6		1) General Metered;
7		2) Municipal Fire, and
8		3) Private Fire.
9		1. Functional Allocators
10	Q.	How are costs allocated to the functions?
11	A.	The Company accumulates costs according to the Uniform System of Accounts for Water
12		Utilities. <sup>4</sup> Each of these individual accounts is assigned a functional allocator from the
13		following list:
14		1) Base Cost;
15		2) Base / Excess Capacity Maximum Day;
16		3) Base / Excess Capacity Maximum Hour;
17		4) Customer Service and Billing;
18		5) Meters;
19		6) Services, and
20		7) Fire Hydrants.
21	Q.	Please describe the methodology to calculate the Base and Extra Capacity
22		Functional Allocators.
23	A.	The Base and Extra Capacity allocators (including Extra Maximum Day and Extra
24		Maximum Hour) are calculated using the Company's actual metered annual usage,
25		converted to Millions of Gallons per Day ("MGD"). <sup>5</sup> Maximum Daily usage was
26		provided by the Company, which was derived from metered data for the General Metered
27		customer class and was estimated for the remaining classes. Excess Maximum Day is

 $<sup>^4</sup>$  Uniform System of Accounts for Water Utilities, Published by the N.H. Public Utilities Commission, June 2015.  $^5$  1 CCF = 748 gallons.

equal to the Maximum Day less the Average Day. The split between Base and Maximum 1 day Extra Capacity is calculated by comparing the ratio of average day usage to 2 Maximum Daily usage and the ratio of Excess Maximum day to Maximum Daily usage. 3 Excess Maximum Hour is similarly calculated, whereby the percentage of Maximum Day 4 is established based on Company data for the General Metered class and estimated for the 5 6 remaining water service customers. The split between Base and Maximum Hour Extra Capacity is calculated by comparing the ratio of average day usage to Maximum Hourly 7 usage and the ratio of Excess Maximum Hour to Maximum Hourly usage. Fire service 8 9 MGD, Maximum Day and Maximum Hour factors are based on factors provided by the Company. The result is a Base-Excess Max Day split of 47%/53%, and a Base-Excess 10 Max Hour split of 23%/77%. For plant costs allocated using a combination of Base, Daily 11 Excess Capacity, and Hourly Excess Capacity, a composite allocation of 23%/26%/51% 12 is used. Support for these calculations are included in Attachments ALLOC-1 and 13 14 ALLOC-4. ALLOC-1 provides details regarding the Base and Extra Capacity functional allocators while ALLOC-4 provides details regarding factors used to allocate cost 15 functionalized to base, extra day, and extra hour to the rate classes. 16 17 Q. Please explain the Customer Service and Billing functional allocation factor. A. This allocation factor is used to directly assign costs in certain accounts to the Customer 18 Service and billing function. Examples include account no. 902 (Meter Reading 19 20 Expense), account no. 903 (Customer Records and Collection Expense) and account no.

904 (Uncollectible Accounts Expense).

21

1	Q.	How are the Meter and Services functional allocators calculated?
2	A.	Similar to the Customer Service and Billing functional allocator, the Meters and Services
3		functional allocators are used to directly assign costs in certain accounts to these
4		functions. Examples of meter directly assigned costs include account no. 663 Meter
5		Expenses and account no. 676, Maintenance of Meters. Service-related directly assigned
6		costs include account no. 664, Customer Installations Expense and account no. 675,
7		Maintenance of Services.
8	Q.	How is the Fire Hydrants functional allocator derived?
9	A.	The Fire Hydrants functional allocator is a binary allocator that directly assigns costs to
10		the Fire Hydrant function, such as account no. 677 Maintenance of hydrants.
11		2. Customer Class Allocators
12	Q.	How are costs allocated to the individual rate classes?
13	A.	Class allocators allocate costs to the specific classes. The class allocators are:
14		1) Base Cost (MGD);
15		2) Extra Capacity – Maximum Day (MGD)
16		3) Extra Capacity – Maximum Hour (MGD)
17		4) Number of Customers;
18		5) Number of Bills;
19		6) Revenues;
20		7) Meters;
21		8) Weighted Cost of Services, and
22		9) Fire Hydrants.
23	Q.	Please explain the Number of Customers, Number of Bills and Revenues class
24		allocators.
25		These allocators are equal to the test year actual figures for these categories. Each of

level) to the individual rate classes. Examples include account no. 904, Uncollectible

Accounts (allocated based on number of customers), account no. 903, Customer Records

and Collection Expense (Number of bills), and account no. 461, Water Sales (Revenues).

These test year figures are detailed in **Attachment ALLOC-2** (usage, customers and bills) and **Attachment ALLOC-5** (revenues).

- Q. Please explain the Base Cost, Extra Capacity Max Day, and Extra Capacity Max
   Hour class allocators.
- A. The Base Cost, Extra Capacity Max Day, and Extra Capacity Max Hour class
  allocators are used to allocate costs functionalized as Base Cost, Maximum Day Extra
  Capacity, and Maximum Hour Extra Capacity, respectively. The calculations detailing
  the development of these allocators are provided in **Attachment ALLOC-4**.

# 12 Q. How is the weighted cost of services Class allocator calculated?

A.

13

14

15

16

17

18

19

20

21

22

23

The weighted cost of services allocator is used to allocate costs (including plant and O&M) functionalized as services to the rate classes. This allocator utilizes unit costs for each service size deployed by the Company. These unit costs are then divided by the unit cost for a ¾-inch service line to derive a cost weighting factor. The ¾-inch service is the most common and least expensive service and was the best choice to use as the base unit to factor against. Stated differently, the ¾-inch service lines have a weighting factor of 1.00 while other services have weighting factors that progressively increase from the 1-inch service line (1.02 weighting factor) up to the 16-inch service line (weighting factor of 4.57). These weighting factors are then multiplied times the number of services to create weighted service costs, which form the basis for the allocations to the rate classes. These calculations are detailed in **Attachment ALLOC-3**.

# 1 Q. How are meters assigned in the ACOS?

- 2 A. Meter costs are directly assigned to the General Metered class only, as the Municipal and
- 3 Private fire classes are not metered.
- 4 Q. How does the ACOS utilize the fire hydrant Class allocator?
- The fire hydrant allocator directly assigns all fire hydrant costs to the Municipal Fire rate class. All Private Fire customers own their own hydrants and are therefore excluded from this cost assignment.

#### 3. Internal Allocators

# 9 Q. What is the purpose of internal allocators?

8

10

11

12

13

14

15

16

17

18

19

A.

There are various indirect cost items related to overheads such as intangible plant and general plant, as well as administrative and general expenses that cannot be directly assigned to a particular function. These items were allocated to functions based on the relative amount of certain costs that have been directly-assigned to each function. The internally developed functional allocators ("internal allocators") used to assign overhead costs have been selected to reflect the type of direct costs that each overhead account generally supports. An example of such allocator is the "NET\_PLANT" allocator, which is derived based on the sum of all of the individual allocations to each gross plant and depreciation reserve account number. This allocator is used to allocate the CBFRR, DSRR 1.0, 0.1 DSRRR, Amortization expense and income taxes.

# D. Model Runs

1

# 2 Q. At a high level, how does the ACOS model work?

The ACOS is an iterative model that calculates both functional and class cost allocations 3 A. simultaneously. This is an iterative process because internal allocators are a function of 4 how line item costs are allocated using the external allocators. Each time a change is 5 6 made to a dollar value, an external or internal allocator value, or a different functional or class allocator is used, the model must be "run". The Microsoft Excel © file utilizes a 7 macro to effectuate the updates without creating a circular reference error. This logic 8 9 enables the cost analyst to change cost allocators often, producing alternative scenarios to review for accuracy and reasonableness. 10

# 11 Q. What functional and class allocators were chosen for each cost element?

A. Attachment ACOS-5 provides the allocators chosen for each element. The first allocation column represents the functional allocator, while the next eight columns show the class allocations by the functionalized category. This is another example of why the ACOS is designed as an iterative model.

#### IV. ACOS RESULTS

16

17

19

20

21

22

#### A. Summary Class Allocation Results

18 Q. What are the class allocated results for each rate class?

A. **Attachment ACOS-1** is the Class summary report from the ACOS. This report shows how rate base was allocated among the classes (lines 1-4); revenues at current rates (lines 5-10), and the proposed revenue requirement components (lines 11-21). The difference between the allocated revenue requirement and current rates results in a (deficiency) or

surplus for each customer class (line 22). This is an important calculation when

considering changes to revenue allocation among the rate classes. Those with

deficiencies above the system average may require a higher relative percentage increase

than those classes with below average deficiency or a surplus. This is summarized as

follows:

6

# **Table 1: Allocated Pro Forma Revenue Requirements**

Rate Class	Revenues at Present Rates	Pro Forma Revenue Requirements	(Deficiency) / Surplus	(Deficiency) / Surplus %
Reference	ACOS-1 Line 8	ACOS-1 Line 21	ACOS-1 Line 22	
General Metered Service	\$27,077,167	\$29,175,439	(\$2,098,272)	-7.75%
Municipal Fire Protection	\$3,444,078	\$4,259,415	(\$815,337)	-23.67%
Private Fire Protection	\$1,211,418	\$2,075,949	(\$864,530)	-71.37%
System Total	\$31,732,664	\$35,510,803	(\$3,778,139)	-11.91%

#### 2 Q. Please discuss these results.

Table 1 indicates an overall revenue increase of \$3.8 million (11.91%) is required. Of that increase, the ACOS indicates that the majority of the dollars should be recovered from the General Metered class. Although the total dollars are the highest for this class, the class percentage increase is the lowest at 7.75%. The highest percentage increase, based on the ACOS results, should come from the Private Fire Protection customers at 71.37%. The Municipal Fire Protection class also shows an above-average revenue deficiency at 23.67%. These results are driven by the individual allocators chosen within the study based on cost-causation, discussed below.

#### 11 Q. Did Concentric prepare a functional revenue requirement summary by rate class?

A. Yes, **Attachment ACOS-2** is a functional summary of the major components of the revenue requirement: CBFRR, O&M, Amortization, DSRR 1.0, 0.1 DSRRR and taxes (income and other). This functional cost exhibit displays each rate class' cost responsibility for base costs, extra capacity costs (by max day and max hour), customer service and billing, meters, service lines and fire hydrants.

- Attachment ACOS-3 is a more detailed summary of the functional revenue requirement.
- The following table, based on information contained on lines 36 through 43 of
  - Attachment ACOS-3, summarizes this information:

**Table 2: Class Allocations** 

3

4

5

6

7

8

9

10

11

12

Allocator	System Total	General Metered Service	Municipal Fire Protection	Private Fire Protection		
Base Cost	\$ 12,742,484	\$ 12,630,223	\$ 82,719	\$ 29,542		
Extra Capacity - Max Day	\$ 8,917,200	\$ 7,024,060	\$ 1,380,976	\$ 512,164		
Extra Capacity - Max Hour	\$ 8,888,413	\$ 5,431,541	\$ 2,137,525	\$ 1,319,348		
Customer Service & Billing	\$ 859,269	\$ 838,630	\$ 113	\$ 20,527		
Meters	\$ 1,468,962	\$ 1,468,962	\$ -	\$ -		
Service Lines	\$ 2,348,781	\$ 2,137,417	\$ -	\$ 211,365		
Fire Hydrants	\$ 706,405	\$ -	\$ 706,405	\$ -		
Total Revenue Requirement	\$ 35,931,515	\$ 29,530,832 \$ 4,307,737		\$ 2,092,946		
Base Cost	35%	43%	2%	1%		
Extra Capacity - Max Day	25%	24%	32%	24%		
Extra Capacity - Max Hour	25%	18%	50%	63%		
Customer Service & Billing	2%	3%	0%	1%		
Meters	4%	5%	0%	0%		
Service Lines	7%	7%	0%	10%		
Fire Hydrants	2%	0%	16%	0%		
Total Revenue Requirement	100%	100%	100%	100%		

Source: ACOS-3 Lines 5 - 12.

As Table 2 indicates, those classes with higher percentages of cost allocation to Extra

Capacity incur the most costs. For example, the Company's Plant, Structures and

Equipment accounts, the Water Treatment Plant accounts, and Transmission and

Distribution Mains account are all allocated based on max day. The Pumping equipment

accounts, Distribution Reservoir and Standpipes Account and the Transmission and

Distribution Mains account all have substantial plant allocated based on max hour. It is

logical that the Municipal and Private Fire Protection classes would incur a high

percentage of these costs given the nature of the service that these classes provide. That

logic is illustrated by the fact that Municipal Fire Protection is allocated 50% and Private 1 Fire Protection is allocated 63% of the Extra Capacity-Max Hour. 2 0. How can this functional information be utilized in rate design? 3 These functions help determine how costs should be collected, either through the fixed or 4 variable charge. Attachment ACOS-3 also includes a unit cost summary. Lines 46 5 6 through 51 show the functional costs on a unit basis. Base costs, which represent primarily the variable commodity cost of water service, is divided by annual CCF usage 7 for each class to derive a volumetric unit cost. The remaining functionalized costs are 8 9 divided by the number of annual bills for each class, deriving a monthly fixed unit cost. Lines 46 through 54 represent three different summations of these fixed costs for 10 purposes of assisting in the fixed monthly charge rate design. These three summations 11 12 are: 1) Direct Customer Costs – the sum of meters and service line unit costs; 13 14 2) <u>Direct plus Customer Service and Billing</u> – adds the results from summary 1) and customer service and billing costs, and 15 3) Total Customer and Extra Capacity Costs – Adds the extra capacity unit costs 16 to summary 2) to derive total monthly customer-related fixed costs. 17 These unit costs are summarized as follows: 18

19

#### 1 Table 3: Unit Costs

R		General	Municipal	Private
e f.	Revenue Requirement	Metered Service	Fire Protection	Fire Protection
••	Base Cost (\$ / CCF)	\$2.87	\$2.87	\$2.87
	Extra Capacity Cost (\$ / Bill)	\$37.13	\$58,641.69	\$167.54
	Customer Service & Billing (\$ / Bill)	\$2.50	\$1.88	\$1.88
	Meters (\$ / Bill)	\$4.38	\$0.00	\$0.00
	Service Lines (\$ / Bill)	\$6.37	\$0.00	\$19.33
	Fire Hydrants (\$ / Bill)	\$0.00	\$11,773.41	\$0.00
1	Direct Customer Costs	\$10.75	\$0.00	\$19.33
	Direct plus Customer Service & Billing Customer			
2	Costs	\$13.25	\$1.88	\$21.21
3	Total Customer Costs + Extra Capacity Costs	\$50.38	\$58,643.57	\$188.75

2

3

9

# B. Fixed Versus Variable Cost Summary

- 4 Q. Has an analysis of total system costs, split by fixed and variable costs, been
- 5 **performed?**
- 6 A. Yes. Using the functionalized cost information from **Attachment ACOS-5** certain
- 7 known variable costs were selected to derive the fixed/variable cost split:

# 8 Table 4: Fixed and Variable System Costs

	ACOS \$	Percent	Source:
Total Revenue Requirement	\$35,931,515		ACOS-1 Line 19
Variable Costs:			
Purchased water	\$472,407		Account no. 602
Energy Portion of Fuel or Power Purchased for			
Pumping	\$1,152,305		Account no. 623
Chemicals	\$908,981		Account no. 641
Sludge Disposal	\$378,140	_	Account no. 652
Total Variable Costs	\$2,911,833	8.1%	
Total Fixed Costs		91.9%	

- As Table 4 indicates, the vast majority (91.9%) of PWW's revenue requirement is fixed.
- An alternative calculation using the functionalized Base O&M expenses shown on
- 11 Attachment ACOS-2 (line 6 column C) shows a variable cost of \$6,320,669. Dividing
- this figure by the total system revenue requirement of \$35,931,515 yields a variable

percentage of 17.6% and a fixed percentage of 82.4%. This relationship between fixed and variable costs is considered in the Company's rate design proposal, as discussed in

3 Mr. Ware's testimony.

# 4 V. USE OF THE ACOS IN RATE DESIGN

- 5 Q. Have you prepared an exhibit to assist in the Company's proposed rate design?
- A. Yes, I have. **Exhibit ACOS-7** calculates proposed volumetric revenues for all classes and special contract customers as well as General Meter class meter revenues (by meter size) by applying the system average increase of 7.8% to current rates. This exhibit forms the foundation for the Company's proposed rate design as detailed in Mr. Ware's

# 11 VI. <u>CONCLUSION</u>

10

testimony.

- 12 Q. Please summarize your testimony.
- Concentric has performed an ACOS study on behalf of Pennichuck that comports with A. 13 industry standards, the AWWA guidance, and past cost of service studies filed with the 14 Commission. The Company's pro forma revenue requirements were functionalized then 15 allocated to the rate classes using the base-extra capacity methodology. The ACOS 16 17 supports an above-average rate increase to the Municipal and Private Fire Protection classes based on their above-average allocation of Base-Excess costs. Additionally, the 18 19 ACOS shows that the Company's fixed costs are between 82.4% to 91.9%, representing 20 the vast majority of system costs.
- 21 Q. Does this complete your testimony?
- 22 A. Yes, it does.



#### **GREGG H. THERRIEN**

Assistant Vice President

Gregg Therrien is a former utility Director who has held leadership positions at Connecticut Natural Gas Corporation and affiliated companies for more than 19 years. Most recently, he served as the Director, Gas Construction at Connecticut Natural Gas and The Southern Connecticut Gas Company and Director, Regulatory & Tariffs at UIL Holdings, Inc. Mr. Therrien's experience includes natural gas distribution system operations and construction practices, regulatory strategies, natural gas growth, infrastructure replacement programs, integrated resource planning and technical rate case issues such as utility cost of service, rate design, tariff writing and administration, as well as pricing, gas cost accounting, gross margin, and load forecasting for regulated utilities. Mr. Therrien has an M.B.A. from the University of Connecticut and a B.S. in Finance from Bryant University, and is also a certified Project Management Professional (PMP).

#### REPRESENTATIVE PROJECT EXPERIENCE

Representative responsibilities performed for Connecticut gas utilities include:

#### Regulatory Affairs

- Led the preparation, filing, discovery and implementation of several rate cases
- Designed rates and prepared testimony, and served as the primary rate design witness
- Prepared, testified, and implemented revenue requirement rate mechanisms for new customer growth and pipeline replacement programs
- Prepared gas Integrated Resource Plans
- Prepared assessment of forecast methodology and forecast accuracy of gas demands
- Prepared validation of sales forecast and analysis of declining use per customer
- Proposed, testified, and implemented Connecticut's first gas decoupling mechanism
- Key contributor in settlement negotiations for rate cases and other litigated regulatory matters, including the LDC gas expansion plan
- Prepared testimony and exhibits for bi-annual Purchased Gas Adjustment proceedings
- Prepared testimony and new program tariffs in support of gas unbundling

#### **Business Strategy and Operations**

- Led a newly-created gas construction organization, leveraging project management practices to plan and execute a \$100M annual capital budget
- Responsible for RFP development and bid selection of five-year contracts of local, regional and national gas construction and restoration contractors representing approximately 70 work crews
- Developed and implemented a tablet-based QA/QC inspection program
- Developed annual sales and revenue operating budgets
- Developed rate of return new customer acquisition model



- Led several process improvement teams
- Successfully negotiated contracts with large cogeneration users avoiding system bypass and obtaining regulatory approval

#### Consultancy

- Regulatory risk assessments
- Gas infrastructure replacement program technical and financial analysis and testimony
- Market analysis for international clients
- M&A due diligence (regulatory)
- Electric distribution alternative rate plan analysis
- Economic Development tariff development
- Decoupling testimony assistance for a Western Gas LDC
- Decoupling and Rate Design expert witness testimony for a New England Gas LDC
- Revenue Requirements witness for an electric distribution company
- Regulatory rate strategies for a vertically-integrated electric utility
- Testified on behalf of a New England gas LDC on the subjects of decoupling, capital trackers and rate design
- Developed an Alternative Rate Plan for a New England gas LDC
- Rate comparison study for the Government of Alberta, Canada
- Developed a cost of service-based pricing model for a 10MW fuel cell developer
- Power procurement consultancy for a New England investor-owned water utility

#### **PROFESSIONAL HISTORY**

#### Concentric Energy Advisors, Inc. (2016 - Present)

**Assistant Vice President** 

#### **AVANGRID** and affiliated companies (2016)

#### Connecticut Natural Gas and The Southern Connecticut Gas Company (2014 - 2016)

Director, Gas Construction

#### **UIL Holdings, Inc. (2010 - 2014)**

Director, Regulatory & Tariffs

# Iberdrola S.A. / Energy East Corporation / Connecticut Natural Gas and The Southern Connecticut Gas Company (2001 – 2010)

Director, Regulatory & Pricing / Director, Pricing & Analysis

#### **Connecticut Natural Gas Corporation (1997 - 2001)**

Manager, Pricing

# United Technologies, Inc. - Pratt & Whitney Turbo Power & Marine Systems (1996 - 1997)

Manager, Financial Planning & Analysis



#### **Pratt & Whitney Aircraft**

Business Unit Cell Leader, Overhaul & Repair / Manufacturing – turbine airfoils (1994 – 1996) Financial Analyst, Commercial Engine Business (1987 – 1994)

#### **EDUCATION**

#### **University of Connecticut**

M.B.A., Concentration in Finance, 1993

# **Bryant University (College)**

**B.S.**, Finance, 1987

#### **PROFESSIONAL AFFILIATIONS**

American Gas Association State Affairs Committee, 2001 – Present

Northeast Gas Association

**Project Management Institute** 

**Guild of Gas Managers** 

#### **CERTIFICATIONS**

Certified Project Management Professional (PMP)

#### **LEADERSHIP**

#### **Connecticut Economic Resource Center (CERC)**

Member, Board of Directors 2008 – 2011 Treasurer, 2011 – 2016

#### **Connecticut Power and Energy Society (CPES)**

Executive Secretary and Director, 2018 – Present Member, Board of Directors 2017 – 2018

AGA Executive Leadership Development Program - 2012



SPONSOR	DATE	DOCKET	SUBJECT
Connecticut Public Utilities Ro	egulatory	Authority	
Yankee Gas Services (Eversource Energy)	2018	Docket No. 18-05-10	Distribution Rate Case Rate design, decoupling, and capital trackers
Connecticut Natural Gas Corporation & Southern Connecticut Gas Company	2016	Docket No. 16-04-10	State of Connecticut LDC Gas Expansion Plan: System Expansion Reconciliation Capital Expenditures, System Improvement/Reinforcement Projects
Connecticut Natural Gas Corporation & Southern Connecticut Gas Company	2014	Docket No. 13-06- 02RE01	State of Connecticut LDC Gas Expansion Plan Settlement Agreement
Connecticut Natural Gas Corporation & Southern Connecticut Gas Company	2013	Docket No. 13-06-02	State of Connecticut LDC Gas Expansion Plan Rates, Hurdle Rate analysis, Demand forecast, Rate Mechanism
Connecticut Natural Gas Corporation	2013	Docket No. 13-06-08	Distribution Rate Case Revenue Requirements, Cost of Service, Rate Design, Demand Forecast, and Forecasted Revenues; Decoupling, DIMP and System Expansion Reconciliation Rate Mechanisms, Tariffs
The Southern Connecticut Gas Company	2013	Docket No. 99-10- 25RE01	Firm Transportation Service Agreement and Gas Exchange Agreement - Review of Revenue Requirement Allocation
Connecticut Natural Gas Corporation & Southern Connecticut Gas Company	2011	Docket No. 08-12- 06RE02, 08- 12-07RE02	Settlement Agreement RE: Resolve Stayed Decisions and Orders from Appealed CNG and SCG Rate Cases, and resolve SCG overearnings
The Southern Connecticut Gas Company	2011	Docket No. 10-12-17	Just and Reasonable Rates – Potential Overearnings Investigation
Illinois Commerce Commissio	n		
The Peoples Gas Light & Coke Company	2017	Docket No. 16-0376	Gas Distribution Aging Infrastructure Peer Utility Benchmark Study, Affordability
Maine Public Utilities Commis	ssion		
Emera, Maine	2017	Docket No. 2017-00198	Electric Distribution Revenue Requirements
New Hampshire Public Utilitie	es Commi	ission	
Liberty Utilities – New Hampshire d/b/a/ EnergyNorth Natural Gas	2017	DG 17-048	Revenue Decoupling Rate Design

Pennichuck Water Works, Inc. Docket:DW 19-084

#### ACOS-1 Summary of Cost Allocation by Class

Line No.	Description	•	system Total	Gene	eral Metered Service		Municipal Fire Protection Muni Fire		Private Fire Protection Private Fire
	(A)		(B)		(C)		(D)		(E)
	Rate Base Plant in Service	•	202 702 222	Φ.	470 202 055	•	20 044 772	•	14.476.610
2	Accumulated Reserve	\$	223,792,339	\$	179,303,955	Э	30,011,773	Э	, .,
3	Net CIAC		(57,983,171)		(46,544,866)		(7,804,655)		(3,633,649)
4	Total Net Plant	\$	(31,657,629) 134,151,539	\$	(25,364,309) 107,394,780	•	(4,245,461) 17,961,657	•	(2,047,859) 8,795,102
7	Total Not Figure	Ψ	134,131,339	Ψ	107,334,700	Ψ	17,301,037	Ψ	0,793,102
5	Revenues at Current Rates								
6	Water Revenue	\$	29.985.479	\$	25.329.982	\$	3.444.078	\$	1,211,418
7	Revenue from Contract Customers	\$	1,747,185	\$	1,747,185	\$	-	\$	
8	Current Water Revenue	\$	31,732,664	\$	27,077,167	\$	3,444,078	\$	1,211,418
9	Miscellaneous Revenues		420,712		355,393		48,322		16,997
10	Total Revenues	\$	32,153,376	\$	27,432,560	\$	3,492,401	\$	1,228,415
11	Proposed Revenue Requirement								
12	City Bond Fixed Revenue Requirement (CBFRR)	\$	7.729.032	\$	6.187.463	\$	1.034.846	\$	506.723
13	Operations & Maintenance Expenses	•	14.739.018	•	12,539,197	•	1.484.675	-	715,146
14	Amortization Expense		415,268		332,442		55,601		27,225
15	Taxes Other than Income		5,246,023		4,225,714		687.976		332,334
16	Debt Service Revenue Requirement (DSRR 1.0)		6,999,023		5,603,056		937.105		458,863
17	0.1 Debt Service Revenue Requirement (0.1 DSRR)		699,902		560,306		93,710		45,886
18	Income Taxes		103,249		82,656		13,824		6,769
19	Total Revenue Requirement	\$	35,931,515	\$	29,530,832	\$	4,307,737	\$	2,092,946
20	Miscellaneous Revenues		420.712		355,393		48,322		40.007
20 21	Total Base Revenue Requirement	\$	35,510,803	\$	29,175,439	Φ.	4,259,415	Φ.	16,997 2,075,949
21	Total base Revenue Requirement	<u>Ф</u>	35,510,603	<u> </u>	29,175,439	Ф	4,259,415	Ф	2,075,949
22	Total Revenue (Deficiency)/Surplus	\$	(3,778,139)	\$	(2,098,272)	\$	(815,337)	\$	(864,530)
23	Increase		11.91%		7.75%		23.67%		71.37%
24	Proposed Revenue from Contract Customers		1,837,699		1,837,699		-		_
25	Total Base Revenue Requirement (excl. Revenue from Contract Customers)	\$	33,673,104	\$	27,337,740	\$	4,259,415	\$	2,075,949

Pennichuck Water Works, Inc. Docket:DW 19-084

#### ACOS-2 Summary of Cost Allocation by Functional Classification

Witness: G. Therrien Page 1 of 1

#### Line

No.	Description	 System Total	Base Cost	Extra Capacity - Max Day	Extra Capacity - Max Hour	Customer Service & Billing	Meters	Service Lines	Fire Hydrants
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(1)
	Rate Base								
1	Plant in Service	\$ 223,792,339	\$ 67,043,500 \$	65,870,912	\$ 59,632,015	\$ - \$	7,471,127 \$	18,740,003	\$ 5,034,782
2	Accumulated Reserve	(57,983,171)	(17,130,962)	(17,000,806)	(14,272,559)	-	(2,406,108)	(5,544,473)	(1,628,264)
3	Net CIAC	(31,657,629)	(9,483,963)	(9,318,089)	(8,435,535)	-	(1,056,864)	(2,650,958)	(712,219)
4	Total Net Plant	\$ 134,151,539	\$ 40,428,575 \$	39,552,017	\$ 36,923,921	\$ - \$	4,008,155 \$	10,544,573	\$ 2,694,298
5 6 7	City Bond Fixed Revenue Requirement (CBFRR) Operations & Maintenance Expenses Amortization Expense	\$ 7,729,032 14,739,018 415,268	2,329,259 6,320,669 125,147	2,278,757 2,748,851 122,434	2,127,342 3,113,700 114,299	- 812,715 -	230,927 796,023 12,407	607,517 678,023 32,641	155,230 269,036 8,340
,	Taxes Other than Income	5,246,023	1,616,106	1,466,836	1,385,599	46,554	196,494	417,335	6,340 117,100
a	Debt Service Revenue Requirement (DSRR 1.0)	6,999,023	2,109,260	2,063,528	1,926,414		209,116	550,137	140,568
10	0.1 Debt Service Revenue Requirement (0.1 DSRR)	699,902	210,926	206,353	192,641	<del>-</del>	20,912	55,014	14,057
11	Income Taxes	103,249	31,116	30,441	28,418	-	3,085	8,116	2,074
12	Total Revenue Requirement	\$ 35,931,515	\$ 12,742,484 \$	8,917,200		\$ 859,269 \$	1,468,962 \$		\$ 706,405
13	Miscellaneous Revenues	\$ 420,712	 149,198	104,409	104,072	10,061	17,200	27,501	8,271
14	Total Base Revenue Requirement	\$ 35,510,803	\$ 12,593,286 \$	8,812,791	\$ 8,784,341	\$ 849,209 \$	1,451,763 \$	2,321,280	\$ 698,133

ACOS-3 Functional Revenue Requirement and Unit Costs by Class

Line				Ge	neral Metered Service	N	Municipal Fire Protection	Private Fire Protection
No.	Description	S	ystem Total		General		Muni Fire	Private Fire
	(A)		(B)		(C)		(D)	(E)
	Base Cost							
1	Base Cost	\$	12,742,484	\$	12,630,223	\$	82,719	\$ 29,542
2	Extra Capacity	\$	-	\$	-	\$	-	\$
3	Customer Costs	\$	-	\$	-	\$	-	\$
4	Fire Hydrants	\$	-	\$	-	\$	-	\$
5	Sub-total	\$	12,742,484	\$	12,630,223	\$	82,719	\$ 29,542
	Extra Capacity - Max Day	-						
6	Base Cost	\$	-	\$	-	\$	-	\$ -
7	Extra Capacity	\$	8,917,200	\$	7,024,060	\$	1,380,976	\$ 512,164
8	Customer Costs	\$	-	\$	-	\$	-	\$
9	Fire Hydrants	\$	-	\$	-	\$	-	\$
10	Sub-total	\$	8,917,200	\$	7,024,060	\$	1,380,976	\$ 512,164
	Extra Capacity - Max Hour							
11	Base Cost	\$	-	\$	-	\$	-	\$ -
12	Extra Capacity	\$	8,888,413	\$	5,431,541	\$	2,137,525	\$ 1,319,348
13	Customer Costs	\$	-	\$	-	\$	-	\$
14	Fire Hydrants	<u> </u>	-	\$	-	\$	-	\$
15	Sub-total	\$	8,888,413	\$	5,431,541	\$	2,137,525	\$ 1,319,348
	Customer Service & Billing							
16	Base Cost	\$	-	\$	-	\$	-	\$ -
17	Extra Capacity	\$ \$	-	\$	-	\$	-	\$
18	Customer Costs	\$	859,269	\$	838,630	\$	113	\$ 20,527
19	Fire Hydrants	\$	-	\$	-		-	\$
20	Sub-total Sub-total	\$	859,269	\$	838,630	\$	113	\$ 20,527
	Meters							
21	Base Cost	\$	-	\$	-	\$	-	\$ -
22	Extra Capacity	\$	-	\$	-	\$	-	\$
23	Customer Costs	\$	1,468,962	\$	1,468,962	\$	-	\$
24	Fire Hydrants	\$		\$		\$		\$ 
25	Sub-total	\$	1,468,962	\$	1,468,962	\$	-	\$ -

Witness: G. Therrien

ACOS-3
Functional Revenue Requirement and Unit Costs by Class

Witness: G. Therrien 2 of 3

_ine				Ge	neral Metered Service	Municipal Fire Protection	Private Fire Protection
No.	Description	S	stem Total		General	Muni Fire	Private Fire
	(A)		(B)		(C)	(D)	(E)
	Service Lines						
26	Base Cost	\$	-	\$	-	\$ - \$	
27	Extra Capacity	\$	-	\$	-	\$ - \$	
28	Customer Costs	\$	2,348,781	\$	2,137,417	\$ - \$	
29	Fire Hydrants	\$	-	\$	-	\$ - \$	
30	Sub-total	\$	2,348,781	\$	2,137,417	\$ - \$	5 211,30
24	Fire Hydrants	•		•		Φ	
31	Base Cost	\$	-	\$		\$ - \$	
32 33	Extra Capacity	\$ \$	-	\$	-	\$ - \$ \$ - \$	
34	Customer Costs Fire Hydrants	\$ \$	706,405	\$ \$	-		
35	Sub-total	\$	706,405	\$	-	\$ 706,405 \$ \$ 706,405 \$	
	TOTAL						
36	Base Cost	\$	12,742,484	\$	12,630,223	\$ 82,719 \$	29,5
37	Extra Capacity - Max Day	\$	8,917,200	\$	7,024,060	\$ 1,380,976	
38	Extra Capacity - Max Hour	\$	8,888,413	\$		\$ 2,137,525	
39	Customer Service & Billing	\$	859,269	\$	838,630	\$ 113 \$	
40	Meters	\$	1,468,962	\$	1,468,962	\$ - \$	
41	Service Lines	\$	2,348,781	\$		\$ - \$	
42	Fire Hydrants	\$	706,405	\$	-,	\$ 706,405	
43	Total Revenue Requirement	-\$	35,931,515	\$	29,530,832	\$ 4,307,737 \$	2,092,9
	UNITS						
44	Annual Usage		4,441,529		4,402,399	28.832	10,2
45	Number of Bills		346,440		335,448	60	10,9
	UNIT COST						
46	Base Cost (\$ / CCF)				2.87	2.87	2
47	Extra Capacity Cost (\$ / Bill)				37.13	58,641.69	167
48	Customer Service & Billing (\$ / Bill)				2.50	1.88	1
49	Meters (\$ / Bill)				4.38	0.00	C
50	Service Lines (\$ / Bill)				6.37	0.00	19
51	Fire Hydrants (\$ / Bill)				0.00	11,773.41	C
52	Direct Customer Costs				10.75	0.00	19
53	Direct plus Customer Service & Billing Customer Costs				13.25	1.88	21
54	Total Customer Costs + Extra Capacity Costs				50.38	58,643.57	188
	UNIT COST After Removal of Contract Revenue Revenue Requirement						
55	Base Cost	\$	11,803,339	\$	11,692,246	\$ 81.791 \$	29,3
56	Extra Capacity - Max Day	\$ \$	8,375,912	э \$	6,502,422	\$ 1,365,485	
57	Extra Capacity - Max Day  Extra Capacity - Max Hour	\$ \$	8,450,351	э \$	5,028,170	\$ 2,113,548	
58	Customer Service & Billing	\$	796,821	\$	776,349	\$ 2,113,346 \$	
59	Meters	\$	1,359,871	\$	1,359,871	\$ - \$	
60	Service Lines	\$	2,188,331	\$	1,978,683	\$ - \$	
61	Fire Hydrants	\$	698,480	\$	-	\$ 698,480 \$	
62	Total Revenue Requirement	\$	33,673,104	\$	27,337,740	\$ 4,259,415	2,075,9
	UNITS	_			<u></u>		
63	Annual Usage		4,441,529		4,402,399	28,832	10,2

Docket No. DW 19-084 Exhibit No. 13

Pennichuck Water Works, Inc. Docket:DW 19-084

ACOS-3
Functional Revenue Requirement and Unit Costs by Class

Functio	nal Revenue Requirement				
Line No.	Description	System Total	General Metered Service General	Municipal Fire Protection Muni Fire	Private Fire Protection Private Fire
	(A)	(B)	(C)	(D)	(E)
	UNIT COST				
65	Base Cost (\$ / CCF)		2.66	2.84	2.85
66	Extra Capacity Cost (\$ / Bill)		34.37	57,983.87	166.18
67	Customer Service & Billing (\$ / Bill)		2.31	1.86	1.86
68	Meters (\$ / Bill)		4.05	0.00	0.00
69	Service Lines (\$ / Bill)		5.90	0.00	19.18
70	Fire Hydrants (\$ / Bill)		0.00	11,641.34	0.00
71	Direct Customer Costs		9.95	0.00	19.18
72	Direct plus Customer Service & Billing Customer Costs		12.27	1.86	21.04
73	Total Customer Costs + Extra Capacity Costs		46.64	57,985.73	187.22

Witness: G. Therrien

3 of 3

Pennichuck Water Works, Inc. Docket:DW 19-084

#### ACOS-4 Summary of Allocators

Witness: G. Therrien Page 1 of 1

Name	Description		Total	General	Muni Fire	Private Fire
ALLOCATORS	1					
CUSTS	No. of Customers (Avg)	CUS		96.83%	0.02%	3.16%
	Proposed Case	1	28,870	27,954	5	911
SERV	Services (Cost Weighted)	CUS		91.00%	0.00%	9.00%
	Proposed Case		33,298	30,302	-	2,996
METERS	Meters	CUS		100.00%	0.00%	0.00%
	Proposed Case	1	32,687	32,687	-	-
CUST_METERS	Number of Metered Customers	CUS		100.00%	0.00%	0.00%
	Proposed Case		27,954	27,954	-	-
USAGE	Annual Usage (CCF)	CUS		99.12%	0.65%	0.23%
	Proposed Case		4,441,529	4,402,399	28,832	10,297
BASE_COST	Base Cost (Based on MGD)	BASE		99.12%	0.65%	0.23%
	Proposed Case		9	9.0	0.1	0.0
MAX_DAY	Extra Capacity - Max Day (Based on MGD)	EXTRA		78.77%	15.49%	5.74%
	Proposed Case		10	7.9	1.6	0.6
MAX_HOUR	Extra Capacity - Max Hour (Based on MGD)	EXTRA		61.11%	24.05%	14.84%
	Proposed Case		20	12.4	4.9	3.0
BILLS	No. of Bills	CUS		96.83%	0.02%	3.16%
	Proposed Case		346,440	335,448	60	10,932
FIRE	Fire Hydrants	FIRE_HYD		0.00%	100.00%	0.00%
	Proposed Case	1	-	1	-	
REVENUE	Revenue	REV		84.47%	11.49%	4.04%
	Proposed Case		29,985,479	25,329,982	3,444,078	1,211,418

Pennichuck Water Works, Inc.

Docket:DW 19-084

ACOS-5

Cost Classification and Allocation

Witness: G. Therrien Page 1 of 6

302	Intangible Plant Organizational Expense									
301 302										
301 302										
302										
302	Organizational Expense	00.050	00.050							 
	Franchise & Consents	28,856 229,132	28,856 229,132							 STTDPLT
	Sub-total	257,988	257,988							 STIDPLI
		207,000	207,000							
	Source of Supply and Pumping Plant									
	Land Rights - Base	1,033,582	1,033,582	F_BASEC	BASE	BASE_COST				
	Land Rights - Extra Cap (Max Day)	1,144,524	1,144,524	F_MXDAY	EXTRA	DAGE COOT	MAX_DAY			 -
	Structures and Improvements - Base Structures and Improvements - Extra Cap (Max Day)	20,921,962 23,167,668	20,921,962 23,167,668	F_BASEC F_MXDAY	BASE EXTRA	BASE_COST	MAX DAY			 1
	Collecting & Impounding Resevoirs	4,991,892	4,991,892	F BASEC	BASE	BASE COST	WOC_DAT			1
	Lake, River & Other Intake - Base	10.555	10.555	F BASEC	BASE	BASE COST				
306	Lake, River & Other Intake - Extra Cap (Max Day)	11,688	11,688	F_MXDAY	EXTRA		MAX_DAY			1
	Wells and Springs - Base	669,627	669,627	F_BASEC	BASE	BASE_COST				
	Wells and Springs - Extra Cap (Max Day)	741,503	741,503	F_MXDAY	EXTRA		MAX_DAY			
	Infiltration Galleries and Tunnels - Base	732	732	F_BASEC	BASE	BASE_COST				
	Infiltration Galleries and Tunnels - Extra Cap (Max Day)	811	811	F_MXDAY	EXTRA		MAX_DAY			 
	Supply Mains - Base Supply Mains - Extra Cap (Max Day)	1,777,408 1,968,190	1,777,408 1,968,190	F_BASEC F_MXDAY	BASE EXTRA	BASE_COST	MAX_DAY			 -
	Power Generation Equipment - Base	294,625	294,625	F BASEC	BASE	BASE COST	IVIAA_DAT			 -
	Power Generation Equipment - Extra Cap (Max Day)	326.249	326,249	F MXDAY	EXTRA	BAOL_COOT	MAX DAY			1
310	Power Generation Equipment - Extra Cap (Max Hour)	654,708	654,708	F_MXHRS	EXTRA		MAX HOUR			
	Pumping Equipment - Base	1,492,063	1,492,063	F_BASEC	BASE	BASE_COST	_			
	Pumping Equipment - Extra Cap (Max Day)	1,652,216	1,652,216	F_MXDAY	EXTRA		MAX_DAY			
311	Pumping Equipment - Extra Cap (Max Hour)	3,315,628	3,315,628	F_MXHRS	EXTRA		MAX_HOUR			
	Sub-total	64,175,631	64,175,631							
	Water Treatment Plant									
320	Water Treatment Plant Equipment - Base	8.559.529	8.559.529	F BASEC	BASE	BASE COST				 1
	Water Treatment Plant Equipment - Extra Cap (Max Day)	9,478,285	9,478,285	F MXDAY	EXTRA		MAX DAY			
	Sub-total	18,037,813	18,037,813	_		'	_			
	Transmission & DistributionPlant									
220	Distribution Reservoirs and Standpipes - Base	1,953,818	1,953,818	F BASEC	BASE	BASE COST	1			 1
	Distribution Reservoirs and Standpipes - Base  Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	6.505.266	6,505,266	F MXHRS	EXTRA	BASE_COST	MAX_HOUR			 +
	Transmission and Distribution Mains - Base	19.893.956	19.893.956	F BASEC	BASE	BASE COST	WAX_HOUR			 1
	Transmission and Distribution Mains - Extra Cap (Max Day)	22,029,318	22,029,318	F MXDAY	EXTRA	DAIDE_0001	MAX DAY			
	Transmission and Distribution Mains - Extra Cap (Max Hour)	44,207,897	44,207,897	F_MXHRS	EXTRA		MAX_HOUR			
	Services	17,180,643	17,180,643	F_SERVS	CUS			SERV		
	Meters and Meter Installations	6,849,453	6,849,453	F_METER	CUS			METERS		
	Hydrants	4,615,836	4,615,836	F_FIREH	FIRE_HYD				FIRE	
339	Other Plant and Miscellaneous Eq. Sub-total	419,801 <b>123,655,988</b>	419,801 123,655,988							TDPLT
	Sub-total	123,033,900	123,033,900							
	Other Plant									
~	CWIP	1,754,568	1,754,568							PLANT
	Sub-total	1,754,568	1,754,568							
	General Plant									
	Office Furniture and Equipment	528,237	528,237							STTDPLT
	Transportation Equipment	3,755,588	3,755,588							STTDPLT
	Tools, Shop and Garage Equipment	732,821	732,821				1			 STTDPLT
	Laboratory Equipment	226,761	226,761							 STTDPLT
	Power Operated Equipment	465,933	465,933				1			 STTDPLT
	Communication Equipment	1,047,226	1,047,226				1			 STTDPLT
	Computer Equipment Other Tangible Equipment	8,416,613 737,171	8,416,613 737,171							 STTDPLT STTDPLT
348	Sub-total	15,910,350	15,910,350		1		1	I		 STIDELI
		10,310,330	10,510,500							

Pennichuck Water Works, Inc.

Docket DW 19-084

Cost Classification and Allocation

Witness: G. Therrien Page 2 of 6

Acct. No.	Account Description		Proposed Case	Function	Classifier	BASE	EXTRA	CUS FIRE_HY	D REV	Internal
Accumulated Reserve	for Depreciation									
	Intangible Plant									
301	Organizational Expense	(21,979)	(21,979)							STTDPLT
	Pranchise & Consents	(188,253)	(188,253)							STTDPLT
	Sub-total	(210, 232)	(210,232)					ı		
	Source of Supply and Pumping Plant									
303	Land Rights - Base	-		F BASEC	BASE	BASE COST				
	Land Rights - Extra Cap (Max Day)			F MXDAY	EXTRA		MAX DAY			
	Structures and Improvements - Base	(7,644,525)	(7,644,525)	F BASEC	BASE	BASE COST	_			
	Structures and Improvements - Extra Cap (Max Day)	(8,465,067)	(8,465,067)	F MXDAY	EXTRA		MAX DAY			
	Collecting & Impounding Resevoirs	(1,109,126)	(1,109,126)	F BASEC	BASE	BASE COST	_			
	Lake, River & Other Intake - Base	(2,920)	(2,920)	F BASEC	BASE	BASE COST				
306	Lake, River & Other Intake - Extra Cap (Max Dav)	(3,233)	(3,233)	F MXDAY	EXTRA		MAX DAY			
307	Wells and Springs - Base	(234,055)	(234,055)	F BASEC	BASE	BASE COST				
	Wells and Springs - Extra Cap (Max Day)	(259,178)	(259,178)	F MXDAY	EXTRA		MAX DAY			
	Infiltration Galleries and Tunnels - Base	(274)	(274)	F BASEC	BASE	BASE COST				
308	Infiltration Galleries and Tunnels - Extra Cap (Max Day)	(304)	(304)	F MXDAY	EXTRA		MAX DAY			
	Supply Mains - Base	(72,290)	(72,290)	F BASEC	BASE	BASE COST	_			
309	Supply Mains - Extra Cap (Max Day)	(80,050)	(80,050)	F MXDAY	EXTRA		MAX DAY			
	Power Generation Equipment - Base	(114,432)	(114,432)	F BASEC	BASE	BASE COST	_			
310	Power Generation Equipment - Extra Cap (Max Day)	(126,715)	(126,715)	F MXDAY	EXTRA		MAX DAY			
	Power Generation Equipment - Extra Cap (Max Hour)	(254,289)	(254,289)	F MXHRS	EXTRA		MAX HOUR			
	Pumping Equipment - Base	(809,074)	(809,074)	F BASEC	BASE	BASE COST				
	Pumping Equipment - Extra Cap (Max Day)	(895,917)	(895,917)	F MXDAY	EXTRA		MAX DAY			1
	Pumping Equipment - Extra Cap (Max Hour)	(1,797,905)	(1,797,905)	F MXHRS	EXTRA		MAX HOUR			
	Sub-total	(21,869,355)	(21,869,355)		,		1	l		
	Water Treatment Plant									
320	Water Treatment Plant Equipment - Base	(3,341,864)	(3,341,864)	F BASEC	BASE	BASE COST				1
320	Water Treatment Plant Equipment - Extra Cap (Max Day)	(3,700,571)	(3,700,571)	F MXDAY	EXTRA		MAX DAY			
	Sub-total	(7,042,435)	(7,042,435)	_				<u> </u>		
	Transmission & DistributionPlant									
330	Distribution Reservoirs and Standpipes - Base	(845,319)	(845,319)	F_BASEC	BASE	BASE_COST				
330	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	(2,814,503)	(2,814,503)	F MXHRS	EXTRA		MAX HOUR			1
	Transmission and Distribution Mains - Base	(4,870,949)	(4,870,949)	F_BASEC	BASE	BASE_COST	_			
	Transmission and Distribution Mains - Extra Cap (Max Day)	(5,393,783)	(5,393,783)	F_MXDAY	EXTRA		MAX_DAY			
	Transmission and Distribution Mains - Extra Cap (Max Hour)	(10,824,113)	(10,824,113)	F MXHRS	EXTRA		MAX HOUR			
333	3 Services	(6,265,157)	(6,265,157)	F_SERVS	CUS		SERV	/		
334	Meters and Meter Installations	(2,744,466)	(2,744,466)	F_METER	CUS		METE	RS		
	Hydrants	(1,858,054)	(1,858,054)	F FIREH	FIRE HYD			FIRE		
339	Other Plant and Miscellaneous Eq.	(127,771)	(127,771)	_	_					TDPLT
	Sub-total Sub-total	(35,744,116)	(35,744,116)							

Pennichuck Water Works, Inc.

Docket DW 19-084

Cost Classification and

ACOS-5 Witness: G. Therrien
Cost Classification and Allocation Page 3 of 6

Acct. No.	Account Description		Proposed Case	Function	Classifier	BASE	EXTRA	cus	FIRE_HYD	REV	Internal
	General Plant										
340	Office Furniture and Equipment	(475,488)	(475,488)								STTDPLT
341	Transportation Equipment	(1,417,751)	(1,417,751)								STTDPLT
343	Tools, Shop and Garage Equipment	(322,028)	(322,028)								STTDPLT
	Laboratory Equipment	(97,128)	(97,128)								STTDPLT
	Power Operated Equipment	(250,484)	(250,484)								STTDPLT
	Communication Equipment	(496,428)	(496,428)								STTDPLT
	Computer Equipment	(4,845,441)	(4,845,441)								STTDPLT
	Other Tangible Equipment	(335,390)	(335,390)								STTDPLT
348.0	Other	(1,212)	(1,212)								STTDPLT
	Sub-total	(8,241,350)	(8,241,350)								
	~										
100	ACCUM DEPREC: COST OF REMOVAL	5,449,811	5,449,811								RESERVE
	ACCUMULATED DEPREC: GAIN/LOSS	6,142,905	6,142,905								RESERVE
	THEORETICAL DEPRE RESERVE-2007	3,531,600	3,531,600								RESERVE
100	Sub-total	15,124,317	15,124,317								KESEKVE
	Gub-total	10,124,011	10,124,011								
	TOTAL DEPRECIATION ACCRUAL	(57,983,171)	(57,983,171)								
	NET PLANT (including CIAC)	165,809,168	165,809,168								
	NET PLANT (Including CIAC)	165,809,168	165,809,168								
Plant Adjustments											
	Adjustments										
271-272	Net CIAC	(31,657,629)	(31,657,629)								PLANT
ZIT-ZIZ	Sub-total	(31,657,629)	(31,657,629)								TEAN
	our total	(57,007,023)	(0.,001,023)								
	TOTAL CIAC	(31,657,629)	(31,657,629)								
TOTAL NET PLANT		134,151,539	134,151,539								

Pennichuck Water Works, Inc. ACOS-5 Witness: G. Therrien Docket:DW 19-084 Cost Classification and Allocation Page 4 of 6

Acct. No.	Account Description		Proposed Case	Function	Classifier	BASE	EXTRA	cus	FIRE_HYD	REV	Internal
EXPENSES											
O & M Expenses											
	Production - Source of Supply										
601	Operation Labor and Expenses - Base	32.680	32.680	F BASEC	BASE	BASE COST					1
	Operation Labor and Expenses - Extra Cap (Max Day)	36,188	36,188	F MXDAY	EXTRA	DAGE_COOT	MAX DAY				1
	Purchased Water	472,407	472,407	F BASEC	BASE	BASE COST	W U C DITT				
	Miscellaneous Expenses - Base	7,083	7,083	F BASEC	BASE	BASE_COST					
603	Miscellaneous Expenses - Extra Cap (Max Day)	7,843	7,843	F_MXDAY	EXTRA		MAX_DAY				
	Maintenance Supervision and Engineering - Base	309,175	309,175	F_BASEC	BASE	BASE_COST	_				
610	Maintenance Supervision and Engineering - Extra Cap (Max Day)	342,361	342,361	F_MXDAY	EXTRA	_	MAX_DAY				
	Sub-total	1,207,738	1,207,738								
	Production - Pumping Expenses										
623	Fuel or Power Purchased for Pumping - Base	989.673	989.673	F BASEC	BASE	BASE COST	T I				1
	Fuel or Power Purchased for Pumping - Extra Cap (Max Day)	162,632	162.632	F MXDAY	EXTRA	2.102_0001	MAX DAY				
	Pumping Labor and Expenses - Base	66,716	66.716	F BASEC	BASE	BASE COST					
	Pumping Labor and Expenses - Extra Cap (Max Day)	73,877	73,877	F MXDAY	EXTRA		MAX DAY				
	Pumping Labor and Expenses - Extra Cap (Max Hour)	148,254	148,254	F MXHRS	EXTRA		MAX HOUR				
	Miscellaneous Expenses - Base	22,574	22,574	F_BASEC	BASE	BASE_COST	_				
626	Miscellaneous Expenses - Extra Cap (Max Day)	24,997	24,997	F_MXDAY	EXTRA		MAX_DAY				
626	Miscellaneous Expenses - Extra Cap (Max Hour)	50,163	50,163	F_MXHRS	EXTRA		MAX_HOUR				
	Maintenance of Structures and Improvements - Base	29,266	29,266	F_BASEC	BASE	BASE_COST					
	Maintenance of Structures and Improvements - Extra Cap (Max Day)	32,408	32,408	F_MXDAY	EXTRA		MAX_DAY				
	Maintenance of Structures and Improvements	65,035	65,035	F_MXHRS	EXTRA		MAX_HOUR				
	Maintenance of Pumping Equipment - Base	63,074	63,074	F_BASEC	BASE	BASE_COST					
	Maintenance of Pumping Equipment - Extra Cap (Max Day)	69,845	69,845	F_MXDAY	EXTRA		MAX_DAY				
633	Maintenance of Pumping Equipment - Extra Cap (Max Hour)	140,162	140,162	F_MXHRS	EXTRA		MAX_HOUR				
	Sub-total	1,938,676	1,938,676								
	Production - Water Treatment Operations and Maintenance Expense										
641	Chemicals	908,981	908,981	F_BASEC	BASE	BASE_COST					
	Operation Labor and Expenses - Base	192,031	192,031	F_BASEC	BASE	BASE_COST					
642	Operation Labor and Expenses - Extra Cap (Max Day)	212,643	212,643	F_MXDAY	EXTRA		MAX_DAY				
	Miscellaneous Expenses - Base	(80,686)	(80,686)	F_BASEC	BASE	BASE_COST					
	Miscellaneous Expenses - Extra Cap (Max Day)	(89,346)	(89,346)	F_MXDAY	EXTRA		MAX_DAY				
	Maintenance of Water Treatment Equipment - Base	77,080	77,080	F_BASEC	BASE	BASE_COST	1				
	Maintenance of Water Treatment Equipment - Extra Cap (Max Day)	85,354	85,354	F_MXDAY	EXTRA		MAX_DAY				
	Sludge Removal	378,140	378,140	F_BASEC	BASE	BASE_COST					-
	~ ~	-									-
	· · ·	-									ł
	~ ~	-									1
	~	1									1
	Sub-total	1,684,196	1,684,196								
	Production - Other	1									1 [0000011
	Employee Pension and Benefits	243,900	243,900								PRODOM
	PRO FORMA Adjustments to Test Year	191,839	191,839								PRODOM
601-652 & 926	PRO FORMA Adjustments based on FIVE YEAR AVE	31,539	31,539								PRODOM
	Sub-total	467,277	467,277								
	Total Production Expense	5,297,887	5,297,887								
	rotar i roduction Expense	3,231,001	3,231,001								

Internal

Witness: G. Therrien

Page 5 of 6

Pennichuck Water Works, Inc.

ACOS-5

Docket:DW 19-084

Cost Classification and Allocation

14,739,018

Acct. No.

**Account Description** 

TOTAL O & M EXPENSES

	Transmission & Distribution O&M Expenses								
	Operation Supervision and Engineering	453.240	453.240						TDOPER
	Transmission & Distribution Lines Expenses - Base	47,274	47,274	F BASEC	BASE	BASE COST			IBOI EK
	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)	52.348	52.348	F MXDAY	EXTRA	DribE_0001	MAX DAY		
	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)	105,050	105.050	F MXHRS	EXTRA		MAX HOUR		
	Meter Expenses	199,593	199.593	F METER	CUS		METERS		
	Customer Installations Expenses	18,080	18,080	F SERVS	CUS		SERV		
	Miscellaneous Expenses	(596)	(596)	I_SERVS	003		SERV		TDOPER
	Maintenance of Transmission and Distribution Mains - Base	170,815	170,815	F BASEC	BASE	BASE COST			IDOFER
	Maintenance of Transmission and Distribution Mains - Base  Maintenance of Transmission and Distribution Mains - Extra Cap (Max Day)	189,150	189,150	F MXDAY	EXTRA	DAGE_COST	MAX DAY		
	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Day)  Maintenance of Transmission and Distribution Mains - Extra Cap (Max Hour)	379,582	379.582	F_MXHRS	EXTRA		MAX_DAT		
	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Hour)  Maintenance of Services	294,871			CUS		MAX_HOUR SERV		
	Maintenance of Services  Maintenance of Meters		294,871	F_SERVS					
		14,214	14,214	F_METER	CUS		METERS		
	Maintenance of Hydrants	133,729	133,729	F_FIREH	FIRE_HYD			FIRE	
	Maintenance of Miscellaneous Equipment	173,717	173,717						TDMAINT
	Office Supplies and Other Expenses	112,628	112,628						OMXPAG
	Employee Pension and Benefits	378,515	378,515						LABOR
	Maintenance of General Plant	126,129	126,129						OMXPAG
60-678 & 921, 926,950	PRO FORMA Adjustments to Test Year	98,367	98,367						TDOM
	Sub-total	2,946,706	2,946,706						
	Engineering Expenses								
	Operation Supervision and Engineering	1,211,076	1,211,076						ENGOM
					BASE	BASE COST			
662	Transmission & Distribution Lines Expenses	17,709	17,709	F BASEC					
	Transmission & Distribution Lines Expenses Transmission & Distribution Lines Expenses - Extra Cap (Max Day)	17,709 19,610	17,709 19,610	F_BASEC F_MXDAY	EXTRA	D.102_0001	MAX DAY		
662	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)	19,610	19,610			B/102_0001			
662 662	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)	19,610 39,352	19,610 39,352	F_MXDAY	EXTRA	5/102_0001	MAX_DAY MAX_HOUR		FNGOM
662 662 660-662	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)	19,610	19,610	F_MXDAY	EXTRA	5/102_5555			ENGOM
662 662 660-662	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses	19,610 39,352 11,317 1,299,064 118,991 322,306	19,610 39,352 11,317 1,299,064	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS	3.32_555.	MAX_HOUR  CUST_MET BILLS	ERS	ENGOM
662 662 660-662 902 903 904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493	F_MXDAY F_MXHRS	EXTRA EXTRA	S SE COST	MAX_HOUR CUST_MET	ERS	
662 662 660-662 902 903 904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts Uncollectible Accounts PRO FORMA Adjustments to Test Year	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700	19,610 39,352 11,317 <b>1,299,064</b> 118,991 322,306 48,493 9,700	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS	S SC COS.	MAX_HOUR  CUST_MET BILLS	ERS	ENGOM
662 662 660-662 902 903 904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS	S IS CONTRACTOR OF THE STATE OF	MAX_HOUR  CUST_MET BILLS	ERS	
662 662 660-662 902 903 904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM
662 662 660-662 902 903 904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700	19,610 39,352 11,317 <b>1,299,064</b> 118,991 322,306 48,493 9,700	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM
902 903 904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM
902 902-904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses Administrative and General Salaries	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	19,610 39,362 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM  OMXPAG  OMXPAG
902 902-904 920 920 921 920 921	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year Sub-total  Administrative and General Expenses Administrative and General Expenses Administrative and General Salaries Office Supplies and Other Expenses	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM  OMXPAG  OMXPAG  OMXPAG
902 903 904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses Administrative and General Salaries Office Supplies and Other Expenses Administrative Expenses Transferred-Cr. Outside Services Employed	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM  OMXPAG  OMXPAG  OMXPAG
662 662-662 660-662 902 903 904 902-904 920 921 922 923 923	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts  PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses Administrative and General Salaries Office Supplies and Other Expenses Administrative Expenses Transferred-Cr. Outside Services Employed Property Insurance	19,610 39,352 11,317 1,299,064  118,991 322,306 48,493 9,700 499,489  2,949,490 518,725 (1,622,715) 385,360 487,967	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360 487,967	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM OMXPAG OMXPAG OMXPAG OMXPAG PLANT
902 903 904 902-904 92-904 92-904 92-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses  Uncollectible Accounts  PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses  Administrative and General Expenses  Administrative and General Salaries  Office Supplies and Other Expenses  Administrative Expenses Transferred-Cr.  Outside Services Employed  Property Insurance  Employee Pension and Benefits	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529	19,610 39,362 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 16,622,715) 385,360 487,967 3,967,529	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	OMXPAG OMXPAG OMXPAG OMXPAG PLANT LABOR
662 662-660-662 902 903 904 902-904 902-904 920 921 922 923 924 926 928	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts  PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses Administrative and General Salaries Office Supplies and Other Expenses Administrative Expenses Transferred-Cr. Outside Services Employed Property Insurance Employee Pension and Benefits Expulsers	19,610 39,352 11,317 1,299,064  118,991 322,306 48,493 9,700 499,489  2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678	19,610 93,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,499 2,949,490 518,725 (1,622,715) 385,360 487,967,529 105,678	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	OMXPAG OMXPAG OMXPAG OMXPAG OMXPAG PLANT LABOR
902 903 904 902-904 902-904 92-904 920 921 921 922 923 924 926 928	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses Administrative and General Salaries Office Supplies and Other Expenses Administrative Expenses Transferred-Cr. Outside Services Employed Property Insurance Employee Pension and Benefits Regulatory Commission Expenses Miscellaneous General Expenses Regulatory Commission Expenses Regulatory Commission Expenses	19,610 39,352 11,317 1,299,064  118,991 322,306 48,493 9,700 499,489  2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 154,019	19,610 39,362 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360 48,7967 3,967,529 105,678 154,019	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	OMXPAG OMXPAG OMXPAG OMXPAG OMXPAG OMXPAG PLANT LABOR OMXPAG
902 903 904 902-904 902-904 929 921 922 923 924 926 928 930 950	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses  Customer Records and Collection Expenses  Uncollectible Accounts  PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses  Administrative and General Salaries  Office Supplies and Other Expenses  Administrative Expenses Transferred-Cr.  Outside Services Employed  Property Insurance  Employee Pension and Benefits  Regulatory Commission Expenses  Miscellaneous General Expenses	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 154,019 634,318	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,499 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 154,019 634,318	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	OMXPAG OMXPAG OMXPAG OMXPAG OMXPAG PLANT LABOR OMXPAG OMXPAG
902 903 904 902-904 902-904	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses Customer Records and Collection Expenses Uncollectible Accounts PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses Administrative and General Expenses Office Supplies and Other Expenses Administrative Expenses Transferred-Cr. Outside Services Employed Property Insurance Employee Pension and Benefits Regulatory Commission Expenses Miscellaneous General Expenses Miscellaneous General Expenses Maintenance of General Plant A&G PRO FORMA Adjustments to Test Year	19,610 39,352 11,317 1,299,064  118,991 322,306 48,493 9,700 499,489  2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 154,019 634,318 551,328	19,610 39,362 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 105,678 105,678 105,678 105,678 105,678	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM  OMXPAG  OMXPAG  OMXPAG  PLANT  LABOR  OMXPAG  OMXPAG  OMXPAG  LABOR  LABOR
902 903 904 902-904 902-904 92-904 92-904 92-905 92-905 92-905 92-905 92-905 92-905 92-905	Transmission & Distribution Lines Expenses - Extra Cap (Max Day) Transmission & Distribution Lines Expenses - Extra Cap (Max Hour) PRO FORMA Adjustments to Test Year  Sub-total  Customer Account  Meter Reading Expenses  Customer Records and Collection Expenses  Uncollectible Accounts  PRO FORMA Adjustments to Test Year  Sub-total  Administrative and General Expenses  Administrative and General Salaries  Office Supplies and Other Expenses  Administrative Expenses Transferred-Cr.  Outside Services Employed  Property Insurance  Employee Pension and Benefits  Regulatory Commission Expenses  Miscellaneous General Expenses	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,489 2,949,490 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 154,019 634,318	19,610 39,352 11,317 1,299,064 118,991 322,306 48,493 9,700 499,499 518,725 (1,622,715) 385,360 487,967 3,967,529 105,678 154,019 634,318	F_MXDAY F_MXHRS  F_CUSTS F_CUSTS	EXTRA EXTRA  CUS CUS		MAX_HOUR  CUST_MET BILLS	ERS	CUSTOM  OMXPAG  OMXPAG  OMXPAG  OMXPAG  PLANT  LABOR  OMXPAG  OMXPAG  OMXPAG

14,739,018

Proposed Case

Function

Classifier

BASE

EXTRA

CUS

FIRE\_HYD

REV

Page 6 of 6

Pennichuck Water Works, Inc. ACOS-5 Docket:DW 19-084

Witness: G. Therrien Cost Classification and Allocation

Acct. No.	Account Description		Proposed Case	Function	Classifier	BASE	EXTRA	cus	FIRE_HYD	REV	Internal
Labor Expense											
•	s and Wages										
~ Product		1,774,985	1,774,985								PRODOM
	nission and Distribution and Customer Accounts	2,235,577	2,235,577								TDCUSOM
~ Enginee		1,178,567	1,178,567								ENGOM
Sub-tot		5,189,129	5,189,129			'	'				
TOTAL	O & M LABOR EXP.	5,189,129	5,189,129								
Amortiz	zation Expense										
	zation Expense	415,268	415,268								NET PLANT IN
Sub-tot		415,268	415,268								NET_TENT_IN
TOTAL	DEPRECIATION EXPENSES	415,268	415,268								
Taxes Other Than Income Tax	es										
408 Payroll		698,087	698,087								LABOR
408 Propert		4,547,936	4,547,936								PLANT
Sub-tot	tal	5,246,023	5,246,023								
TOTAL	TAXES OTHER THAN INCOME TAX	5,246,023	5,246,023								
City Bond Fixed Revenue Requirem											
	nd Fixed Revenue Requirement (CBFRR)	7,729,032	7,729,032								NET_PLANT_IN
TOTAL		7,729,032	7,729,032								
ncome Taxes											
Tax Exp		103,249	103,249								NET_PLANT_IN
		103,249	103,249								
Debt Service Revenue Require	ement ervice Revenue Requirement (DSRR 1.0)	6,999,023	6,999,023								NET PLANT IN
	ot Service Revenue Requirement (0.1 DSRR)	699,902	699,902								NET PLANT IN
TOTAL		7,698,925	7,698,925								, neighbori
Operating Revenues											
461 Water S	Sales	29,985,479	29,985,479	F_REVNU	REV					REVENUE	
466 Sales fo		3,321	3,321	F REVNU	REV					REVENUE	
471-474 Other C		417,391	417,391	F_REVNU						REVENUE	
Sub-tot		30,406,191	30,406,191								
TOTAL		30,406,191									

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 1 of 21

Acct.						General Meter	ed Service		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	CUS	FIRE_HYD	REV	TOTAL
	Intangible Plant								
301.0	Organizational Expense	28,856	STTDPLT	8,569	11,389	3,162	-	-	23,120
302.0	Franchise & Consents	229,132	STTDPLT	68,038	90,434	25,110	-	-	183,582
	Sub-total	257,988	3	76,607	101,823	28,272	-	-	206,702
	Source of Supply and Pumping Plant								
303.0	Land Rights - Base	1,033,582	BASE COST	1,024,476	-	-	-	-	1,024,476
303.0	Land Rights - Extra Cap (Max Day)	1,144,524	MAX DAY	-	901,539	-	-	-	901,539
304.0	Structures and Improvements - Base	20,921,962	BASE_COST	20,737,640	-	-	-	-	20,737,640
304.0	Structures and Improvements - Extra Cap (Max Day)	23,167,668	B MAX_DAY	-	18,249,124	-	-	-	18,249,124
305.0	Collecting & Impounding Resevoirs	4,991,892	BASE_COST	4,947,914	-	-	-	-	4,947,914
306.0	Lake, River & Other Intake - Base	10,555	BASE_COST	10,462	-	-	-	-	10,462
306.0	Lake, River & Other Intake - Extra Cap (Max Day)	11,688	3 MAX_DAY	-	9,207	-	-	-	9,207
307.0	Wells and Springs - Base	669,627	BASE_COST	663,727	-	-	-	-	663,727
307.0	Wells and Springs - Extra Cap (Max Day)		MAX_DAY	-	584,080	-	-	-	584,080
308.0	Infiltration Galleries and Tunnels - Base	732	BASE_COST	726	-	-	-	-	726
308.0	Infiltration Galleries and Tunnels - Extra Cap (Max Day)	811	I MAX_DAY	-	639	-	-	-	639
309.0	Supply Mains - Base	1,777,408	BASE_COST	1,761,749	-	-	-	-	1,761,749
309.0	Supply Mains - Extra Cap (Max Day)	1,968,190	) MAX_DAY	-	1,550,339	-	-	-	1,550,339
310.0	Power Generation Equipment - Base	294,625	BASE_COST	292,029	-	-	-	-	292,029
310.0	Power Generation Equipment - Extra Cap (Max Day)	326,249	MAX_DAY	-	256,986	-	-	-	256,986
310.0	Power Generation Equipment - Extra Cap (Max Hour)	654,708	MAX_HOUR	-	400,080	-	-	-	400,080
311.0	Pumping Equipment - Base	1,492,063	BASE_COST	1,478,918	-	-	-	-	1,478,918
311.0	Pumping Equipment - Extra Cap (Max Day)	1,652,216	MAX_DAY	-	1,301,447	-	-	-	1,301,447
311.0	Pumping Equipment - Extra Cap (Max Hour)	3,315,628	MAX_HOUR	-	2,026,117	-	-	-	2,026,117
	Sub-total	64,175,631	1	30,917,641	25,279,557	-	-	-	56,197,199
	Water Treatment Plant								
320.0	Water Treatment Plant Equipment - Base	8,559,529	BASE COST	8,484,119	-	-	-	-	8,484,119
320.0	Water Treatment Plant Equipment - Extra Cap (Max Day)		MAX DAY	-	7,466,025	-	-	-	7,466,025
	Sub-total	18,037,813		8,484,119	7,466,025	-	-	-	15,950,145

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 2 of 21

Acct.				General Metered Service					
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	Transmission & DistributionPlant								
330.0	Distribution Reservoirs and Standpipes - Base	1,953,818	BASE_COST	1,936,605	-	-	-	-	1,936,605
330.0	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	6,505,266	MAX_HOUR	-	3,975,244	-	-	-	3,975,244
331.0	Transmission and Distribution Mains - Base	19,893,956	BASE_COST	19,718,691	-	-	-	-	19,718,691
331.0	Transmission and Distribution Mains - Extra Cap (Max Day)	22,029,318	MAX_DAY	-	17,352,448	-	-	-	17,352,448
331.0	Transmission and Distribution Mains - Extra Cap (Max Hour)	44,207,897	MAX_HOUR	-	27,014,606	-	-	-	27,014,606
333.0	Services	17,180,643		-	-	15,634,574	-	-	15,634,574
334.0	Meters and Meter Installations	6,849,453	METERS	-	-	6,849,453	-	-	6,849,453
335.0	Hydrants	4,615,836	FIRE	-	-	-	-	-	-
339.0	Other Plant and Miscellaneous Eq.	419,801	TDPLT	73,768	164,677	76,591	-	-	315,037
	Sub-total	123,655,988	1	21,729,064	48,506,975	22,560,618	-	-	92,796,657
	Other Plant								
~	CWIP	1.754.568	PLANT	521.001	692,493	192,278	_	_	1,405,772
	Sub-total	1,754,568	•	521,001	692,493	192,278	-	-	1,405,772
	General Plant								
340.0	Office Furniture and Equipment	528.237	STTDPLT	156,855	208,485	57.888	_	_	423,227
341.0	· ·		STTDPLT	1,115,184	1,482,256	411,564	_	_	3,009,003
343.0	Tools, Shop and Garage Equipment		STTDPLT	217.604	289,230	80,308	_	_	587.141
344.0			STTDPLT	67,334	89,498	24,850	_	_	181,683
345.0	Power Operated Equipment	.,	STTDPLT	138,354	183,894	51,060	_	_	373,309
346.0	Communication Equipment		STTDPLT	310,963	413,319	114,762	_	_	839,045
347.0	Computer Equipment		STTDPLT	2,499,227	3,321,869	922,352	_	_	6,743,448
348.0			STTDPLT	218,895	290,947	80,784	_	_	590,626
-	Sub-total	15,910,350		4,724,416	6,279,498	1,743,568	-	-	12,747,481
	TOTAL PLANT-IN-SERVICE	223,792,339	1	66,452,849	88,326,371	24,524,736	-	-	179,303,955

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 3 of 21

Source of Supply and Pumping Plant   (188,253) STITPLT   (55,000) (74,300) (20,830)   (20,830)	Acct.						General Metere			
Intangible Plant  Organizational Expenses  (21,979) STITIPLT (6,526) (74,300) (20,630) (20,600) (30,60	No.	Account Description	Amount A	loc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
301.0   Organizational Expenses   (21,979) STTOPLT   (6,56) (6,675)   (2,409)   (23,039)   (3,202)   (23,039)   (3,202)   (23,039)   (3,202)   (23,039)   (3,202)   (3,202)   (3,203)   (3,203)   (3,202)   (3,203)	Accum	ulated Reserve for Depreciation								
Source of Supply and Pumping Plant   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment - Estar Cap (Max Day)   Source of Supply And Pumping Equipment -		Intangible Plant								
Source of Supply and Pumping Plant   Source of Supply and Pumping Plant   Source of Supply and Pumping Plant   Supply and Pumping Plant   Supply and Pumping Plant   Supply   Supply and Pumping Plant   Supply	301.0	Organizational Expense	(21,979) ST	TDPLT	(6,526)	(8,675)	(2,409)	-	-	(17,610)
Source of Supply and Pumping Plant	302.0	Franchise & Consents	(188,253) ST	TDPLT	(55,900)	(74,300)	(20,630)	-	-	(150,829)
BASE_COST		Sub-total	(210,232)		(62,426)	(82,974)	(23,039)	-	-	(168,439)
303.0   Land Rights - Extra Cap (Max Day)   - MAX_DAY   -   -   -   -     -		Source of Supply and Pumping Plant								
Structures and Improvements - Ease   (7,644,525) BASE_COST   (7,571,777)	303.0	Land Rights - Base			-	-	-	-	-	-
394.0   Structures and Improvements - Extra Cap (Max Day)   (8,465,067) MAX DAY	303.0				-	-	-	-	-	-
305.0   Collecting & Impounding Reservoirs   (1.109.1/26)   BASE_COST   (1.099.355)   -     -	304.0				(7,577,177)	-	-	-	-	(7,577,177)
306   Lake, River & Other Intake - Estase   (2.920) BASE_COST   (2.844)   -	304.0		(8,465,067) MA	X_DAY	-	(6,667,916)	-	-	-	(6,667,916)
Solit   Company   Compan	305.0	Collecting & Impounding Resevoirs			(1,099,355)	-	-	-	-	(1,099,355)
307.0   Wells and Springs - Base   (234,055) BASE_COST   (231,933)   -	306.0		(2,920) BAS	SE_COST	(2,894)	-	-	-	-	(2,894)
307.0   Wells and Springs - Extra Cap (Max Day)   (259,178) MAX_DAY   (204,154)   -     (204,154)	306.0				-	(2,547)	-	-	-	(2,547)
380.0   Infiltration Galleries and Tunnels - Base   (274) BASE_COST   (272)   -					(231,993)	-	-	-	-	(231,993)
308.0   Infiltration Galleries and Tunnels - Extra Cap (Max Day)   (304) MAX_DAY   - (239)   -   -					-	(204,154)	-	-	-	(204,154)
309.0   Supply Mains - Base   (72,200   BASE COST   (71,653)   -	308.0				(272)	-	-	-	-	(272)
300.0   Supph Mains - Extra Cap (Max Day)   (80,050) MAX_DAY   - (63,055)   -   -   (73,055)   -     -   (83,055)   -     -   (83,055)   -     -   (83,055)   -     -   (13,055)   -   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -     -   (13,055)   -					-	(239)	-	-	-	(239)
310.0   Power Generation Equipment - Base					(71,653)	-	-	-	-	(71,653)
310.0   Power Generation Equipment - Extra Cap (Max Day)   (126.715) MAX_DAY   (99.813)   - (155.391)   - (155.3					-	(63,055)	-	-	-	(63,055)
310.0   Power Generation Equipment - Extra Cap (Max Hour)   (254,289) MAX HOUR   - (155,391)   -   - (153,391)   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)   -   - (153,391)					(113,424)	-	-	-	-	(113,424)
311.0   Pumping Equipment - Base   (809,074)   BASE_COST   (801,946)   -   -   -   (80,9174)   BASE_COST   (801,946)   -   -   -   -   (80,9174)   BASE_COST   (801,946)   -   -   -   -   (80,9174)   BASE_COST   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   -   (1,098,666)   -   -   -   -   (1,098,666)   -   -   -   -   -   (1,098,666)   -   -   -   -   -   (1,098,666)   -   -   -   -   -   -   (1,098,666)   -   -   -   -   -   -   -   -   (1,098,666)   -   -   -   -   -   -   -   -   -					-		-	-	-	(99,813)
311.0   Pumping Equipment - Extra Cap (Max Day)					-	(155,391)	-	-	-	(155,391)
311.0 Pumping Equipment - Extra Cap (Max Hour) (1.797,905) MAX_HOUR (1.797,905) MAX_HOUR (8,998,714) (8,997,493) (1.098,666)					(801,946)		-	-	-	(801,946)
Sub-total         (21,869,355)         (9,898,714)         (8,997,493)         - <th< td=""><td></td><td></td><td></td><td></td><td>-</td><td></td><td>-</td><td>-</td><td>-</td><td>(705,712)</td></th<>					-		-	-	-	(705,712)
Water Treatment Plant           320.0         Water Treatment Plant Equipment - Base         (3,341,864) BASE_COST         (3,312,423)         -         -         -         (3,331,32,423)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (2,941,932)         -         -         -         (6,62         -         -         (6,62         -         -         -         (6,62         -         -         -         -         -         -         -         -         -         -         -         <	311.0			X_HOUR			-	-	-	(1,098,666)
320.0 Water Treatment Plant Equipment - Base (3,341,864) BASE_COST (3,312,423) (3,341,932) (2,914,932) (2,914,932) (2,914,932) (2,914,932) (2,914,932)		Sub-total	(21,869,355)		(9,898,714)	(8,997,493)	-	•	-	(18,896,207)
320.0 Water Treatment Plant Equipment - Extra Cap (Max Day) (3,700,571) MAX_DAY (2,914,932) (2,9		Water Treatment Plant								
Transmission & DistributionPlant   (845,319) BASE_COST   (837,872)   (2,914,932)   (	320.0	Water Treatment Plant Equipment - Base	(3,341,864) BAS	SE_COST	(3,312,423)	-	-	-	-	(3,312,423)
Transmission & DistributionPlant           330.0 Distribution Reservoirs and Standpipes - Base         (845,319) BASE_COST         (837,872)         -         -         -         -         (1,7           331.0 Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)         (2,814,503) MAX_HOUR         -         (1,719,889)         -         -         -         (1,7           331.0 Transmission and Distribution Mains - Base         (4,870,949) BASE_COST         (4,828,036)         -         -         -         -         (4,88           331.0 Transmission and Distribution Mains - Extra Cap (Max Day)         (5,37,83) MAX_DAY         -         (4,248,672)         -         -         -         (6,63           331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)         (10,824,113) MAX_HOUR         -         (6,614,410)         -         -         -         (6,63           333.0 Services         (6,265,157) SERV         -         -         (5,701,362)         -         -         (5,7           334.0 Meters and Meter Installations         (2,744,466) METERS         -         -         (2,744,466)         -         -         (2,744,466)         -         -         (2,744,466)         -         -         (2,744,466)         -         -         -         (2,744,466) </td <td>320.0</td> <td>Water Treatment Plant Equipment - Extra Cap (Max Day)</td> <td>(3,700,571) MA</td> <td>X_DAY</td> <td>-</td> <td>(2,914,932)</td> <td>-</td> <td>-</td> <td>-</td> <td>(2,914,932)</td>	320.0	Water Treatment Plant Equipment - Extra Cap (Max Day)	(3,700,571) MA	X_DAY	-	(2,914,932)	-	-	-	(2,914,932)
330.0 Distribution Reservoirs and Standpipes - Base (845,319) BASE_COST (837,872) (8 330.0 Distribution Reservoirs and Standpipes - Extra Cap (Max Hour) (2,814,503) MAX_HOUR - (1,719,889) (1,7 331.0 Transmission and Distribution Mains - Base (4,870,949) BASE_COST (4,828,036) (4,8 331.0 Transmission and Distribution Mains - Extra Cap (Max Day) (5,393,783) MAX_DAY - (4,248,672) (4,2 331.0 Transmission and Distribution Mains - Extra Cap (Max Hour) (10,824,113) MAX_HOUR (6,614,410) (6,6 333.0 Services (6,265,157) SERV (5,701,362) (5,701,362)		Sub-total	(7,042,435)		(3,312,423)	(2,914,932)	-	-	-	(6,227,354)
330.0 Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)  (2,814,503) MAX_HOUR  (4,828,036)  (4,828,036)  (4,248,672)  (4,248,672)  (4,248,672)  (5,391,381)  (5,391,383) MAX_DAY  (6,614,410)  (7,771,389)  (8,24,133) MAX_DAY  (9,24,133) MAX_DAY  (1,24,248,672)		Transmission & DistributionPlant								
331.0 Transmission and Distribution Mains - Base     (4,870,949) BASE_COST     (4,828,036)     -     -     (4,886,72)       331.0 Transmission and Distribution Mains - Extra Cap (Max Day)     (5,393,783) MAX_DAY     -     (4,248,672)     -     -     -     (6,63,410)       331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)     (10,824,113) MAX_HOUR     -     (6,644,410)     -     -     -     (6,63,4410)       332.0 Services     (6,265,157) SERV     -     -     (5,701,362)     -     -     (5,701,362)     -     -     (5,701,362)     -     -     (2,744,466)     -     -     (2,744,466)     -     -     (2,744,466)     -     -     (2,744,466)     -     -     -     (2,744,466)     - <t< td=""><td>330.0</td><td>Distribution Reservoirs and Standpipes - Base</td><td>(845,319) BAS</td><td>SE_COST</td><td>(837,872)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>(837,872)</td></t<>	330.0	Distribution Reservoirs and Standpipes - Base	(845,319) BAS	SE_COST	(837,872)	-	-	-	-	(837,872)
331.0 Transmission and Distribution Mains - Extra Cap (Max Day)     (5,393,783) MAX_DAY     - (4,248,672)     (4,248,672)     (4,248,672)     (4,248,672)     (5,701,362)     (5,	330.0	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	(2,814,503) MA	X_HOUR	-	(1,719,889)	-	-	-	(1,719,889)
331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)     (10,824,113) MAX_HOUR     - (6,614,410)     (5,701,362)	331.0	Transmission and Distribution Mains - Base	(4,870,949) BAS	SE_COST	(4,828,036)	-	-	-	-	(4,828,036)
333.0 Services     (6,265,157) SERV     -     -     (5,701,362)     -     -     (5,7       334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     (2,744,466)     -     -     (2,7       335.0 Viber Plant and Miscellaneous Eq.     (127,771) TDPLT     (22,452)     (50,121)     (23,311)     -     -     -     -	331.0		(5,393,783) MA	X_DAY	-	(4,248,672)	-	-	-	(4,248,672)
334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     (2,744,466)     -     -     (2,744,466)       335.0 Hydrants     (1,858,054) FIRE     -     -     -     -     -     -       339.0 Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (22,452)     (50,121)     (23,311)     -     -     -	331.0	Transmission and Distribution Mains - Extra Cap (Max Hour)	(10,824,113) MA	X_HOUR	-	(6,614,410)	-	-	-	(6,614,410)
335.0 Hydrants (1,858,054) FIRE	333.0		(6,265,157) SEI	RV	-	-	(5,701,362)	-	-	(5,701,362)
339.0 Other Plant and Miscellaneous Eq. (127,771) TDPLT (22,452) (50,121) (					-	-	(2,744,466)	-	-	(2,744,466)
	335.0				-	-	-	-	-	-
	339.0			PLT				-	-	(95,885)
Sub-total (35,744,116) (5,688,361) (12,633,092) (8,469,139) (26,7		Sub-total	(35,744,116)		(5,688,361)	(12,633,092)	(8,469,139)			(26,790,592)

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 4 of 21

Acct.				General Metered Service						
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	CUS	FIRE_HYD	REV	TOTAL	
	General Plant									
340.0	Office Furniture and Equipment	(475,48	8) STTDPLT	(141,191)	(187,666)	(52,107)	-	_	(380,964)	
341.0	Transportation Equipment	(1,417,75	1) STTDPLT	(420,987)	(559,558)	(155,367)	-	-	(1,135,912)	
343.0	Tools, Shop and Garage Equipment	(322,02	8) STTDPLT	(95,623)	(127,098)	(35,290)	-	-	(258,011)	
344.0	Laboratory Equipment	(97,12	8) STTDPLT	(28,841)	(38,334)	(10,644)	-	-	(77,820)	
345.0	Power Operated Equipment	(250,48	4) STTDPLT	(74,379)	(98,861)	(27,450)	-	-	(200,690)	
346.0	Communication Equipment	(496,42	8) STTDPLT	(147,409)	(195,930)	(54,402)	-	-	(397,741)	
347.0	Computer Equipment	(4,845,44	1) STTDPLT	(1,438,804)	(1,912,399)	(530,997)	-	-	(3,882,200)	
348.0	Other Tangible Equipment	(335,39	0) STTDPLT	(99,591)	(132,372)	(36,754)	-	-	(268,716)	
348.0	Other	(1,21	<ol><li>STTDPLT</li></ol>	(360)	(478)	(133)	-	-	(971)	
	Sub-total	(8,241,35	0)	(2,447,185)	(3,252,696)	(903,145)	-	•	(6,603,026)	
	~									
	ACCUM DEPREC: COST OF REMOVAL	5,449,81	1 RESERVE	1,595,946	2,078,408	700,376	-	-	4,374,730	
	ACCUMULATED DEPREC: GAIN/LOSS	6,142,90	5 RESERVE	1,798,915	2,342,735	789,448	-	-	4,931,098	
	THEORETICAL DEPRE RESERVE-2007	3,531,60	0 RESERVE	1,034,209	1,346,855	453,859	-	-	2,834,923	
	Sub-total	15,124,31	7	4,429,069	5,767,999	1,943,684	-	-	12,140,752	
	TOTAL DEPRECIATION ACCRUAL	(57,983,17	1)	(16,980,039)	(22,113,189)	(7,451,639)	-	-	(46,544,866)	
	NET PLANT (including CIAC)	165,809,16	8	49,472,810	66,213,182	17,073,097	-	-	132,759,089	
Plant A	djustments									
	Adjustments									
271-272	•	(31,657,62	Q) PI ANT	(9,400,410)	(12,494,634)	(3,469,265)	_	_	(25,364,309)	
211-212	Sub-total	(31,657,62		(9,400,410)	(12,494,634)	(3,469,265)		-	(25,364,309)	
						(2.422.22)				
	TOTAL CIAC	(31,657,62	9)	(9,400,410)	(12,494,634)	(3,469,265)	-	-	(25,364,309)	
TOTAL N	NET PLANT	134,151,53	9	40,072,401	53,718,548	13,603,832	-	-	107,394,780	

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 5 of 21

Acct.						General Mete	red Service		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	CUS	FIRE_HYD	REV	TOTAL
XPEN	959								
APEN	5E5								
8 M I	Expenses								
	Production - Source of Supply								
601.0	Operation Labor and Expenses - Base	32,680	BASE_COST	32,392	-	-	-	-	32,3
601.0	Operation Labor and Expenses - Extra Cap (Max Day)	36,188	MAX_DAY	-	28,505	-	-	-	28,5
602.0	Purchased Water	472,407	BASE_COST	468,246	-	-	-	-	468,2
603.0	Miscellaneous Expenses - Base	7,083	BASE_COST	7,021	-	-	-	-	7,0
603.0	Miscellaneous Expenses - Extra Cap (Max Day)	7,843	MAX_DAY	-	6,178	-	-	-	6,1
610.0	Maintenance Supervision and Engineering - Base	309,175	BASE COST	306,451	-	-	-	-	306,4
610.0	Maintenance Supervision and Engineering - Extra Cap (Max Day)	342,361	MAX DAY	-	269,677	-	-	-	269,6
	Sub-total Sub-total	1,207,738	_	814,110	304,360	-	-	-	1,118,4
	Production - Pumping Expenses								
623.0	Fuel or Power Purchased for Pumping - Base	989.673	BASE COST	980,954	-	-	-	-	980.9
623.0	. •		MAX DAY	-	128,105	-	_	_	128,1
624.0			BASE COST	66,128	-	-	-	-	66,1
324.0	Pumping Labor and Expenses - Extra Cap (Max Day)		MAX DAY	· -	58.193	-	-	-	58.
624.0		148.254	MAX HOUR	_	90,595	-	-	-	90,5
626.0			BASE COST	22,375	-	-	_	_	22,3
626.0			MAX DAY	,	19,690	_	_	_	19.6
626.0	Miscellaneous Expenses - Extra Cap (Max Hour)		MAX HOUR	_	30.654	_		_	30.6
631.0			BASE COST	29,009	-	_	_	_	29.0
631.0	Maintenance of Structures and Improvements - Extra Cap (Max Day)		MAX DAY	20,000	25,528	_	_	_	25,5
	Maintenance of Structures and Improvements		MAX HOUR	_	39,742	_	_	_	39.7
051.0	Sub-total	1,938,676		1,160,984	533,173				1,694,1
		1,530,070		1,100,304	555,175	-	-	-	1,034,1
641 O	Production - Water Treatment Operations and Maintenance Expense Chemicals	000 001	BASE COST	900,973					900,9
642.0	Operation Labor and Expenses - Base		BASE COST	190,339	-	-	-	-	190,
	Operation Labor and Expenses - Base Operation Labor and Expenses - Extra Cap (Max Day)		_	190,339	467.400	-	-	-	167,4
642.0			MAX_DAY		167,498	-	-	-	(79,9
643.0			) BASE_COST	(79,975)	(70.270)	-	-	-	(79,8
643.0			) MAX_DAY	70.404	(70,378)	-	-	-	76.4
652.0 652.0			BASE_COST MAX DAY	76,401	67.233	-	-	-	67.2
052.0	Sub-total	1,684,196		1,462,546	164,353			-	1,626,8
	Draduation Other								
	Production - Other	045		470.55	E0 E0 -				
	Employee Pension and Benefits		PRODOM	173,568	50,586	-	-	-	224,1
	PRO FORMA Adjustments to Test Year		PRODOM	136,519	39,788	-	-	-	176,3
& 926	PRO FORMA Adjustments based on FIVE YEAR AVE		PRODOM	22,444	6,541	-	-	-	28,9
	Sub-total Sub-total	467,277		332,532	96,915	-	-	-	429,4
	Total Production Expense	5.297.887		3,770,171	1.098.801	_			4,868,9

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 6 of 21

Acct.						General Meter	ed Service		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	Transmission & Distribution O&M Expenses								
660.0	•	453 240	TDOPER	50,285	113,141	231,850		_	395,276
662.0	Transmission & Distribution Lines Expenses - Base		BASE COST	46,857	-	201,000		_	46,857
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)		MAX DAY	-	41,234	_	-	_	41,234
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)		MAX HOUR	_	64,194	-	-	_	64,194
663.0	Meter Expenses		METERS	_		199,593	-	-	199,593
664.0	Customer Installations Expenses		SERV	_	-	16,453	-	-	16,453
665.0	Miscellaneous Expenses	(596	) TDOPER	(66)	(149)	(305)	-	-	(520)
673.0	Maintenance of Transmission and Distribution Mains - Base	170,815	BASE COST	169,310	` -	` -	-	-	169,310
673.0	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Day)	189,150	MAX DAY	-	148,993	-	-	-	148,993
673.0	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Hour)	379,582	MAX_HOUR	-	231,955	-	-	-	231,955
675.0	Maintenance of Services	294,871	SERV	-	-	268,336	-	-	268,336
676.0			METERS	-	-	14,214	-	-	14,214
677.0	Maintenance of Hydrants	133,729	FIRE	-	-	-	-	-	-
921	Office Supplies and Other Expenses		OMXPAG	33,522	37,649	21,193	-	-	92,364
926	Employee Pension and Benefits	378,515	LABOR	136,316	112,324	66,863	-	-	315,503
950.0	Maintenance of General Plant		OMXPAG	37,540	42,163	23,733	-	-	103,436
926,950	PRO FORMA Adjustments to Test Year	98,367	' TDOM	17,087	28,967	31,212	-	-	77,266
	Sub-total	2,946,706	;	511,860	867,742	934,997	-	-	2,314,599
	Engineering Expenses								
660.0	Operation Supervision and Engineering	1.211.076	ENGOM	277.261	623,838	0	-	_	901.099
662.0	Transmission & Distribution Lines Expenses	17.709	BASE COST	17,553	-	-	_	_	17,553
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)		) MAX DAY		15,447	_	_	_	15,447
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)		MAX HOUR	_	24,047	_	_	_	24,047
660-662			' ENGOM	2,591	5,830	0	_	_	8,421
000 002	Sub-total	1,299,064		297,405	669,161	o	-	-	966,566
	Customer Account					440.004			440.004
902.0	5 1		CUST_METERS	-	-	118,991	-	-	118,991
903.0	Customer Records and Collection Expenses		BILLS	-	-	312,080	-	-	312,080
904.0	Uncollectible Accounts		CUSTS	-	-	46,954	-	-	46,954
902-904	PRO FORMA Adjustments to Test Year	.,	CUSTOM	5,809	2,668	-	-	-	8,477
	Sub-total	499,489	)	5,809	2,668	478,025	-	•	486,501
000	Administrative and General Expenses	0.040 400	OMNERAC	077.07	005.050	554.000			0.440.000
920	Administrative and General Salaries		OMXPAG	877,871	985,959	554,993	-	-	2,418,822
921	Office Supplies and Other Expenses		OMXPAG	154,391	173,400	97,606	-	-	425,397
922	Administrative Expenses Transferred-Cr.		OMXPAG	(482,976)	(542,443)	(305,339)	-	-	(1,330,758)
923	Outside Services Employed		OMXPAG	114,696	128,818	72,511	-	-	316,026
924	Property Insurance		' PLANT	144,897	192,591	53,475	-	-	390,962
926	Employee Pension and Benefits	3,967,529		1,428,841	1,177,363	700,848	-	-	3,307,052
928	Regulatory Commission Expenses		3 OMXPAG	31,453	35,326	19,885	-	-	86,665
930	Miscellaneous General Expenses		OMXPAG	45,841	51,486	28,981	-	-	126,308
950.0	Maintenance of General Plant	634,318	3 OMXPAG	188,795	212,040	119,357	-	-	520,192
920-950	A&G PRO FORMA Adjustments to Test Year		B LABOR	198,552	163,606	97,390	-	-	459,548
930.0	Miscellaneous General Expenses		B) OMXPAG	(978,642)	(1,099,137)	(618,701)	-	-	(2,696,479)
930.0	PRO FORMA Adjustments to Test Year	(147,764	) OMXPAG	(43,980)	(49,395)	(27,804)	-	-	(121,178)
	Sub-total	4,695,872	?	1,679,739	1,429,615	793,203	-	-	3,902,557
	TOTAL O & M EXPENSES	14,739,018	1	6,264,985	4,067,988	2,206,224	-	-	12,539,197

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 7 of 21

Acct.						General Meter	ed Service		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	CUS	FIRE_HYD	REV	TOTAL
	_								
Labor	Expense								
	Salaries and Wages								
~	Production	1.774.985	PRODOM	1,263,145	368,139	_	_	_	1,631,283
~	Transmission and Distribution and Customer Accounts		TDCUSOM	335,817	564,642	916,639	-	-	1,817,099
~	Engineering	1,178,567	' ENGOM	269,819	607,092	0	-	-	876,911
	Sub-total Sub-total	5,189,129	)	1,868,780	1,539,873	916,639	-	-	4,325,293
	TOTAL O & M LABOR EXP.	5,189,129	)	1,868,780	1,539,873	916,639	-	-	4,325,293
	Amortization Expense								
407.0	Amortization Expense	415 268	NET PLANT IN	124,045	166,287	42,111	_		332,442
101.0	Sub-total	415,268		124,045	166,287	42,111	_		332,442
	TOTAL DEPRECIATION EXPENSES	415,268	3	124,045	166,287	42,111	-	-	332,442
Taxes	Other Than Income Taxes								
	Payroll Taxes	698.087	' LABOR	251,405	207,157	123,314	_	-	581,876
408.0		4,547,936		1,350,463	1,794,980	498,395	-	-	3,643,838
	Sub-total	5,246,023		1,601,868	2,002,137	621,709	-	-	4,225,714
	TOTAL TAXES OTHER THAN INCOME TAX	5,246,023		1,601,868	2,002,137	621,709			4,225,714
	TOTAL TAXES OTTER THAN INCOME TAX	3,240,023	•	1,001,000	2,002,137	021,703	-	-	4,223,714
City B	ond Fixed Revenue Requirement (CBFRR)								
~	City Bond Fixed Revenue Requirement (CBFRR)	7 729 032	NET PLANT IN	2,308,739	3,094,950	783,774	_		6,187,463
	TOTAL	7,729,032		2,308,739	3,094,950	783,774		-	6,187,463
					, ,	,			
Incom	e Taxes								
-	Tax Expense	103,249	NET_PLANT_IN	30,841	41,344	10,470	-	-	82,656
	TOTAL	103,249	)	30,841	41,344	10,470	-	-	82,656
Debt S	ervice Revenue Requirement								
~	Debt Service Revenue Requirement (DSRR 1.0)	6 999 023	NET PLANT IN	2,090,678	2,802,632	709,746	_	_	5,603,056
	TOTAL	7,698,925		2,299,746	3,082,895	780,721		_	6,163,361
		,,		, ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				,,
Operat	ing Revenues								
	Water Sales		REVENUE	-	-	-	-	25,329,982	25,329,982
466.0			REVENUE	-	-	-	-	2,805	2,805
471-474			REVENUE	-	-	-	-	352,588	352,588
	Sub-total	30,406,191	1	-	-	-	•	25,685,375	25,685,375
	TOTAL	30,406,191		-	-	-	-	25,685,375	25,685,375

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 8 of 21

Acct.						Municipal Fir	e Protection		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	Intangible Plant								
301.0	Organizational Expense	28,856	STTDPLT	56	3,164	-	649	-	3,870
302.0	Franchise & Consents	229,132	STTDPLT	446	25,127	-	5,155	-	30,728
	Sub-total	257,988		502	28,292	-	5,804	-	34,598
	Source of Supply and Pumping Plant								
303.0	Land Rights - Base	1,033,582	BASE COST	6,710	_	-	-	-	6,710
303.0	Land Rights - Extra Cap (Max Day)		MAX DAY	-	177,248	_	-	_	177,248
304.0	Structures and Improvements - Base		BASE COST	135,816	, <u>-</u>	-	-	-	135,816
304.0	Structures and Improvements - Extra Cap (Max Day)	23,167,668	MAX DAY		3,587,897	-	-	-	3,587,897
305.0	Collecting & Impounding Resevoirs	4,991,892	BASE COST	32,405	· · · · -	-	-	-	32,405
306.0	Lake, River & Other Intake - Base	10,555	BASE COST	69	-	-	-	-	69
306.0	Lake, River & Other Intake - Extra Cap (Max Day)	11,688	MAX DAY	-	1,810	-	-	-	1,810
307.0	Wells and Springs - Base	669,627	BASE_COST	4,347	-	-	-	-	4,347
307.0	Wells and Springs - Extra Cap (Max Day)	741,503	MAX_DAY	-	114,834	-	-	-	114,834
308.0	Infiltration Galleries and Tunnels - Base	732	BASE_COST	5	-	-	-	-	5
308.0	Infiltration Galleries and Tunnels - Extra Cap (Max Day)	811	MAX_DAY	-	126	-	-	-	126
309.0	Supply Mains - Base	1,777,408	BASE_COST	11,538	-	-	-	-	11,538
309.0	Supply Mains - Extra Cap (Max Day)	1,968,190	MAX_DAY	-	304,807	-	-	-	304,807
310.0	Power Generation Equipment - Base	294,625	BASE_COST	1,913	-	-	-	-	1,913
310.0	Power Generation Equipment - Extra Cap (Max Day)	326,249	MAX_DAY	-	50,525	-	-	-	50,525
310.0	Power Generation Equipment - Extra Cap (Max Hour)	654,708	MAX_HOUR	-	157,447	-	-	-	157,447
311.0	Pumping Equipment - Base	1,492,063	BASE_COST	9,686	-	-	-	-	9,686
311.0	Pumping Equipment - Extra Cap (Max Day)	1,652,216	MAX_DAY	-	255,873	-	-	-	255,873
311.0	Pumping Equipment - Extra Cap (Max Hour)	3,315,628	MAX_HOUR	-	797,357	-	-	-	797,357
	Sub-total	64,175,631		202,488	5,447,924	-	-	-	5,650,412
	Water Treatment Plant								
320.0	Water Treatment Plant Equipment - Base	8,559,529	BASE COST	55,565	_	-	-	-	55,565
320.0		9,478,285		-	1,467,869	-	-	-	1,467,869
	Sub-total	18,037,813	-	55,565	1,467,869	-	-	-	1,523,434

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 9 of 21

Acct.									
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	Transmission & DistributionPlant								
330.0	Distribution Reservoirs and Standpipes - Base	1,953,818	BASE_COST	12,683	-	-	-	-	12,683
330.0	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	6,505,266	MAX_HOUR	-	1,564,415	-	-	-	1,564,415
331.0	Transmission and Distribution Mains - Base	19,893,956	BASE_COST	129,143	-	-	-	-	129,143
331.0	Transmission and Distribution Mains - Extra Cap (Max Day)	22,029,318	MAX_DAY	-	3,411,605	-	-	-	3,411,605
331.0	Transmission and Distribution Mains - Extra Cap (Max Hour)	44,207,897	MAX_HOUR	-	10,631,312	-	-	-	10,631,312
333.0	Services	17,180,643	SERV	-	-	-	-	-	-
334.0	Meters and Meter Installations	6,849,453	METERS	-	-	-	-	-	-
335.0	Hydrants	4,615,836	FIRE	-	-	-	4,615,836	-	4,615,836
339.0	Other Plant and Miscellaneous Eq.	419,801	TDPLT	483	53,166	-	15,724	-	69,373
	Sub-total Sub-total	123,655,988		142,309	15,660,499	-	4,631,560	-	20,434,368
	Other Plant								
~	CWIP	1.754.568	PLANT	3,412	192.411	_	39,474	-	235.297
	Sub-total	1,754,568		3,412	192,411	-	39,474	-	235,297
	General Plant								
340.0	Office Furniture and Equipment	528 237	STTDPLT	1,027	57.928	_	11.884	_	70,839
341.0	Transportation Equipment	3,755,588		7.304	411.850	_	84.492	_	503.645
343.0	Tools, Shop and Garage Equipment		STTDPLT	1.425	80.363	_	16.487	_	98.275
344.0	Laboratory Equipment		STTDPLT	441	24.867	_	5.102	_	30,410
345.0	Power Operated Equipment		STTDPLT	906	51.096	_	10.482	_	62,484
346.0	Communication Equipment	1.047.226		2.037	114.842	_	23,560	_	140,439
347.0	Computer Equipment	8,416,613		16,368	922,992	_	189,353	_	1,128,714
348.0	Other Tangible Equipment		STTDPLT	1,434	80,840	_	16,585	_	98,859
-	Sub-total	15,910,350	0	30,941	1,744,779	_	357,944	-	2,133,665
		10,510,550		00,047	1,177,119	-	001,074	-	2,100,000
	TOTAL PLANT-IN-SERVICE	223,792,339		435,217	24,541,774	-	5,034,782	-	30,011,773

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 10 of 21

No.   Account Description   Alloc. Factor   BASE   EXTRA   CUS   FRE_HYD   REY   TOTAL	Acct.		_				ire Protection		
Intangible Plant	No.	Account Description	Amount Alloc. Factor	BASE	EXTRA	CUS	FIRE_HYD	REV	TOTAL
3010   Organizational Expenses   (13,978) STITOPLT   (45)   (24,474)   (42,355)   (25,2474)   (25,2575)   (26,25	Accum	ulated Reserve for Depreciation							
Sample & Consents   (188.255) STITOPLT   (366)		Intangible Plant							
Sub-total   Cart   Ca	301.0	Organizational Expense	(21,979) STTDPLT	(43)	(2,410)	-	(494)	-	(2,947)
Source of Supply and Pumping Plant	302.0	Franchise & Consents	(188,253) STTDPLT	(366)	(20,644)	-	(4,235)	-	(25,246)
ASSE_COST		Sub-total	(210,232)	(409)	(23,055)	-	(4,730)	-	(28,193)
MAX_DAY		Source of Supply and Pumping Plant							
SAIQUAD   Structures and Improvements - Extra Cap (Max Day)   (8.465.05)   (49.625)   (1,310.566)	303.0	Land Rights - Base	- BASE_COST	-	-	-	-	-	-
Structures and Improvements - Extra Cap (Max Day)	303.0	Land Rights - Extra Cap (Max Day)	- MAX_DAY	-	-	-	-	-	-
305   Collecting & Impounding Reservoirs   (1,109,126) BASE COST   (7200)	304.0	Structures and Improvements - Base	(7,644,525) BASE_COST	(49,625)	-	-	-	-	(49,625)
306.   Lake, River & Other Intake - Base   (2.20) BASE_COST   (19)	304.0	Structures and Improvements - Extra Cap (Max Day)	(8,465,067) MAX_DAY	-	(1,310,956)	-	-	-	(1,310,956)
Sab.   Lake, River & Other Intake - Extra Cag (Max Day)   (3.233) MAX, DAY   (501)   -   (501)   (50	305.0		(1,109,126) BASE_COST	(7,200)	-	-	-	-	(7,200)
307.0   Wells and Springs - Base   (234,055) BASE_COST   (1,519)   -	306.0			(19)	-	-	-	-	
307.0   Wells and Springs - Extra Cap (Max Day)   (259)178  MAX_DAY   (40)138)   (40)138    (40)1				-	(501)	-	-	-	, ,
1986   Infiltration Galleries and Tunnels - Base   (27) BASE COST   (2)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (47)   - (48)				(1,519)	-	-	-	-	
38.0   Infiltration Galleries and Tunnels - Extra Cap (Max Day)   (304) MAX_DAY   - (47)   - (47)   - (47)					(40,138)	-	-	-	
390.   Supply Mains - Base   (72,200 BASE_COST   (469)   -   -     (469)     -     (469)       (20,397)     (20,505)   MAX_DAY   -   (12,397)     -     -     (12,397)         (20,397)     (310.0   Power Generation Equipment - Base   (114,432) BASE_COST   (743)   -     (19,624)   -     -     (19,624)     -     (19,624)     -     (19,624)   (19,624)     (19,624)     (19,624)     (19,624)     (19,624)     (19,624)     (19,624)     (19,624)     (19,624)     (19,624)   (19,624)     (19,624)     (19,624)     (19,624)     (19,624)     (19,624)   (19,624)     (19,624)   (19,624)     (19,624)   (19,624)     (19,624)   (19,6				(2)		-	-	-	
390.0   Supph Mains - Extra Cap (Max Day)   (80,050) MAX_DAY   (12,397)   -   (12,397)   -   (12,397)					(47)	-	-	-	
310.   Power Generation Equipment - Base   (114.432) BASE_COST   (743)   -				(469)		-	-	-	
310.0   Power Generation Equipment - Extra Cap (Max Day)   (126.715) MAX_DAY   (19.624)   - (1				-	(12,397)	-	-	-	
310.0   Power Generation Equipment - Extra Cap (Max Hour)   (254,289) MAX HOUR   - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)     - (61,153)   (138,748)   (138,748)   (138,748)				(743)	-	-	-	-	
Satistic   Satistic				-		-	-	-	
311.0   Pumping Equipment - Extra Cap (Max Day)					(61,153)	-	-	-	
311.0 Pumping Equipment - Extra Cap (Max Hour) (1,797,905) MAX_HOUR - (432,368) (432,368) Sub-total (21,869,355) (21,869,355) (64,829) (2,075,937) (432,368) (432,368) Sub-total (21,869,355) (21,869,355) (21,869,355) (21,869) (2,075,937) (21,894) Sub-total (21,864) Sub-tot				(5,252)		-	-	-	
Sub-total   (21,869,355)   (64,829)   (2,015,931)     - (2,080,760)				-		-	-	-	
Water Treatment Plant           320.0         Water Treatment Plant Equipment - Base         (3,341,864) BASE_COST         (21,694)         -         -         -         (21,694)         -         -         -         (573,095)         -         -         -         (573,095)         -         -         -         (573,095)         -         -         -         (573,095)         -         -         -         (573,095)         -         -         -         (573,095)         -         -         -         (594,789)         -         -         -         (573,095)         -         -         -         (594,789)         -         -         -         (594,789)         -         -         -         (594,789)         -         -         -         (594,789)         -         -         -         -         (594,789)         -         -         -         -         (594,789)         - <td< td=""><td>311.0</td><td></td><td></td><td>-</td><td></td><td>-</td><td>-</td><td>-</td><td></td></td<>	311.0			-		-	-	-	
320.0   Water Treatment Plant Equipment - Base   (3,341,864) BASE_COST   (21,694)   -   -   -   -   (21,694)   (3700,571) MAX_DAY   -   (573,095)   -   -   -   (573,095)		Sup-total	(21,809,355)	(64,829)	(2,015,931)	-	•	-	(2,080,760)
320.0   Water Treatment Plant Equipment - Extra Cap (Max Day)   (3,700,571) MAX_DAY (21,694)   (573,095)   -   -   (573,095)		Water Treatment Plant							
Sub-total   (7,042,435)	320.0	Water Treatment Plant Equipment - Base	(3,341,864) BASE_COST	(21,694)	-	-	-	-	(21,694)
Transmission & Distribution Plant	320.0	Water Treatment Plant Equipment - Extra Cap (Max Day)	(3,700,571) MAX_DAY	-	(573,095)	-	-	-	(573,095)
330.0     Distribution Reservoirs and Standpipes - Base     (845,319) BASE_COST     (5,487)     -     -     -     -     (5,487)       330.0     Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)     (2,814,503) MAX_HOUR     -     (676,844)     -     -     -     -     (36,620)       331.0     Transmission and Distribution Mains - Base     (4,870,949) BASE_COST     (31,620)     -     -     -     -     (36,620)       331.0     Transmission and Distribution Mains - Extra Cap (Max Day)     (5,937,833) MAX_DAY     -     (835,317)     -     -     -     (835,317)       331.0     Transmission and Distribution Mains - Extra Cap (Max Hour)     (10,824,113) MAX_HOUR     -     (2,603,031)     -     -     -     -     (2,603,031)       333.0     Services     (6,265,157) SERV     -     -     -     -     -     -     (2,603,031)       334.0     Weters and Meter Installations     (2,744,466) METERS     -     -     -     -     -     -     -       335.0     Hydrants     -     -     -     -     -     -     -     -       335.0     Hydrants     -     -     -     -     -     -     -     -     -     -       3		Sub-total	(7,042,435)	(21,694)	(573,095)	-	-	-	(594,789)
330.0 Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)     (2,814,503) MAX_HOUR     - (676,844)       331.0 Transmission and Distribution Mains - Base     (4,870,949) BASE_COST     (31,620)       331.0 Transmission and Distribution Mains - Extra Cap (Max Day)     (5,393,783) MAX_DAY     - (835,317)       331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)     (10,824,113) MAX_HOUR     - (2,603,031)     (2,603,031)       333.0 Services     (6,265,157) SERV     (2,603,031)     (2,603,031)       334.0 Meters and Meter Installations     (2,744,466) METERS     (2,744,466) METERS     - (1,858,054)       335.0 Hydrants     (1,858,054) FIRE     - (1,858,054)     - (1,858,054)       309.0 Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (147)     (16,182)     - (4,766)     - (21,114)		Transmission & DistributionPlant							
331.0 Transmission and Distribution Mains - Base     (4,870,949) BASE_COST     (31,620)     -     -     -     (31,620)       331.0 Transmission and Distribution Mains - Extra Cap (Max Day)     (5,393,783) MAX_DAY     -     (835,317)     -     -     -     (835,317)       331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)     (1,824,113) MAX_HOUR     -     (2,603,031)     -     -     -     -     (2,603,031)       333.0 Services     (6,265,157) SERV     -     -     -     -     -     -     -       334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     -     -     -     -       335.0 Hydrants     Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (147)     (16,182)     -     (4,786)     -     (21,114)	330.0	Distribution Reservoirs and Standpipes - Base	(845,319) BASE_COST	(5,487)	-	-	-	-	(5,487)
331.0 Transmission and Distribution Mains - Extra Cap (Max Day)     (5,393,783) MAX_DAY     -     (835,317)     -     -     -     (835,317)       331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)     (10,824,113) MAX_HOUR     -     (2,603,031)     -     -     -     -     (2,603,031)       333.0 Services     (6,265,157) SERV     -     -     -     -     -     -     -       334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     -     -     -     -     -       335.0 Hydrants     (1,858,054) FIRE     -     -     -     (1,858,054)     -     (1,858,054)       339.0 Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (147)     (16,182)     -     (4,786)     -     (21,111)	330.0	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	(2,814,503) MAX_HOUR	-	(676,844)	-	-	-	(676,844)
331.0 Transmission and Distribution Mains - Extra Cap (Max Hour)     (10,824,113) MAX_HOUR     -     (2,603,031)     -     -     -     (2,603,031)       333.0 Services     (6,265,157) SERV     -     -     -     -     -     -       334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     -     -     -     -     -       335.0 Hydrants     (1,858,054) FIRE     -     -     -     (1,858,054)     -     (1,858,054)       339.0 Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (147)     (16,182)     -     (4,786)     -     (2,1114)	331.0	Transmission and Distribution Mains - Base	(4,870,949) BASE_COST	(31,620)	-	-	-	-	(31,620)
333.0 Services     (6,265,157) SERV     -     -     -     -       334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     -     -     -     -       335.0 Hydrants     (1,858,054) FIRE     -     -     -     (1,858,054)     -     (1,858,054)       339.0 Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (147)     (16,182)     -     (4,766)     -     (21,114)	331.0		(5,393,783) MAX_DAY	-	(835,317)	-	-	-	(835,317)
334.0 Meters and Meter Installations     (2,744,466) METERS     -     -     -     -     -     -       335.0 Hydrants     (1,858,054) FIRE     -     -     -     (1,858,054)     -     (1,858,054)       339.0 Other Plant and Miscellaneous Eq.     (127,771) TDPLT     (147)     (16,182)     -     (4,786)     -     (21,114)	331.0	Transmission and Distribution Mains - Extra Cap (Max Hour)	(10,824,113) MAX_HOUR	-	(2,603,031)	-	-	-	(2,603,031)
335.0 Hydrants (1,858,054) FIRE (1,858,054) - (1,858,054) 339.0 Other Plant and Miscellaneous Eq. (127,771) TDPLT (147) (16,182) - (4,786) - (21,114)				-	-	-	-	-	-
339.0 Other Plant and Miscellaneous Eq. (127,771) TDPLT (147) (16,182) - (4,786) - (21,114)				-	-	-	-	-	-
				-	-	-		-	
Sub-total (35,744,116) (37,255) (4,131,374) - (1,862,840) - (6,031,468)	339.0					-		-	
		Sub-total	(35,744,116)	(37,255)	(4,131,374)	-	(1,862,840)	-	(6,031,468)

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 11 of 21

Acct.					Municipal F	Iunicipal Fire Protection			
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	General Plant								
340.0	Office Furniture and Equipment	(475,488)	STTDPLT	(925)	(52,144)	-	(10,697)	-	(63,766)
341.0	Transportation Equipment	(1,417,751)	STTDPLT	(2,757)	(155,475)	-	(31,896)	-	(190,128)
343.0	Tools, Shop and Garage Equipment	(322,028)	STTDPLT	(626)	(35,315)	-	(7,245)	-	(43,186)
344.0	Laboratory Equipment	(97,128)	STTDPLT	(189)	(10,651)	-	(2,185)	-	(13,025)
345.0	Power Operated Equipment	(250,484)	STTDPLT	(487)	(27,469)	-	(5,635)	-	(33,591)
346.0	Communication Equipment	(496,428)	STTDPLT	(965)	(54,440)	-	(11,168)	-	(66,574)
347.0	Computer Equipment	(4,845,441)	STTDPLT	(9,423)	(531,366)	-	(109,011)	-	(649,800)
348.0	Other Tangible Equipment	(335,390)	STTDPLT	(652)	(36,780)	-	(7,545)	-	(44,978)
348.0	Other	(1,212)	STTDPLT	(2)	(133)	-	(27)	-	(163)
	Sub-total	(8,241,350)		(16,027)	(903,772)	-	(185,410)	-	(1,105,210)
	~								
	ACCUM DEPREC: COST OF REMOVAL	5,449,811	RESERVE	10,452	570,064	-	153,040	-	733,556
	ACCUMULATED DEPREC: GAIN/LOSS	6,142,905	RESERVE	11,782	642,563	-	172,503	-	826,848
	THEORETICAL DEPRE RESERVE-2007	3,531,600	RESERVE	6,773	369,414	-	99,173	-	475,361
	Sub-total	15,124,317		29,007	1,582,041	-	424,716	-	2,035,764
	TOTAL DEPRECIATION ACCRUAL	(57,983,171)		(111,207)	(6,065,185)	-	(1,628,264)	-	(7,804,655)
	NET PLANT (including CIAC)	165,809,168		324,010	18,476,590	-	3,406,518	-	22,207,117
Plant A	djustments								
	Adjustments								
271-272	Net CIAC	(31,657,629)	PI ANT	(61,566)	(3,471,676)	_	(712,219)	_	(4,245,461)
22.2	Sub-total	(31,657,629)		(61,566)	(3,471,676)	-	(712,219)	-	(4,245,461)
	TOTAL CIAC	(31,657,629)		(61,566)	(3,471,676)	-	(712,219)	-	(4,245,461)
TOTAL N	IET PLANT	134,151,539		262,445	15,004,914	-	2,694,298	-	17,961,657

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 12 of 21

Acct.						Municipal F	ire Protection		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
EXPEN	SES								
O & M E	Expenses								
	Production - Source of Supply								
601.0	Operation Labor and Expenses - Base	32 680	BASE COST	212	_	_	_	_	212
601.0	Operation Labor and Expenses - Extra Cap (Max Day)		MAX DAY		5.604	_	_	_	5.604
	Purchased Water		BASE COST	3,067	5,004	_	_	_	3,067
603.0			BASE COST	46	_	_	_	_	46
603.0	•		MAX DAY		1,215	_	_	_	1,215
610.0	Maintenance Supervision and Engineering - Base		BASE COST	2,007		_	_	_	2.007
610.0			MAX DAY	-	53.020	_	_	_	53,020
	Sub-total	1,207,738		5,332	59,839				65,171
		.,,.		-,	,				,
	Production - Pumping Expenses								
623.0	Fuel or Power Purchased for Pumping - Base	989,673	BASE_COST	6,425	-	-	-	-	6,425
623.0	Fuel or Power Purchased for Pumping - Extra Cap (Max Day)	162,632	MAX_DAY	-	25,186	-	-	-	25,186
624.0	Pumping Labor and Expenses - Base	66,716	BASE_COST	433	-	-	-	-	433
624.0	Pumping Labor and Expenses - Extra Cap (Max Day)	73,877	MAX_DAY	-	11,441	-	-	-	11,441
624.0		148,254	MAX_HOUR	-	35,653	-	-	-	35,653
626.0		22,574	BASE_COST	147	-	-	-	-	147
626.0			MAX_DAY	-	3,871	-	-	-	3,871
626.0			MAX_HOUR	-	12,063	-	-	-	12,063
631.0	Maintenance of Structures and Improvements - Base		BASE_COST	190	-	-	-	-	190
631.0	Maintenance of Structures and Improvements - Extra Cap (Max Day)		MAX_DAY	-	5,019	-	-	-	5,019
631.0	· ·		MAX_HOUR	-	15,640	-	-	-	15,640
	Sub-total	1,938,676		7,604	153,397	-	-	-	161,001
	Production - Water Treatment Operations and Maintenance Expense								
641.0	Chemicals	908.981	BASE COST	5,901	_	_	_	-	5,901
642.0	Operation Labor and Expenses - Base		BASE COST	1,247	-	_	_	-	1,247
642.0	·		MAX DAY	· -	32,931	_	_	-	32,931
	Miscellaneous Expenses - Base		) BASE COST	(524)		-	-	-	(524)
643.0	Miscellaneous Expenses - Extra Cap (Max Day)		MAX DAY		(13,837)	-	-	-	(13,837)
652.0	Maintenance of Water Treatment Equipment - Base	77,080	BASE COST	500	-	-	-	-	500
652.0	Maintenance of Water Treatment Equipment - Extra Cap (Max Day)	85,354	MAX_DAY	-	13,218	-	-	-	13,218
	Sub-total Sub-total	1,684,196	-	9,579	32,313	-	-	-	41,892
	Production - Other								
926.0	Employee Pension and Benefits	243.900	PRODOM	1,137	12,398	-	-	-	13,535
352 & 926	PRO FORMA Adjustments to Test Year		PRODOM	894	9,752	_	_	-	10,646
352 & 926	•		PRODOM	147	1,603	_	_	-	1,750
	Sub-total	467,277		2,178	23,753	-	-	-	25,930
	Total Production Expense	5,297,887	•	24,692	269,302	-	-	-	293,994

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 13 of 21

Acct.						Municipal Fir	e Protection		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	Transmission & Distribution O&M Expenses								
660.0	Operation Supervision and Engineering	453.240	TDOPER	329	35,811	-	_	_	36,140
662.0	Transmission & Distribution Lines Expenses - Base		BASE COST	307	-	_	_	_	307
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)		MAX DAY	-	8,107	_	_	_	8,107
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)		MAX HOUR	_	25,263	_	_	_	25,263
663.0	Meter Expenses		METERS	-	-	-	-	-	-
664.0	Customer Installations Expenses	18,080	SERV	-	-	-	-	-	-
665.0	Miscellaneous Expenses	(596)	TDOPER	(0)	(47)	-	-	-	(48)
673.0	Maintenance of Transmission and Distribution Mains - Base	170,815	BASE_COST	1,109	-	-	-	-	1,109
673.0	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Day)	189,150	MAX_DAY	-	29,293	-	-	-	29,293
673.0	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Hour)		MAX_HOUR	-	91,283	-	-	-	91,283
675.0	Maintenance of Services	294,871		-	-	-	-	-	-
676.0	Maintenance of Meters		METERS	-	-	-	-	-	-
	Maintenance of Hydrants	133,729				-	133,729	-	133,729
921	Office Supplies and Other Expenses		OMXPAG	220	10,902	1	2,540	-	13,663
926	Employee Pension and Benefits	378,515		893	33,421	3	8,015	-	42,332
950.0	Maintenance of General Plant		OMXPAG	246	12,209	1	2,845	-	15,301
, 926,950	PRO FORMA Adjustments to Test Year	98,367	IDOM	112	9,021	0	5,654	-	14,787
	Sub-total	2,946,706		3,352	270,225	6	169,384	-	442,967
	Engineering Expenses								
660.0	Operation Supervision and Engineering	1,211,076	ENGOM	1,816	197,455	-	-	-	199,271
662.0	Transmission & Distribution Lines Expenses	17,709	BASE COST	115		-	-	-	115
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)		MAX DAY	-	3,037	_	-	-	3,037
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)		MAX HOUR	-	9,464	-	-	-	9,464
660-662	PRO FORMA Adjustments to Test Year	11,317	ENGOM	17	1,845	-	-	-	1,862
	Sub-total .	1,299,064		1,948	211,801	-	-		213,749
	Customer Account								
902.0	Meter Reading Expenses	118,991	CUST METERS	-	_	_	_	_	-
903.0	Customer Records and Collection Expenses	322,306		-	_	56	_	_	56
904.0	Uncollectible Accounts		CUSTS	-	_	8	_	_	8
	PRO FORMA Adjustments to Test Year		CUSTOM	38	768	-	_	_	806
	Sub-total	499,489		38	768	64	-		870
	Administrative and General Expenses								
920	Administrative and General Salaries	2,949,490	OMXPAG	5.749	285,508	27	66,529	_	357,814
921	Office Supplies and Other Expenses		OMXPAG	1,011	50,212	5	11,700	_	62,929
922	Administrative Expenses Transferred-Cr.	(1,622,715)		(3,163)	(157,078)	(15)	(36,602)	_	(196,858)
923	Outside Services Employed		OMXPAG	751	37,303	4	8.692	_	46.750
924	Property Insurance	487,967		949	53,512		10,978	_	65,439
926	Employee Pension and Benefits	3,967,529		9,358	350,314	35	84,013	_	443,720
928	Regulatory Commission Expenses		OMXPAG	206	10,230	1	2,384	_	12,820
930	Miscellaneous General Expenses		OMXPAG	300	14,909	1	3,474	_	18,685
950.0	Maintenance of General Plant		OMXPAG	1,236	61,401	6	14,308		76,952
920-950	A&G PRO FORMA Adjustments to Test Year	551,328		1,300	48,680	5	11,674	-	61,659
	Miscellaneous General Expenses	(3,288,063)		(6,409)	(318,282)	(31)	(74,166)	_	(398,888)
	PRO FORMA Adjustments to Test Year		OMXPAG	(288)	(14,303)	(1)	(3,333)		(17,926)
000.0	Sub-total	4,695,872		11,001	422,406	37	99,652	-	533,096
	TOTAL O & M EXPENSES	14,739,018		41,031	1,174,502	107	269.036		1,484,675
	I O I AL O G III LAPENGES	14,735,010		41,031	1,174,502	107	203,030	•	1,404,073

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 14 of 21

Acct.				Municipal Fire Protection							
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL		
Labor	Expense										
	Salaries and Wages										
~	Production	1,774,985	PRODOM	8.273	90,226	_	_	_	98,499		
~	Transmission and Distribution and Customer Accounts		TDCUSOM	2,199	175,795	45	109,881	_	287,921		
~	Engineering	1,178,567	ENGOM	1,767	192,155	-	· -	-	193,922		
	Sub-total	5,189,129		12,239	458,176	45	109,881	-	580,342		
	TOTAL O & M LABOR EXP.	5,189,129		12,239	458,176	45	109,881	-	580,342		
	Amortization Expense										
407.0	Amortization Expense		NET_PLANT_IN	812	46,448	-	8,340	-	55,601		
	Sub-total	415,268		812	46,448	-	8,340	-	55,601		
	TOTAL DEPRECIATION EXPENSES	415,268		812	46,448	-	8,340	-	55,601		
Taxes	Other Than Income Taxes										
	Payroll Taxes	698,087	LABOR	1,647	61,638	6	14,782	-	78,073		
408.0	Property Taxes	4,547,936	PLANT	8,845	498,741	-	102,317	-	609,903		
	Sub-total	5,246,023		10,491	560,379	6	117,100	-	687,976		
	TOTAL TAXES OTHER THAN INCOME TAX	5,246,023		10,491	560,379	6	117,100	-	687,976		
City B	ond Fixed Revenue Requirement (CBFRR)										
~	City Bond Fixed Revenue Requirement (CBFRR)	7.729.032	NET PLANT IN	15,121	864,496	_	155,230	_	1,034,846		
	TOTAL	7,729,032		15,121	864,496	-	155,230	-	1,034,846		
lnaam	e Taxes										
incom	Tax Expense	103 249	NET PLANT IN	202	11,548	_	2,074	_	13,824		
	TOTAL	103,249	1421_1 2 441_14	202	11,548	-	2,074	-	13,824		
	ervice Revenue Requirement										
~	Debt Service Revenue Requirement (DSRR 1.0) TOTAL	6,999,023 <b>7,698,925</b>	NET_PLANT_IN	13,692 <b>15,062</b>	782,844 <b>861,128</b>		140,568 <b>154,625</b>	-	937,105 <b>1,030,815</b>		
	IOTAL	7,696,925		15,062	001,120	•	154,625	•	1,030,615		
Operati	ing Revenues										
461.0	Water Sales	29,985,479		-	-	-	-	3,444,078	3,444,078		
	Sales for Resale		REVENUE	-	-	-	-	381	381		
471-474	Other Operating Revenue Sub-total		REVENUE	-	-	-	-	47,941	47,941		
	Sub-total	30,406,191		-	-	-	-	3,492,401	3,492,401		
	TOTAL	30,406,191		-	-	-	-	3,492,401	3,492,401		

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 15 of 21

Acct.				Private Fire Protection						
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL	
	Intangible Plant									
301.0	Organizational Expense	28,856	STTDPLT	20	1,629	217	-	-	1,867	
302.0	Franchise & Consents	229,132	STTDPLT	159	12,936	1,727	-	-	14,822	
	Sub-total	257,988	1	179	14,565	1,944	-	-	16,689	
	Source of Supply and Pumping Plant									
303.0	Land Rights - Base	1,033,582	BASE COST	2,396	-	-	-	-	2,396	
303.0	Land Rights - Extra Cap (Max Day)	1,144,524	MAX DAY	-	65,736	-	-	-	65,736	
304.0	Structures and Improvements - Base	20,921,962	BASE_COST	48,506	-	-	-	-	48,506	
304.0	Structures and Improvements - Extra Cap (Max Day)	23,167,668	MAX_DAY	-	1,330,647	-	-	-	1,330,647	
305.0	Collecting & Impounding Resevoirs	4,991,892	BASE_COST	11,573	-	-	-	-	11,573	
306.0	Lake, River & Other Intake - Base	10,555	BASE_COST	24	-	-	-	-	24	
306.0	Lake, River & Other Intake - Extra Cap (Max Day)		MAX_DAY	-	671	-	-	-	671	
307.0			BASE_COST	1,552	-	-	-	-	1,552	
307.0			MAX_DAY	-	42,589	-	-	-	42,589	
308.0	Infiltration Galleries and Tunnels - Base		BASE_COST	2	-	-	-	-	2	
308.0		811	MAX_DAY	-	47	-	-	-	47	
309.0		1,777,408	BASE_COST	4,121	-	-	-	-	4,121	
309.0		1,968,190	MAX_DAY	-	113,044	-	-	-	113,044	
310.0	Power Generation Equipment - Base	294,625	BASE_COST	683	-	-	-	-	683	
310.0			MAX_DAY	-	18,738	-	-	-	18,738	
310.0			MAX_HOUR	-	97,181	-	-	-	97,181	
311.0			BASE_COST	3,459	-	-	-	-	3,459	
311.0			MAX_DAY	-	94,896	-	-	-	94,896	
311.0			MAX_HOUR	-	492,154	-	-	-	492,154	
	Sub-total	64,175,631		72,317	2,255,703	-	-	-	2,328,020	
	Water Treatment Plant									
320.0	Water Treatment Plant Equipment - Base	8,559,529	BASE_COST	19,845	-	-	-	-	19,845	
320.0	Water Treatment Plant Equipment - Extra Cap (Max Day)	9,478,285	MAX_DAY	-	544,390	-	-	-	544,390	
	Sub-total	18,037,813	!	19,845	544,390	-	-	-	564,235	

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 16 of 21

Acct.				Private Fire Protection							
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL		
	Transmission & DistributionPlant										
330.0	Distribution Reservoirs and Standpipes - Base	1,953,818	BASE COST	4,530	-	-	-	-	4,530		
330.0	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	6,505,266	MAX HOUR	-	965,606	-	-	-	965,606		
331.0	Transmission and Distribution Mains - Base	19,893,956	BASE_COST	46,122	-	-	-	-	46,122		
331.0	Transmission and Distribution Mains - Extra Cap (Max Day)	22,029,318	MAX DAY	-	1,265,266	-	-	-	1,265,266		
331.0	Transmission and Distribution Mains - Extra Cap (Max Hour)	44,207,897	MAX HOUR	-	6,561,979	-	-	-	6,561,979		
333.0	Services	17,180,643	SERV	-	-	1,546,069	-	-	1,546,069		
334.0	Meters and Meter Installations	6,849,453	METERS	-	-	-	-	-	-		
335.0	Hydrants	4,615,836	FIRE	-	-	-	-	-	-		
339.0	Other Plant and Miscellaneous Eq.	419,801	TDPLT	173	29,953	5,267	-	-	35,392		
	Sub-total .	123,655,988		50,825	8,822,803	1,551,336	-	-	10,424,964		
	Other Plant										
~	CWIP	1.754.568	PLANT	1.219	99.059	13.222	_	-	113,499		
	Sub-total	1,754,568		1,219	99,059	13,222	-	-	113,499		
	General Plant										
340.0	Office Furniture and Equipment	528.237	STTDPLT	367	29.823	3.981	_	-	34,170		
341.0	Transportation Equipment		STTDPLT	2,608	212,032	28,300	_	-	242,940		
343.0	Tools, Shop and Garage Equipment		STTDPLT	509	41,373	5,522	_	-	47,404		
344.0	Laboratory Equipment		STTDPLT	157	12.802	1,709	_	-	14.669		
345.0	Power Operated Equipment		STTDPLT	324	26.305	3,511	_	-	30.140		
346.0	Communication Equipment		STTDPLT	727	59,124	7.891	_	-	67.743		
347.0	Computer Equipment		STTDPLT	5,846	475,182	63,424	_	_	544,451		
348.0	Other Tangible Equipment		STTDPLT	512	41.619	5,555	_	-	47.686		
-	Sub-total	15,910,350		11,051	898,260	119,893			1,029,204		
		10,010,000		11,001	300,200	7.70,000			.,020,201		
	TOTAL PLANT-IN-SERVICE	223,792,339		155,435	12,634,781	1,686,394	-	-	14,476,610		

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 17 of 21

Acct.				Private Fire Protection					
No.	Account Description	Amount Allo	c. Factor BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL	
Accum	ulated Reserve for Depreciation								
Accum	•								
	Intangible Plant								
	Organizational Expense	(21,979) STTE		(1,241)	(166)	-	-	(1,422)	
302.0	Franchise & Consents	(188,253) STTE		(10,628)	(1,419)	-	-	(12,178)	
	Sub-total	(210,232)	(146)	(11,869)	(1,584)	-	-	(13,599)	
	Source of Supply and Pumping Plant								
303.0	Land Rights - Base	- BASE	_COST -	-	-	-	-	-	
303.0	Land Rights - Extra Cap (Max Day)	- MAX	_DAY -	-	-	-	-	-	
304.0	Structures and Improvements - Base	(7,644,525) BASE	_COST (17,723)	-	-	-	-	(17,723)	
304.0	Structures and Improvements - Extra Cap (Max Day)	(8,465,067) MAX	_DAY -	(486,196)	-	-	-	(486,196)	
305.0		(1,109,126) BASE		-	-	-	-	(2,571)	
306.0		(2,920) BASE		-	-	-	-	(7)	
306.0		(3,233) MAX		(186)	-	-	-	(186)	
307.0		(234,055) BASE		-	-	-	-	(543)	
307.0		(259,178) MAX		(14,886)	-	-	-	(14,886)	
308.0	Infiltration Galleries and Tunnels - Base	(274) BASE		-	-	-	-	(1)	
308.0	- 1 ( )//	(304) MAX		(17)	-	-	-	(17)	
309.0		(72,290) BASE		-	-	-	-	(168)	
309.0		(80,050) MAX		(4,598)	-	-	-	(4,598)	
310.0		(114,432) BASE			-	-	-	(265)	
310.0	- 11 -11 -27	(126,715) MAX		(7,278)	-	-	-	(7,278)	
310.0		(254,289) MAX		(37,745)	-	-	-	(37,745)	
311.0		(809,074) BASE			-	-	-	(1,876)	
311.0		(895,917) MAX		(51,457)	-	-	-	(51,457)	
311.0		(1,797,905) MAX		(266,871)	-	-	-	(266,871)	
	Sub-total	(21,869,355)	(23,153)	(869,234)	•	•	•	(892,388)	
	Water Treatment Plant								
320.0	Water Treatment Plant Equipment - Base	(3,341,864) BASE	COST (7,748)	-	-	-	-	(7,748)	
320.0	Water Treatment Plant Equipment - Extra Cap (Max Day)	(3,700,571) MAX	DAY -	(212,544)	-	-	-	(212,544)	
	Sub-total	(7,042,435)	(7,748)	(212,544)	-	-	-	(220,292)	
	Transmission & DistributionPlant								
330.0	Distribution Reservoirs and Standpipes - Base	(845,319) BASI	COST (1,960)	-	_	_	_	(1,960)	
330.0	Distribution Reservoirs and Standpipes - Extra Cap (Max Hour)	(2,814,503) MAX		(417,769)	_	_	_	(417,769)	
331.0		(4,870,949) BASE		-	_	_	_	(11,293)	
331.0		(5,393,783) MAX		(309,795)	_	_	_	(309,795)	
331.0		(10,824,113) MAX		(1,606,672)	_	_	_	(1,606,672)	
333.0		(6,265,157) SER		-	(563,795)	_	-	(563,795)	
334.0	Meters and Meter Installations	(2,744,466) METI		-	-	-	-	-	
335.0		(1,858,054) FIRE	-	-	-	-	-	-	
339.0	Other Plant and Miscellaneous Eq.	(127,771) TDPL	.T (53)	(9,116)	(1,603)	-	-	(10,772)	
	Sub-total	(35,744,116)	(13,305)	(2,343,353)	(565,398)	-	-	(2,922,056)	
		· ·		· ·	-			-	

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 18 of 21

Acct.						Private Fire Pr	otection		
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	General Plant								
340.0	Office Furniture and Equipment	(475,488	3) STTDPLT	(330)	(26,845)	(3,583)	-	-	(30,758)
341.0	Transportation Equipment	(1,417,75	) STTDPLT	(985)	(80,043)	(10,684)	-	-	(91,711)
343.0	Tools, Shop and Garage Equipment	(322,028	3) STTDPLT	(224)	(18,181)	(2,427)	-	-	(20,831)
344.0	Laboratory Equipment	(97,128	3) STTDPLT	(67)	(5,484)	(732)	-	-	(6,283)
345.0	Power Operated Equipment		I) STTDPLT	(174)	(14,142)	(1,888)	-	-	(16,203)
346.0	Communication Equipment		3) STTDPLT	(345)	(28,027)	(3,741)	-	-	(32,113)
347.0	Computer Equipment		) STTDPLT	(3,365)	(273,562)	(36,513)	-	-	(313,440)
348.0	Other Tangible Equipment		)) STTDPLT	(233)	(18,935)	(2,527)	-	-	(21,696)
348.0			2) STTDPLT	(1)	(68)	(9)	-	-	(78)
	Sub-total	(8,241,35	))	(5,724)	(465, 287)	(62,103)	-	-	(533,114)
	~								
	ACCUM DEPREC: COST OF REMOVAL	5,449,81	RESERVE	3,733	290,897	46,895	-	-	341,525
	ACCUMULATED DEPREC: GAIN/LOSS	6.142.90	RESERVE	4,208	327,892	52,859	_	_	384,959
	THEORETICAL DEPRE RESERVE-2007		RESERVE	2,419	188,508	30,389	_	_	221,316
	Sub-total	15,124,31		10,360	807,297	130,144	-	-	947,800
	TOTAL DEPRECIATION ACCRUAL	(57,983,17	1)	(39,717)	(3,094,991)	(498,942)			(3,633,649)
	NET PLANT (including CIAC)	165,809,16	3	115,718	9,539,790	1,187,453	-	-	10,842,961
Plant A	djustments								
	Adjustments								
271-272	•	(31,657,629	) DLANT	(21,988)	(1,787,314)	(238,557)		_	(2,047,859)
211-212	Sub-total	(31,657,629		(21,988)	(1,787,314)	(238,557)			(2,047,859)
		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,	( ,,	(, , , , ,	,,,			( ).
	TOTAL CIAC	(31,657,629	9)	(21,988)	(1,787,314)	(238,557)	-	-	(2,047,859)
TOTAL N	IET PLANT	134,151,539	)	93,730	7,752,476	948,896	-	-	8,795,102

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 19 of 21

Acct.				Private Fire Protection						
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL	
EXPEN	SES									
O & M E	Expenses									
	Production - Source of Supply									
601.0	Operation Labor and Expenses - Base	32.68	0 BASE COST	76	_	_	_	_	76	
601.0	Operation Labor and Expenses - Extra Cap (Max Day)		8 MAX DAY	-	2,078	_	_	_	2,078	
602.0	Purchased Water		7 BASE COST	1.095	2,010	_	_	_	1.095	
603.0	Miscellaneous Expenses - Base		3 BASE COST	16	_	_	_	_	16	
603.0	Miscellaneous Expenses - Extra Cap (Max Day)		3 MAX DAY	-	450	_	_	_	450	
610.0	Maintenance Supervision and Engineering - Base		5 BASE COST	717		_	_	_	717	
610.0	Maintenance Supervision and Engineering - Extra Cap (Max Day)		1 MAX DAY	717	19,664	-		-	19,664	
010.0	Sub-total	1,207,73		1,904	22,193				24,097	
	Sub-total	1,207,73	•	1,904	22,193	•	-	•	24,097	
	Production - Pumping Expenses			0.004						
	Fuel or Power Purchased for Pumping - Base		3 BASE_COST	2,294		-	-	-	2,294	
623.0	Fuel or Power Purchased for Pumping - Extra Cap (Max Day)		2 MAX_DAY	-	9,341	-	-	-	9,341	
624.0	Pumping Labor and Expenses - Base		6 BASE_COST	155	-	-	-	-	155	
624.0	Pumping Labor and Expenses - Extra Cap (Max Day)		7 MAX_DAY	-	4,243	-	-	-	4,243	
624.0	Pumping Labor and Expenses - Extra Cap (Max Hour)		4 MAX_HOUR		22,006	-	-	-	22,006	
626.0	Miscellaneous Expenses - Base		4 BASE_COST	52	-	-	-	-	52	
626.0	Miscellaneous Expenses - Extra Cap (Max Day)		7 MAX_DAY	-	1,436	-	-	-	1,436	
626.0	Miscellaneous Expenses - Extra Cap (Max Hour)		3 MAX_HOUR	-	7,446	-	-	-	7,446	
631.0	Maintenance of Structures and Improvements - Base		6 BASE_COST	68	-	-	-	-	68	
631.0	Maintenance of Structures and Improvements - Extra Cap (Max Day)		8 MAX_DAY	-	1,861	-	-	-	1,861	
631.0	Maintenance of Structures and Improvements		5 MAX_HOUR	-	9,653	-	-	-	9,653	
	Sub-total	1,938,67	6	2,716	80,803	-	-	-	83,519	
	Production - Water Treatment Operations and Maintenance Expense									
641.0	Chemicals	908,98	1 BASE_COST	2,107	-	-	-	-	2,107	
642.0	Operation Labor and Expenses - Base	192,03	1 BASE_COST	445	-	-	-	-	445	
642.0	Operation Labor and Expenses - Extra Cap (Max Day)	212,64	3 MAX_DAY	-	12,213	-	-	-	12,213	
643.0	Miscellaneous Expenses - Base	(80,68	6) BASE_COST	(187)	-	-	-	-	(187)	
643.0	Miscellaneous Expenses - Extra Cap (Max Day)	(89,34	6) MAX_DAY	-	(5,132)	-	-	-	(5,132)	
652.0	Maintenance of Water Treatment Equipment - Base	77,08	0 BASE_COST	179	-	-	-	-	179	
652.0	Maintenance of Water Treatment Equipment - Extra Cap (Max Day)	85,35	4 MAX_DAY	-	4,902	-	-	-	4,902	
	Sub-total Sub-total	1,684,19	6	3,421	11,984	-	-	-	15,405	
	Production - Other									
926 0	Employee Pension and Benefits	243 90	0 PRODOM	406	5,805	_	_	-	6,211	
352 & 926	PRO FORMA Adjustments to Test Year		9 PRODOM	319	4.566	-	-	-	4,886	
	PRO FORMA Adjustments based on FIVE YEAR AVE		9 PRODOM	52	751	_	_	-	803	
020	Sub-total	467,27		778	11,122	-	-	-	11,900	
	Total Production Expanse	5,297,88	7	8.819	126.102			_	134,920	
	Total Production Expense	3,297,00		0,019	120,102	-	-	-	134,920	

# ACOS-6 Cost Classification and Allocation Results by Class

Acct.		Private Fire Protection							
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	cus	FIRE_HYD	REV	TOTAL
	Transmission & Distribution O&M Expenses								
660.0	Operation Supervision and Engineering	453 240	TDOPER	118	19,960	1,746	_	_	21,824
662.0	Transmission & Distribution Lines Expenses - Base		BASE COST	110	10,000	1,740	_		110
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)		MAX DAY	-	3.007	_	_	_	3,007
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)		MAX HOUR	_	15,593	_	_	_	15.593
663.0	Meter Expenses		METERS	_	-	_	_	_	-
664.0	Customer Installations Expenses	18,080		_	-	1,627	-	-	1,627
665.0	Miscellaneous Expenses		TDOPER	(0)	(26)	(2)	-	-	(29)
673.0	Maintenance of Transmission and Distribution Mains - Base		BASE COST	396		-	-	-	396
673.0	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Day)	189,150	MAX DAY	-	10,864	-	-	-	10,864
673.0	Maintenance of Transmission and Distribution Mains - Extra Cap (Max Hour)	379,582	MAX_HOUR	-	56,343	-	-	-	56,343
675.0	Maintenance of Services	294,871	SERV	-	-	26,535	-	-	26,535
676.0	Maintenance of Meters		METERS	-	-	-	-	-	-
677.0	Maintenance of Hydrants	133,729		-	-	-	-	-	-
921	Office Supplies and Other Expenses		OMXPAG	78	5,767	756	-	-	6,601
926	Employee Pension and Benefits	378,515		319	17,976	2,384	-	-	20,679
950.0	Maintenance of General Plant		OMXPAG	88	6,458	846	-	-	7,392
, 926,950	PRO FORMA Adjustments to Test Year	98,367	TDOM	40	4,983	1,291	-	-	6,314
	Sub-total	2,946,706		1,197	149,264	38,678	-	-	189,139
	Engineering Expenses								
660.0	Operation Supervision and Engineering	1,211,076	ENGOM	649	110,058	0	_	_	110,706
662.0	Transmission & Distribution Lines Expenses		BASE COST	41	-	-	_	_	41
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Day)		MAX DAY	-	1,126	_	_	_	1,126
662.0	Transmission & Distribution Lines Expenses - Extra Cap (Max Hour)		MAX HOUR	-	5,841	_	_	_	5,841
660-662	PRO FORMA Adjustments to Test Year		ENGOM	6	1,028	0	_	_	1,035
	Sub-total	1,299,064		696	118,054	0	-	-	118,749
	Customer Account								
	Meter Reading Expenses		CUST_METERS	-	-	-	-	-	-
903.0	Customer Records and Collection Expenses	322,306		-	-	10,170	-	-	10,170
904.0	Uncollectible Accounts		CUSTS	-	-	1,530	-	-	1,530
902-904	PRO FORMA Adjustments to Test Year		CUSTOM	14	404	-	-	-	418
	Sub-total	499,489		14	404	11,701	•	•	12,119
000	Administrative and General Expenses	0.040.400	ONNERG	0.050	454.046	40.707			470.05
	Administrative and General Salaries	2,949,490		2,053	151,013	19,787	-	-	172,854
921	Office Supplies and Other Expenses		OMXPAG	361	26,559	3,480	-	-	30,400
922	Administrative Expenses Transferred-Cr.	(1,622,715)		(1,130)	(83,083)	(10,886)	-	-	(95,099)
923	Outside Services Employed		OMXPAG	268	19,730	2,585	-	-	22,584
924	Property Insurance	487,967		339	27,549	3,677	-	-	31,565
926	Employee Pension and Benefits	3,967,529		3,342	188,426	24,988	-	-	216,756
928	Regulatory Commission Expenses		OMXPAG	74	5,411	709	-	-	6,193
930	Miscellaneous General Expenses		OMXPAG	107	7,886	1,033	-	-	9,026
950.0	Maintenance of General Plant		OMXPAG	442	32,477	4,255	-	-	37,174
920-950	A&G PRO FORMA Adjustments to Test Year	551,328		464	26,184	3,472	-	-	30,120
930.0	Miscellaneous General Expenses	(3,288,063)		(2,289)	(168,348)	(22,059)	-	-	(192,696)
930.0	PRO FORMA Adjustments to Test Year		OMXPAG	(103)	(7,565)	(991)	-	-	(8,660)
	Sub-total	4,695,872		3,929	226,239	30,051	-	-	260,219
	TOTAL O & M EXPENSES	14,739,018		14,654	620,062	80,430			715,146

# ACOS-6 Cost Classification and Allocation Results by Class

Witness: G. Therrien Page 21 of 21

Acct.				Private Fire Protection					
No.	Account Description	Amount	Alloc. Factor	BASE	EXTRA	CUS	FIRE_HYD	REV	TOTAL
	<b>-</b>								
Labor	Expense								
_	Salaries and Wages								
~	Production	1,774,985	PRODOM	2,955	42,249	_	-	-	45,203
~	Transmission and Distribution and Customer Accounts	2,235,577	TDCUSOM	785	97,091	32,681	-	-	130,558
~	Engineering		' ENGOM	631	107,103	0	-	-	107,734
	Sub-total	5,189,129	)	4,371	246,443	32,681	-	-	283,495
	TOTAL O & M LABOR EXP.	5,189,129	)	4,371	246,443	32,681	-	-	283,495
407.0	Amortization Expense	445.000							07.005
407.0	Amortization Expense Sub-total	415,268 <b>415,268</b>	NET_PLANT_IN	290 <b>290</b>	23,998 <b>23,998</b>	2,937 <b>2,937</b>	-		27,225 <b>27,225</b>
	Sub-total	413,200	•	290	23,990	2,937	-	-	21,223
	TOTAL DEPRECIATION EXPENSES	415,268	3	290	23,998	2,937	-	-	27,225
Toyon	Other Than Income Taxes								
	Payroll Taxes	698.087	' LABOR	588	33,154	4,397	_	_	38,138
	Property Taxes	4,547,936		3,159	256,766	34,271	-	-	294,196
100.0	Sub-total	5,246,023		3,747	289,919	38,668	-	-	332,334
	TOTAL TAXES OTHER THAN INCOME TAX	5,246,023	3	3,747	289,919	38,668	-	-	332,334
City B	ond Fixed Revenue Requirement (CBFRR)								
~ "	City Bond Fixed Revenue Requirement (CBFRR)	7,729,032	NET_PLANT_IN	5,400	446,653	54,670	-	-	506,723
	TOTAL	7,729,032	2	5,400	446,653	54,670	-	-	506,723
Incom	e Taxes								
ilicolli -	Tax Expense	103 240	NET_PLANT_IN	72	5,967	730	_	_	6,769
	TOTAL	103,249		72	5,967	730		-	6,769
					.,				,
Debt S	ervice Revenue Requirement								
~	Debt Service Revenue Requirement (DSRR 1.0)		NET_PLANT_IN	4,890	404,466	49,506	-	-	458,863
	TOTAL	7,698,925	5	5,379	444,913	54,457	-	-	504,749
Onerat	ing Revenues								
	) Water Sales	29,985.479	REVENUE	-	-	_	-	1,211,418	1,211,418
466.0			REVENUE	-	-	-	-	134	134
471-474		417,391	REVENUE	-	-	-	-	16,863	16,863
	Sub-total	30,406,191	1	•	-	-	-	1,228,415	1,228,415
	TOTAL	30,406,191		-	-	-	-	1,228,415	1,228,415

# ACOS-7 Allocation of System Revenue Requirements

Line No.	(A)		(B)	(C)	(D)	(E)	(F)	(G)	(H)
1	Proposed Total Revenue Requirement	\$	35,510,803	-					
2	Proposed Municipal Fire Revenue	\$	4,259,415	•					
3	Proposed Private Fire Revenue	\$	2,075,949						
4	Special Contract Fixed Fee Revenue	\$	606,443						
5	Collect from GM Rates and Contract Volumetric Rates	\$	28,568,996	- -					
6	GM Rate Increase Required		7.8%	- -					
7	Contract Customer Meter Charge Revenues								
				Anheuser-Busch	Hudson	Pennichuck East	Milford	Tyngsboro	
8	Meter Size - Meter 1			6"		1"		6"	
9	Meter Size - Meter 2			6"				n/a	
10	Current Meter Charge - Meter 1			\$1,002.35		\$38.75		\$42.31	
11	Current Meter Charge - Meter 2			\$1,002.35					
12	Proposed Meter Charge - Meter 1			\$1,081.00		\$41.79		\$45.63	
13	Proposed Meter Charge - Meter 2			\$1,081.00					
14	Pro Forma TY Current Meter Charge Revenue			\$24,056	\$0	\$465	\$0	\$508	\$25,029
15	Proposed Meter Charge Revenue			\$25,944	\$0	\$501	\$0	\$548	\$26,993
16	Volumetric Revenue								
		Ge	neral Metered	Anheuser-Busch	Hudson	Pennichuck East	Milford	Tyngsboro	
17	Volume (CCF)		4,447,137	408,795	32,411	146,390	37,993	145,893	
18	Current Rate (\$ per CCF)		\$3.660	\$1.062	\$2.325	\$1.264	\$2.303	\$2.294	
19	Proposed Rate (\$ per CCF)		\$3.95	\$1.145	\$2.507	\$1.363	\$2.484	\$2.474	
20	Pro Forma TY Five Year Ave. Volumetric Revenue		\$16,276,521	\$434,140	\$75,343	\$184,964	\$87,498	\$334,694	\$17,393,161
21	Proposed Volumetric Revenue		\$17.553.738	\$468,207	\$81,255	\$199,478	\$94.364	\$360.957	\$18,758,000

#### **GM Meter Revenue**

Meter Size	Count	Current Rate	Proposed Rate	Proposed Monthly Revenue	Pro Forma TY Current Revenue	Proposed Annual Revenue
5/8"	26,010	\$22.58	\$24.35	\$633,392	\$7,047,670	\$7,600,699
3/4"	556	\$32.50	\$35.05	\$19,488	\$216,840	\$233,855
1"	591	\$52.35	\$56.46	\$33,367	\$371,266	\$400,399
1 1/2"	447	\$102.02	\$110.03	\$49,181	\$547,235	\$590,177
2"	277	\$167.02	\$180.13	\$49,895	\$555,174	\$598,739
3"	58	\$306.28	\$330.31	\$19,158	\$213,171	\$229,898
4"	10	\$505.15	\$544.79	\$5,448	\$60,618	\$65,375
6"	5	\$1,002.35	\$1,081.00	\$5,405	\$60,141	\$64,860
8"		\$1,599.15	\$1,724.64	\$0	\$0	\$0
10"		\$2,295.22	\$2,475.33	\$0	\$0	\$0
			Total	\$815,334	\$9,072,115	\$9,784,003

34	Total TY Revenues with Five Year Pro Forma	\$ 31,101,191
35	Total System Proposed Revenue Collected	\$ 35,510,803
36	Total System Proposed Revenue to be Collected	\$ 35,510,803

ALLOC-1
Base and Excess Factor Calculations

Docket No. DW 19-084 herrien Exhibit Nop13e 1 of 1

	(A)	(B)	(C)	(D)	(E)	(F)			
Line No.	Description	Base	Max Day	Excess	% Base	% Excess			
				C - B	B/C	1 - E			
1	Base/Ex Cap - Max Day	9.10	19.18	10.08	47%	53%			
	(A)	(B)	(C)	(D)	(E)	(F)			
	Description	Base	Max Hour	Excess	% Base	% Excess			
				C - B	B/C	1 - E			
2	Base/Ex Cap - Max Hour	9.10	39.41	30.31	23%	77%			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	Description	Base	Max Day	Max Hour	<b>Excess Day</b>	Excess Hour	% Base	% Excess Day	% Excess Hour
					C - B	D - C	B/D	E/D	F/D
3	Base/Max Day/Max Hour	9.10	19.18	39.41	10.08	20.23	23%	26%	51%

#### ALLOC-2 Customers and Bill Counts by Class

Docket No. DW 19-084 herrien Exhibit Nop13e 1 of 1

	(A)	(B)	(C)	(D)
Line No.	Customer Class	Number of Customers	Number of Bills	Metered?
1	General Water	27,954	335,448	Υ
2	Private Fire	911	10,932	N
3	Muni Fire	5	60	N
4	Total	28,870	346,440	

	(A)	(B)	(C)
Line No.	Customer Class	3/4" Equivalents	Allocation Factor
1	General Water	30,302	91.2%
2	Private Fire	2,934	8.8%
3	Muni Fire	0	0.0%
4	Total	33,236	100.0%

	(A)	(B)	(C)		(D)	(E)	(F)	(G)	(H)
			General Water		Privat	e Fire	Muni Fire		
	Service Size	Weighting Factor (3/4" =1)	Service	Count	Weighing	Service Count	Weighing	Service Count	Weighing
5	3/4"	1.00	1	14,785	14,785	0	0		0
6	1"	1.02	1	10,363	10,575	0	0		0
7	1 1/2"	1.15		740	849	0	0		0
8	2"	1.23		1,162	1,431	37	46		0
9	3"	4.47		3	13	0	0		0
10	4"	4.47		488	2,183	134	600		0
11	6"	4.57		94	430	424	1,938		0
12	8"	1.15		0	0	294	337		0
13	10"	1.23		3	4	7	9		0
14	12"	4.47		7	31		0		0
15	16"	4.57		0	0	1	5		0
16	Totals	29	2	27,645	30,302	897	2,934	0	0

(A)		(B)
Meter Size		Unit Cost
3/4"	\$	2,975.50
1"	\$	3,036.51
1 1/2"	\$	3,414.18
2"	\$	3,663.32
3"	\$	13,313.22
4"	\$	13,313.22
6"	\$	13,601.67
8"	\$	16,398.92
10"	\$	19,561.62
12"	\$	19,561.62
16"	\$	29,342.43
	Meter Size  3/4"  1"  1 1/2"  2"  3"  4"  6"  8"  10"  12"	Meter Size  3/4" \$ 1" \$ 1 1/2" \$ 2" \$ 3" \$ 4" \$ 6" \$ 8" \$ 10" \$ 12" \$

# ALLOC-4 Base and Excess Factor Calculations by Class

		Annual Average				Max Day				Max Hour			
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	
					%	Amount	Excess		% of	Amount	Excess		
Line No.	Customer Class	CCF	MGD	%	Avg. Day	MGD	= (B) - (E)	%	Avg. Day	MGD	= (I) - (E)	%	
1	General Water	4,402,399	9.02	99.12%	188%	16.96	7.94	78.77%	325%	29.32	12.36	61.11%	
2	Municipal Fire	28,832	0.06	0.65%	0	1.62	1.56	15.49%	0	6.48	4.86	24.05%	
3	Private Fire	10,297	0.02	0.23%	0	0.60	0.58	5.74%	0	3.60	3.00	14.84%	
4	Total: Fire Service	39,130	0.08	0.88%	0	2.22	2.14	21.23%	0	10.09	7.87	38.89%	
5	Grand Total	4,441,529	9.10	100.00%	1.88	19.18	10.08	100.00%	3.25	39.41	20.23	100.00%	

### 2018 Test Year Billed Revenues Total Sales

	(A)	(B)	(C)	(D)	(E)
Line No.	Customer Class	General Water	Muni Fire	Private Fire	Total
1	Volumetric Charge	\$16,282,223			\$16,282,223
2	Meter Charge Revenue	\$9,002,557			\$9,002,557
3	Fixed Fee		\$3,444,078	\$1,211,418	\$4,655,497
4	Unbilled	\$45,014			
5	Total	\$25,329,794	\$3,444,078	\$1,211,418	\$29,940,277