



# Oregon

Kate Brown, Governor

## Public Utility Commission

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May 3, 2018

### ***Via Electronic Filing***

OREGON PUBLIC UTILITY COMMISSION  
ATTENTION: FILING CENTER  
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**RE: Docket No. UW 174 – In the Matter of GOVERNMENT CAMP  
WATER COMPANY, INC., Request for a General Rate Revision.**

Attached for filing are the following exhibits:

UW 174 Exhibit 100\_105 Brock and

UW 174 Exhibit 200\_207 Muldoon

Included with this filing are six exhibits/work papers.

*/s/ Kay Barnes*

Kay Barnes

PUC- Utility Program

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CASE: UW 174  
WITNESS: MALIA BROCK

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 100**

**Direct Testimony**

**May 3, 2017**

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**INTRODUCTION**

**Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.**

A. My name is Malia Brock. I am a Utility Analyst in the Telecommunications and Water Division of the Utility Program for the Public Utility Commission of Oregon (Commission). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

**Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

A. My Witness Qualification Statement is found in Exhibit Staff/101.

**Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

A. The purpose of my testimony is to describe the Public Utility Commission of Oregon Staff’s (Staff) recommendations regarding Government Camp Water Company, Inc. (GCW or Company) request for a general rate revision in Docket UW 174. In my testimony I will address the following issues:

Issue 1 ---- Staff’s Summary Recommendation.....	3
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15 Exhibit 102 ---- Revenue Requirement ..... Brock/1  
16 Exhibit 103 ---- Adjustment Summary..... Brock/1  
17 Exhibit 104 ---- Plant..... Brock/1-2  
18 Exhibit 105 ---- Data Responses & Supporting Documentation.... Brock/1-72

19 **Q. WHO IS TESTIFYING IN THIS DOCKET?**

20 A. I am testifying as the primary and summary Staff witness in UW 174. Mr. Matt  
21 Muldoon will provide additional testimony in Staff/200 regarding cost of capital  
22 issues.

23 **Q. DID YOU PREPARE EXHIBITS FOR THIS DOCKET?**

24 A. Yes. I prepared Exhibit Staff/101, consisting of two pages, Exhibit Staff/102,  
25 consisting of one page, Exhibit Staff/103, consisting of one page, Exhibit  
26 Staff/104, consisting of two pages, and Exhibit/Staff 105, consisting of  
27 72 pages.

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**ISSUE 1: STAFF'S SUMMARY RECOMMENDATION**

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**Q. What is Staff's summary recommendation?**

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A. Staff recommends a revenue requirement of \$173,386, as compared to GCW's request of \$306,290, resulting in an annual revenue decrease of \$3,008 or 1.71 percent below the Company's 2016 Test Year revenues, with an 8.52 percent rate of return on a rate base of \$492,186. The calculation of Staff's revenue requirement is shown in Exhibit Staff/102.

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**Q. What are the major issues affecting Staff's summary recommendation?**

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A. The major reasons for the differences in the positions taken by Staff and the Company include: several unapproved affiliated interest agreements, issues with the Company's accounting and consumption records, substantial changes to salaries and other costs proposed by the Company that have not been established to be reasonable or necessary for providing service. As discussed in more detail below, Staff anticipates that its recommendations may change if the affiliated interest agreements that have yet to be approved are later approved for amounts that are reasonable and consistent with Commission policy.

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**ISSUE 2: GCW'S DESCRIPTION AND REGULATORY HISTORY**

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**Q. Please describe Government Camp Water Company, Inc.**

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A. GCW is a rate and service regulated investor-owned water utility located in Government Camp, Oregon. Government Camp is a small, unincorporated winter resort community located near Mt. Hood. As there is no municipal water system serving this area, GCW is the major water provider and currently

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1 serves 660 water customers.<sup>1</sup> GCW provides water service to local resorts,  
2 Skibowl and Mt. Hood Lodge and Resort, as well as local hotels, restaurants  
3 and businesses supporting this resort community. GCW also provides water  
4 service to a seasonal residential population and a permanent local population  
5 that is estimated to be between 190 and 260 people.

6 GCW's water source is a captured artesian spring located on federal  
7 land supplying an abundance of gravity fed water.<sup>2</sup> GCW possesses a water  
8 right dating back to September of 1908, which allows 4.5 cubic feet per second  
9 (cfs) of water appropriation.<sup>3</sup>

10 GCW has two storage tanks: one is a 100,000 gallon tank, which was  
11 constructed in 1980, and the second is a 250,000 gallon tank, which was  
12 installed in 2004 for fire protection.<sup>4</sup> Neither storage capacity nor pumping  
13 capacity has changed since Staff's review in the Company's 2011 rate case.

14 According to the Company's Testimony in support of its Application,  
15 GCW was organized in 1907.<sup>5</sup> The Utility is an S Corporation.<sup>6</sup> Maryanne Hill  
16 purchased GCW in 1961. On May 12, 2014, Ms. Hill gifted the entire  
17 Company to Lesli Ann Bekins by transferring 100 percent of the Company's  
18 stock to Ms. Bekins.<sup>7</sup> Ms. Bekins now identifies herself as the Owner and

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<sup>1</sup> Government Camp Water Company, Inc. Initial Testimony (GCW Testimony) at 4.

<sup>2</sup> GCW Testimony at 16.

<sup>3</sup> GCW Testimony at 15.

<sup>4</sup> GCW Testimony at 16.

<sup>5</sup> GCW Testimony at 4.

<sup>6</sup> GCW Testimony at 4.

<sup>7</sup> GCW Testimony at 4.

1 Corporate Secretary of GCW.<sup>8</sup> Ms. Hill and the Company did not seek  
2 Commission approval for this 2014 transaction.

3 **Q. Should Commission approval have been sought for the 2014 transfer**  
4 **of the Company?**

5 A. Yes. The transaction required Commission approval under ORS 757.480.

6 As the individual that owned, operated, and managed GCW, which includes  
7 plant and equipment that is used for the transmission, delivery and furnishing  
8 of water to the public, Ms. Hill falls under the definition of “public utility” under  
9 ORS 757.005(1)(a). She is therefore subject to ORS 757.480(1), which  
10 requires Commission approval before the disposal of any of the following: a  
11 public utility’s property in excess of \$100,000 that is necessary and useful, the  
12 right to maintain and operate the utility or its property, or the right to perform  
13 any service as a public utility. Ms. Hill should have sought Commission  
14 approval to dispose of any of the following to Ms. Bekins: Ms. Hill’s ownership  
15 interest in the Company, her right to maintain and operate the Company and  
16 its property, and the right to provide service as a public utility.

17 **Q. Will Commission approval be sought for the 2014 transfer of the**  
18 **Company?**

19 A. At this time, it is not clear whether the Company plans to submit an application.  
20 Staff’s counsel notified GCW that Commission approval was required for this  
21 transaction and Staff now awaits an application for approval of the transfer. If  
22 GCW does not decide to file an application, Staff will assess its position on the

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<sup>8</sup> GCW Testimony at 2.

1 legal effect, if any, of the purported disposal the Company, the right to maintain  
2 and operate the utility and the Company's property, and the right to provide  
3 utility service.

4 **Q. Please provide a summary of GCW's regulatory history.**

5 A. GCW first filed an application with the Commission on May 12, 2000, for an  
6 allocation of exclusive territory that was granted in Order No. 02-287.<sup>9</sup>

7 The Commission asserted rate and service regulation over GCW in  
8 Order No. 09-313 on August 12, 2009, and directed the Company to file the  
9 appropriate tariffs within 60 days of that order, or no later than  
10 October 12, 2009.<sup>10</sup> The Commission granted the Company nine subsequent  
11 extensions to allow the Company to file either the tariffs or a rate case  
12 application with supporting documentation. On July 14, 2010, GCW filed tariff  
13 sheets to become effective October 1, 2010. At its August 24, 2010 public  
14 meeting, the Commission found good and sufficient cause to investigate the  
15 propriety and reasonableness of the tariffs and suspended the tariffs pending  
16 investigation, opening Docket No. UW 145 in Order No. 10-347.<sup>11</sup>

17 The rate suspension schedule in UW 145 was extended twice at the  
18 request of the parties. The parties to UW 145 (Staff, GCW, and two  
19 Interveners) entered into a stipulation settling all of the issues in UW 145 in

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<sup>9</sup> *In re Government Camp Water Company, Inc.*, OPUC Docket No. WA 67, Order No. 02-287 (April 22, 2002).

<sup>10</sup> *In re Government Camp Water Company, Inc.*, OPUC Docket No. WJ 24, Order No. 09-313 (August 12, 2009).

<sup>11</sup> *In re Government Camp Water Company, Inc.*, OPUC Docket No. UW 145, Order No. 10-347 (September 2, 2010).



1 July 2011. The Commission adopted that stipulation in Order No. 11-278,  
2 issued July 29, 2011.<sup>12</sup> The Stipulation included a 10 percent rate increase  
3 over adjusted test year revenues, with a rate effective date of  
4 September 1, 2011. It also allowed GCW the opportunity to earn a  
5 7.41 percent rate of return on a rate base of \$568,068. The Stipulation  
6 allowed GCW to read meters on a yearly basis due to seasonal issues with  
7 snow and to bill its customers on a quarterly basis.

8 The UW 145 Stipulation also included several conditions and  
9 requirements for GCW, including the following:

- 10 a. Paragraph 12 of the Stipulation required the Company to make a  
11 rate filing on or prior to January 2014.
- 12 b. Paragraph 9 of the Stipulation required the Company to enter into a  
13 three-year meter installation program. The program was “designed  
14 to convert all non-metered customers with greater than 3/4 inch  
15 service to metered service.” In conjunction with this requirement, a  
16 plant allowance of \$49,500 was entered into Plant in UW 145,  
17 which effectively allowed the recovery of costs for the metering  
18 program in advance.
- 19 c. Paragraph 6 of the Stipulation required the Company to charge  
20 Miscellaneous Services Charges according to Schedule 6 as set

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<sup>12</sup> *In re Government Camp Water Company, Inc.*, OPUC Docket No. UW 145, Order No. 11-278 (July 29, 2011).

1                   forth in the tariff sheet designated PUC Oregon No. 1, Original  
2                   Sheet No. 8.

3                   Additionally, Paragraph 11 of the Stipulation memorialized the fact that  
4                   during the proceedings in UW 145, the parties to that case became aware of  
5                   several “metered customer accounts mistakenly identified by their line sizes  
6                   instead of the meter sizes.” In that Paragraph, the parties to the Stipulation  
7                   acknowledged that these accounts “were inaccurately reported, but agreed to  
8                   move forward for ratemaking purposes” with the affected customers being  
9                   “continue[d] to be charged as classified” in the proposal recommended in the  
10                  Stipulation, with one exception, and with the additional expectation that the  
11                  “Company will make customer line and meter size corrections in the next rate  
12                  case.”

13                  **Q. Did GCW comply with the requirements of the Stipulation that resolved**  
14                  **the Company’s last rate case?**

15                  A. No. The Company did not fulfill the requirements contained in Paragraphs 12,  
16                  9, and 6 to the Stipulation that resolved UW 145. Each of these are discussed  
17                  in more detail below.

18                  **Q. Please summarize how certain metered customers are identified by their**  
19                  **line sizes, as noted in the UW 145 Stipulation.**

20                  A. Staff investigated the Company’s billing practices in order to better understand  
21                  the account inaccuracies referred to in the UW 145 Stipulation and line-versus-  
22                  meter-size issues with the Company’s approach to billing and rate design. To  
23                  summarize GCW’s current practices, the Company indicated in its response to

1 Data Request (DR) 68<sup>13</sup> that there are 304 individual units on the system that  
2 are served by master meter accounts. For master meter accounts, the  
3 Company explained that it bills the master meter customer (for instance, a  
4 homeowner's association) a monthly base rate based on the size of the line  
5 going to each individual unit (as opposed to the size of the master meter) and  
6 for total consumption, which is measured through the master meter. GCW  
7 does not bill the individual units served by master meters; the master meter  
8 customer is its customer. As discussed below in conjunction with Staff's  
9 recommended rate design, this results in a billing practice that departs from the  
10 application of what Staff has referred to as the standard AWWA factors, which  
11 calculates bills for metered customers in relation to the amount of water  
12 delivered by the meter size.

### 13 **ISSUE 3: SUMMARY OF GCW'S GENERAL RATE FILING**

#### 14 **Q. Please describe GCW's request for a general rate revision.**

15 A. The Company filed its request for a general rate increase on  
16 December 29, 2017. GCW proposed an annual revenue increase of \$129,896  
17 to the Company's 2016 annual revenues, or a 73.64 percent increase, resulting  
18 in total annual revenues of \$306,290. After deducting for operating expenses,  
19 the Company's proposed projected revenues would produce a 10 percent rate  
20 of return on a rate base of \$558,127. The Company also proposes changes to  
21 its rate structure to move residential and commercial services into the same

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<sup>13</sup> See Exhibit Staff/105, Brock /1-2.

1 customer class, leaving one customer class for those receiving metered  
2 service or and one for those receiving flat-rate service. The Company  
3 additionally proposes a water hauler rate based on metered service and a new  
4 fire prevention rate to cover the cost of fire hydrants.

5 **Q. Why is the Company requesting the general rate increase?**

6 A. GCW asserts that it requires a rate increase to cover cost increases because  
7 current rates do not generate enough revenue to cover the cost of operating  
8 the system and give the Company an opportunity to earn a reasonable return  
9 on its investment and because capital improvement expenditures need to be  
10 updated and included in rate base.<sup>14</sup> Specific examples of such increased  
11 costs highlighted in GCW's application are increases to officer wages, affiliated  
12 interest costs, contractor expenses, and to add Construction Work in Progress  
13 (CWIP) in plant to replace a service line. GCW proposes to pay \$24,000  
14 annually to Ms. Hill upon her retirement at the conclusion of this rate case and  
15 to increase the \$12,000 salary for Ms. Bekins as she will assume duties of full-  
16 time CEO following Ms. Hill's retirement.<sup>15</sup> GCW also proposes a 214 percent  
17 increase in amount paid under two affiliated interest leases.

18 **Q. Is Commission approval of these affiliated interest leases necessary?**

19 A. Yes. As discussed later in this testimony, these leases have not yet been  
20 approved by the Commission and are now the subject of Docket Nos. UI 398  
21 and UI 399.

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<sup>14</sup> GCW Testimony at 3.

<sup>15</sup> GCW Testimony at 5.

1 **Q. What test year period did the Company use in its filing?**

2 A. The Company used the Test Year period January 1, 2016 through  
3 December 31, 2016.

4 **Q. Please describe why a Test Year is necessary.**

5 A. The Commission is charged with setting rates at a level which will allow the  
6 utility a reasonable opportunity to earn its authorized rate of return during the  
7 period the rates will be in effect. Therefore, Staff's recommendation for rates  
8 must estimate both the costs and revenues that will be in effect during that  
9 period in order to determine an appropriate revenue requirement for the utility.  
10 In determining the revenue requirement appropriate for the rate period, a test  
11 year must be utilized as a basis for establishing rates. A historic test year  
12 typically involves the use of a past 12-month period (usually the 12-month  
13 period immediately preceding the rate case filing) with adjustments for items  
14 that are one-time events and those that are known and measurable in the  
15 future. A future test year is for a 12-month period that begins after the rate  
16 case is filed, and uses utility forecasting and budgeting to derive forward-  
17 looking revenues and expenses over a future 12-month period. In Oregon,  
18 water utilities have typically chosen to use an historic test year in Commission  
19 proceedings, as GCW has done in this case.

20 **Q. Does the Company propose any adjustments to the Company's Test Year**  
21 **expenses?**

22 A. Yes, the Company made several adjustments to its calendar year 2016  
23 information to reflect changes in costs occurring outside of the Test Year.

1 The Company proposed increases to Salaries and Wages-Officers, Employee  
2 Pension and Benefits, Rental of Building Real Property; and Contract Services.

3 **Q. What are GCW’s current rates and what rate increase has GCW  
4 proposed in this case?**

5 A. Tables 1, 2, and 3 below illustrate GCW’s current rates provided in its  
6 Application.<sup>16</sup>

7 **Table 1. Current Rates for Metered Service**

**CURRENT RATES FOR RESIDENTIAL/COMMERCIAL METERED SERVICE**

Line or Meter Size	Metered or Flat	Current Residential Monthly Base or Flat Rate	Residential Consumption Included in Base Rate		Consumption Rate per Unit of Measurement
3/4” or 5/8”	Metered	\$15.86	none	Cubic ft	\$1.12 Per 100 cf of water used
1”	Metered	\$19.82	none	Cubic ft	\$1.12 Per 100 cf of water used
1 1/2”	Metered	\$24.10	none	Cubic ft	\$1.12 Per 100 cf of water used
2”	Metered	\$29.81	none	Cubic ft	\$1.12 Per 100 cf of water used
4”	Metered	\$34.88	none	Cubic ft	\$1.12 Per 100 cf of water used
6”	Metered	\$40.43	none	Cubic ft	\$1.12 Per 100 cf of water used

8 **Table 2. Current Rates for Flat Rate Service**

**CURRENT FLAT RATES FOR RESIDENTIAL/COMMERCIAL SERVICE**

Line or Meter Size	Metered or Flat	Current Monthly Flat Rate	Consumption Rate per Unit of Measurement
3/4” or 5/8”	Flat	\$20.75	None
1”	Flat	\$24.17	None
1 1/2”	Flat	\$28.72	None
2”	Flat	\$34.53	None
4”	Flat	\$40.07	None
6”	Flat	\$45.65	None

<sup>16</sup> GCW Testimony at 10-11.

1 **Table 3. Current Rate for Water Hauling**

<b>CURRENT RATE FOR WATER HAULING</b>		
<b>Commodity Rate</b>	<b>No. Of Units</b>	<b>Unit</b>
\$1.12 per each	100	Cubic Feet

2 Tables 4, 5, 6, and 7 below illustrate GCW's proposed rates provided in its  
3 Application.<sup>17</sup>

4 **Table 4. GCW's Proposed Rates for Metered Service**

**PROPOSED RATES  
FOR RESIDENTIAL & COMMERCIAL METERED SERVICE**

<b>Meter Size</b>	<b>Metered</b>	<b>Proposed Residential Monthly Base Rate</b>	<b>Residential Consumption Included in Base Rate</b>		<b>Proposed Consumption Rate per Unit of Measurement</b>
3/4" or 5/8"	Metered	\$27.56	none	Cubic ft	\$1.83 Per 100 cf of water used
1"	Metered	\$34.44	none	Cubic ft	\$1.83 Per 100 cf of water used
1 1/2"	Metered	\$41.88	none	Cubic ft	\$1.83 Per 100 cf of water used
2"	Metered	\$51.80	none	Cubic ft	\$1.83 Per 100 cf of water used
4"	Metered	\$60.61	none	Cubic ft	\$1.83 Per 100 cf of water used
6"	Metered	\$70.26	none	Cubic ft	\$1.83 Per 100 cf of water used

5 **Table 5. GCW's Proposed Rates for Flat Rate Service**

**PROPOSED RATES  
FOR RESIDENTIAL & COMMERCIAL FLAT RATE SERVICE**

<b>Line Size</b>	<b>Flat Rate</b>	<b>Proposed Monthly Flat Rate</b>	<b>Consumption Rate</b>
3/4" or 5/8"	Flat	\$36.07	None
1"	Flat	\$42.01	None
1 1/2"	Flat	\$49.92	None
2"	Flat	\$60.02	None
4"	Flat	\$69.65	None
6"	Flat	\$79.34	None

<sup>17</sup> GCW Testimony at 12-13.

1 **Table 6. GCW's Proposed Rates for Water Hauling**

<b>PROPOSED RATE FOR WATER HAULERS</b>		
<b>Commodity Rate</b>	<b>No. Of Units</b>	<b>Unit</b>
\$1.83 per each	100	Cubic Feet

2 **Table 7. GCW's Proposed Fire Protection Rate**

<b>PROPOSED RATE FOR FIRE PROTECTION</b>	
<b>All metered and flat rate customers</b>	<b>Monthly Rate</b>
	\$0.28

3 **Q. What would average customer bills be under GCW's proposed rates?**

4 A. Table 8 below, which was included by GCW in its Application,<sup>18</sup> reflects the  
 5 effect of the Company's proposed rate increase on customer's monthly  
 6 average bills. Proposed increases by GCW result in the average customer's  
 7 bill increasing by approximately 74 percent.

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<sup>18</sup> GCW Testimony at 13-14.



**Table 8. GCW’s Proposed Average Bills, Consumption, and Revenue<sup>19</sup>**

**FOR RESIDENTIAL & COMMERCIAL METERED SERVICE**

Customer Class - METERED	Number of Customers	Average Monthly Bill	Average Monthly Consumption (100 cf)	Total Annual Revenue
Residential/Commercial - 5/8” or 3/4”	345	\$ 31.59	220	\$ 130,792.22
Residential/Commercial - 1”	19	\$ 52.05	962	\$ 11,867.57
Residential/Commercial - 1 1/2”	5	\$ 47.88	328	\$ 2,873.04
Residential/Commercial - 2”	21	\$ 111.03	3235	\$ 27,980.66
Residential/Commercial – 4”	2	\$ 300.72	13,114	\$ 7,217.19
Residential/Commercial – 6”	1	\$ 71.39	62	\$ 856.64
TOTAL	393			\$ 181,587.32

**FOR RESIDENTIAL & COMMERCIAL FLAT RATE SERVICE**

Customer Class - FLAT	Number of Customers	Average Monthly Bill	Average Monthly Consumption	Total Annual Revenue
Residential/Commercial - 5/8” or 3/4”	256	\$ 36.07	none	\$ 110,792.96
Residential/Commercial - 1”	2	\$ 42.01	none	\$ 1,008.23
Residential/Commercial - 1 1/2”	0	\$ 49.92	none	\$ 0
Residential/Commercial - 2”	9	\$ 60.02	none	\$ 6,481.76
Residential/Commercial – 4”	0	\$ 69.65	none	\$ 0
Residential/Commercial – 6”	0	\$ 79.34	none	\$ 0
TOTAL	267			\$ 118,282.96

- 1 **Q. Does Staff have observations about the Company’s proposed rates?**
- 2 A. Yes. Taking the Company’s calculations as true for the purposes of this
- 3 question, a comparison of the estimated monthly bill averages for the same
- 4 size metered customers to their corresponding line sized flat rated customer’s
- 5 monthly average bills shows that under the Company’s proposed rate

<sup>19</sup> In the Table 8 provided in the Company’s Application of proposed residential and commercial flat rate services estimating average monthly consumption, Staff would recommend ‘unknown,’ instead of ‘none’ in the average monthly consumption of flat rate services as consumption for flat rate service does occur but is not measured.

1 structure, customers with meter sizes of one, two, and four inches would pay  
2 more per month, on average, than customers with one, two, and four inch line  
3 sizes that receive flat rate service. For instance, a two inch metered customer  
4 would have an estimated average monthly bill of \$111.03 per month, while the  
5 flat-rated two inch customer would have a static monthly bill of \$60.02 per  
6 month. This inverse relationship between metered and flat-rated bills for the  
7 same size service is inconsistent with the cost recovery goals that rates are  
8 typically designed to accomplish. Overall rates are designed to recover a  
9 company's cost of providing service. For metered customers, those costs are  
10 recovered through both a base rate that does not vary month to month and a  
11 commodity rate that varies with usage. In total, those rates are designed to  
12 recover the company's cost of providing service to the customer. In  
13 comparison, flat-rated customers pay one charge per month that should also  
14 accomplish that same cost recovery goal. To accomplish that goal, the single  
15 flat-rate charge must be large enough to recover costs that are recovered  
16 through both the base rate and commodity charge for metered customers.  
17 Based on the average bill information provided by Government Camp for  
18 metered customers, the flat-rate customer's bill would not provide the same  
19 level of cost recovery as would the metered customer's bill, assuming there is  
20 similar consumption by both metered and flat-rate customers.

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**ISSUE 4: STAFF'S REVIEW OF GCWS FILING**

2

**Q. Please describe Staff's investigation into GCW's request for a general rate increase.**

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A. Staff's investigation and analysis of GCW's general rate case filing included a comprehensive examination of the Company's revenues, expenses, proposed adjustments, capital improvements, system capacity, utility plant, accumulated depreciation and expense, GCW's Master Plan, quality of service, consumer complaints, Contribution in Aid of Construction (CIAC), and GCW's internal billing and consumption records. Further, Staff reviewed rate base, rate design, the cost of capital, and the sources and status of GCW's debt. Staff also identified several affiliated interest issues necessitating additional filings by the Company. Staff has issued more than ninety five data requests to the Company and reviewed GCW's replies throughout the investigation. Staff appreciates the Company's cooperation in this rate case.

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**Q. What major specific issues did Staff investigate?**

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A. Specific issues included:

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a) Rate structure, including making progress toward use of standard factors to design rates that increase in relation to meter size;

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b) Consumption and billing data;

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c) The proposed full-time CEO salary;

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d) The proposed unfunded pension;

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e) Increased contractor expenses;

- 1 f) Transportation expenses;
- 2 g) Plant additions and adjustments;
- 3 h) Status of proposed Construction Work in Progress
- 4 i) Expenses associated with potential affiliated interests;
- 5 j) Compliance with the terms of the UW 145 Stipulation;
- 6 k) Status and maturity of the Company's debt, including the
- 7 water tank loan, which has no written agreement, with a
- 8 reported December 2016 balance of \$204,020;
- 9 l) Customer billing and service complaints;
- 10 m) The disposal of the Company in 2014 without
- 11 Commission approval (discussed above);

12 **Q. Please describe Staff's approach to developing a rate structure.**

13 A. As GCW's customers are billed a mixture of metered and flat rates, Staff

14 reviewed the past rate design adopted in UW 145 as well as customer billing

15 records to assess the Company's proposal and develop a recommendation that

16 is fair and equitable across GCW's customer base. Water rates are typically

17 designed such that customers with larger meter sizes pay higher base rates

18 than those with smaller meters. This is because "the safe operating flow, or

19 capacity, of a particular size of meter is essentially the limiting factor in terms of

20 the demand that can be exerted on the water system through the meter."<sup>20</sup>

21 Furthermore, "the potential demand or capacity requirements placed on the

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<sup>20</sup> Principles of Water Rates, Fees, and Charges (M1) (6th Edition). American Water Works Association, 2012, Page 324.

1 water system...is generally an accepted basis for determining the level of  
2 charge applicable to the customer.”<sup>21</sup> As such, Staff often utilizes a standard  
3 set of factors for determining the appropriate relative differences in base rates  
4 for different meter sizes.<sup>22</sup> For example, the standard factor for a 5/8” base rate  
5 is 1 and the standard factor for a 1” base rate is 2.5, which means that a  
6 customer with a 1” meter would typically pay a base rate that is approximately  
7 2.5 times that of a customer with a 5/8” meter. Staff employed factors that  
8 increase based on the meter size to reduce the subsidies that may result from  
9 the current rate structure as progress is made toward applying the standard  
10 factors. I also concluded that it is advisable, as the parties agreed to do in  
11 concluding UW 145, to correct distortions in the Company’s current approach to  
12 billing that stem from the Company’s use of line sizes for some individual end  
13 users to calculate the bills sent to master meter customers that use meters of  
14 different sizes than the line sizes serving the end users. This practice inflated  
15 the appearance of the number of actual metered customers, which is normally  
16 determined solely by the number of meters placed in the field. It also reduced  
17 Staff’s ability to gradually move toward the standard factors discussed above.

18 **Q. Please summarize Staff’s review of GCW’s current customer billings and**  
19 **explain issues raised by GCW’s billing data.**

20 A. Yes. After reviewing the Company’s billing and consumption records, I  
21 identified three general kinds of issues: billings that appear to be inconsistent

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<sup>21</sup> *Id.*

<sup>22</sup> See *In re Crooked River Ranch Water Co.*, Docket No. UW 162, Exhibit Staff/100 Hari/30, lines 18-19, filed Feb. 4, 2015.

1 with GCW's tariffs; apparent or potential irregularities in certain accounts'  
2 consumption as reported by the Company; and miscalculations involving  
3 consumption-based billing.

4 **Q. Please describe the billings that appear inconsistent with GCW's tariffs.**

5 A. Certain charges in the Company's billing records appear to be inconsistent with  
6 the Company's current tariffs and Paragraph 6 of the Stipulation in UW 145.

7 Table 9 below depicts excerpted billing records from the Company's response  
8 to DR 1 to show that it charged a \$25 New Account Setup Fee that is not listed  
9 in GCW's existing Miscellaneous Tariff, Schedule No. 6. Additionally,  
10 Connection Charges for New Service that are tariffed "at cost" in the  
11 Company's current Miscellaneous Schedule No. 6 appear instead to have been  
12 billed at a flat rate of \$450.

1 **Table 9. Billing Records Excerpted from DR 1<sup>23</sup>**

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/12/2016	12-6359	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
03/28/2016	12-6726	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
04/01/2016	12-6511	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
05/24/2016	12-6728	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
05/27/2016	12-6729	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
06/23/2016	12-6727	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
07/20/2016	12-7095	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
08/01/2016	12-7096	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/12/2016	12-7099	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/14/2016	12-7098	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
10/18/2016	12-7470	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
10/20/2016	12-5995	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
11/28/2016	12-5997	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
11/28/2016	12-7471	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/03/2016	12-5999	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-5998	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7468	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7472	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00

2 Additionally, as shown in the Company’s response to DR 80<sup>24</sup> and Table  
 3 10 of excerpted records from the Company’s response to DR 1, the Company  
 4 appears to be billing a metered hydrant rate for snow making activities that is  
 5 not included in its tariffs.

6 **Table 10. Billing Records Excerpted from DR 1<sup>25</sup>**

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/01/2016	12-6279	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
01/01/2016	12-6306	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
02/08/2016	12-6360	MH	Quarterly base rate	461.7 · Metered Hydrant Sales	141 · Accounts Receivable	1.00	2,392.43
04/01/2016	12-6649	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
04/01/2016	12-6676	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
07/01/2016	12-7016	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
07/01/2016	12-7044	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
10/01/2016	12-7390	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
10/01/2016	12-7418	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43

<sup>23</sup> See Exhibit Staff/105, Brock 3-5. In response to DR 1, the Company provided an entire year’s worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8).

<sup>24</sup> See Exhibit Staff/105, Brock /6

<sup>25</sup> See Exhibit Staff/105, Brock /5. In response to DR 1, the Company provided an entire year’s worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8).

1 **Q. Please describe the apparent or potential irregularities in certain**  
2 **accounts' consumption.**

3 A. My review of customer billing records revealed that certain accounts'  
4 consumption was either missing or appeared unusually low, particularly when  
5 considered in relation to the size of the meter providing the service. One  
6 example is a local inn served by the largest meter size (and the only customer  
7 with a six inch meter), which was billed only \$2.46 for consumption during the  
8 entire test year. Per the Company's response to DR 82,<sup>26</sup> the six inch meter  
9 provides only fire suppression service to the local inn and usage would only  
10 occur in the event of a fire. I have been unable to find another billing record  
11 that appears to serve the inn, as the six inch meter appears to be the only  
12 meter serving this customer in the records provided by the Company. In a data  
13 request that was outstanding at the time this testimony was finalized, Staff  
14 asked the Company to clarify whether it provides water service to the inn. If it  
15 does provide such service, I will recommend in a later round of testimony that  
16 the consumption figures in the rate model that I recommend to the Commission  
17 be updated to reflect the inn's total annual consumption; this may change the  
18 recommended rates.

19 In another example, in the Company's response to DR 91<sup>27</sup> regarding  
20 missing consumption for a resort, the Company responded that the resort did  
21 not pay for 2016 consumption until 2017. As the Company's response did not

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<sup>26</sup> See Exhibit Staff/105, Brock /7.

<sup>27</sup> See Exhibit Staff/105, Brock /8.



1 indicate the amount of revenues that was not collected in 2016 for  
2 consumption, the effect on revenues in the test year is not known at this time.  
3 Once that consumption amount is known, I will recommend that the  
4 consumption figures in the rate model that I recommend to the Commission be  
5 updated to reflect the correct consumption; this may change the recommended  
6 rates.

7 Additionally, the Company's response to a similar question for another  
8 resort in DR 87<sup>28</sup> indicated the Company found a billing error due to a change  
9 of billing that resulted in the resort not having been billed for two quarters of  
10 consumption in 2016. It appears this consumption information was also  
11 missing from the billing records provided in DR's 1 and 58.

12 **Q. Did Staff identify issues with GCW's overall consumption figures?**

13 A. Yes. Staff was unable to match the total annual consumption provided by the  
14 Company page 11 of the Application of 2,281,122 cf with the billing record data  
15 provided in response to DR 1 and DR 58. When Staff sorted the billing records  
16 by meter size, the data provided for several metered customers were missing  
17 either the corresponding billing record for the base rate or consumption. These  
18 inconsistencies made it difficult to rely on the Company's data when designing  
19 rates. In order to develop and recommend a rate structure going forward, I  
20 therefore used information provided in response to DR 93,<sup>29</sup> which provided the  
21 actual number of meters, the actual meter sizes, and the corresponding

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<sup>28</sup> See Exhibit Staff/105, Brock /9.

<sup>29</sup> See Exhibit Staff/105, Brock /10-14.

1 consumption record in the meter readings, which totaled 2,507,585 cf in annual  
2 consumption.

3 **Q. Please describe the apparent miscalculations in consumption-based**  
4 **billing.**

5 A. Staff noted several apparent mistakes in the amount billed in relation to the  
6 amount of consumption measured. Table 11 below, excerpted from the billing  
7 records provided in response to DR 58, shows several anomalies in the  
8 amounts billed to customers when considered in light of the consumption  
9 amounts indicated. The Company's excerpted responses are shown in the  
10 seven columns on the left; the results of my analysis are shown in the two  
11 columns on the right, highlighted in yellow. The first column in yellow shows  
12 my computations of the consumption by converting cf into billing units (100 cf  
13 equals one billing unit) by dividing by 100, then multiplying by the rate of \$1.12.  
14 The second column in yellow provides the comparison to the dollar figure billed  
15 to Staff's computation of what the billed amount have been.

1 **Table 11. Billing Records Excerpted from DR 58<sup>30</sup>**

Date	Num	Item	Item Description	Qty	Debit	Credit	Staff Check	Difference
01/01/2016	12-6294	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	157.00		6.94	\$1.76	-\$5.18
04/01/2016	12-6664	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	157.00		6.94	\$1.76	-\$5.18
07/01/2016	12-7032	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	157.00		6.94	\$1.76	-\$5.18
10/01/2016	12-7406	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	203.50		9.00	\$2.28	-\$6.72
01/01/2016	12-6298	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	620.00		3.84	\$6.94	\$3.10
04/01/2016	12-6668	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	620.00		3.84	\$6.94	\$3.10
07/01/2016	12-7036	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	620.00		3.84	\$6.94	\$3.10
01/01/2016	12-6113	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	1,485.25		35.47	\$16.63	-\$18.84
04/01/2016	12-6481	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	1,485.25		35.47	\$16.63	-\$18.84
07/01/2016	12-6848	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	1,485.25		35.47	\$16.63	-\$18.84
10/01/2016	12-7221	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	487.00		11.63	\$5.45	-\$6.18
01/01/2016	12-6165	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	856.75		15.98	\$9.60	-\$6.38
04/01/2016	12-6534	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	856.75		15.98	\$9.60	-\$6.38
07/01/2016	12-6901	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	856.75		15.98	\$9.60	-\$6.38
10/01/2016	12-7274	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	769.00		14.34	\$8.61	-\$5.73

2 **Q. Please discuss Staff's proposed adjustments to GCW's expenses.**

3 A. Staff adjusted several expense accounts by eliminating the expense,  
 4 normalizing the expense, transferring expenses from one account to another, or  
 5 amortizing expenses over the appropriate periods. All of Staff's adjustments  
 6 are shown in Exhibit Staff /103. The following is a brief explanation of the  
 7 adjustments that I recommend.

8 **Account 603, Salaries and Wages**

9 Staff reviewed the proposed salary increase and new retirement payment for  
 10 the Company's officers. Ms. Bekins will assume Ms. Hill's duties in addition to  
 11 her own upon the retirement of Ms. Hill at the end of this rate case. GCW  
 12 proposes to pay Ms. Bekins an annual CEO's salary of \$56,782 plus the  
 13 associated payroll taxes as full-time, 40 hour week, employment.

<sup>30</sup> See Exhibit Staff/105, Brock /15-16. In response to DR 58, the Company provided an entire year's worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8).

1           As an initial matter, the Company has not applied for Commission  
2 approval of an affiliated interest (AI) agreement for Ms. Bekins. Commission  
3 precedent requires AI agreements to be filed for owner salaries.<sup>31</sup> The  
4 Company conceded this requirement in its response to DR 9,<sup>32</sup> but has not yet  
5 filed an AI agreement for Ms. Bekin's salary. Staff encourages GCW to file an  
6 affiliated interest application related to Ms. Bekins' salary as soon as possible.  
7 Failure to do so may result in Staff recommending disallowance of Ms. Bekins'  
8 entire salary in subsequent rounds of testimony.

9           Staff notes that the amount approved in UW 145 for Ms. Bekins' salary  
10 was \$9,600. Correspondingly, for the purposes of the rates recommended  
11 today, Staff has removed any proposed increase to Ms. Bekins' salary above  
12 that amount due to the lack of filing or approval of affiliated interest, resulting in  
13 a downward adjustment of \$47,182 in this salary expense. In a future round of  
14 testimony, Staff would expect to support an adjustment to this amount if the  
15 Company files, and the Commission approves, an AI agreement reflecting a  
16 different and reasonable amount for this salary expense.

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<sup>31</sup> See *In re Pete's Mountain Water Company, Inc.*, OPUC Docket No. UW 117, Order No. 06-657 (Dec. 4, 2006) ("[W]e agree with the Intervenor that PMWC must file affiliated interest contracts under ORS 757.495 for the wages and salaries paid to [owner-operators] before we can complete our review of the requested rate increase."); see also *In re Pete's Mountain Water Company, Inc.*, OPUC Docket No. UW 117, Order No. 07-219 (June 4, 2007) (noting that a water company must file affiliated interest contracts for the wages and salaries paid to its owner-operators); *In re Pete's Mountain Water Company, Inc.*, OPUC Docket No. UI 261, Order No. 07-106 (March 15, 2007) (approving an affiliated interest contract for an owner-operator, subject to conditions); *In re Pete's Mountain Water Company, Inc.*, OPUC Docket No. UI 262, Order No. 07-107 (March 15, 2007) (same).

<sup>32</sup> See Exhibit Staff/105, Brock /17.

1        **Account 604, Employee Pension & Benefits**

2        GCW proposes to convert Ms. Hill's current salary to form an unfunded annual  
3        retirement payment to Ms. Hill. Staff removed the proposed unfunded  
4        retirement payment to Ms. Hill citing it as an imprudent expense that is not a  
5        reasonable expense for current customers to pay for. This resulted in a  
6        downward adjustment of \$24,000. Also, while it does not appear to be the best  
7        reading of the Company's application, to the extent that the Company intended  
8        to convey that this is a past obligation incurred by the Company, including this  
9        amount in current rates may additionally be illegal as retroactive ratemaking.

10       **Account 611, Telephone/Communications**

11       In the Company's response to DR 14,<sup>33</sup> the Company indicated that \$420 had  
12       inadvertently been entered twice into expenses. Accordingly, Staff proposes a  
13       downward adjustment of \$420 from this account.

14       **Account 639, Contract Services-Other**

15       This account registered a large increase in comparison to the amount approved  
16       in UW 145 due primarily to the Company entering into a new water operator  
17       contract on April 20, 2015. In the Company's response to DR 31,<sup>34</sup> the  
18       Company supplied a copy of the contract that itemizes the increased amount of  
19       duties the water operator performs. Staff adjusted this account, after  
20       considering the Company's response to DR 42,<sup>35</sup> by applying a three year  
21       average for capitalized labor charges, which is reflected in Staff's downward

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<sup>33</sup> See Exhibit Staff/105, Brock /18-19.

<sup>34</sup> See Exhibit Staff/105, Brock /20-28.

<sup>35</sup> See Exhibit Staff/105, Brock /29-34.

1 adjustment of \$25,869, reducing this account to \$24,090. The adjusted amount  
2 of \$24,090 (which does not include an additional \$814 in Contract Services-  
3 Labor) represents a 1,032 percent increase over the \$2,128 contracted labor  
4 expense that was recognized in rates in UW 145. Staff's proposal of no  
5 adjustment to this account at this stage of the proceeding reflects the offsetting  
6 effect of the proposed change to Ms. Bekins' proposed salary. If the  
7 Commission approves a significant change to Ms. Bekins' salary in conjunction  
8 with an approval of any forthcoming AI contract that may be filed, Staff may  
9 revisit the decision to not recommend an adjustment here, in light of the fact  
10 that the water operator contract reflects overlapping duties with Ms. Bekins.

11 **Account 641, Rental of Building/Real Property**

12 GCW proposed an increase in this affiliated interest costs from the \$7,000  
13 approved in UW 145 to \$22,000, citing lease increases for office space located  
14 in Ms. Hill's residence and increases for a separate affiliated interest lease to  
15 reimburse Ms. Bekins for the Company's use of a storage barn and lot. In the  
16 Company's response to DR 9,<sup>36</sup> the Company conceded that that Commission  
17 approval of new AI Contracts are necessary for these leases. As of March 30,  
18 2018, the Company has now filed these agreements in Docket Nos. UI 398 and  
19 UI 399. Pending the Commission's review and approval of these new AI  
20 agreements, Staff has removed the proposed increases in affiliated interest  
21 costs, resulting in a downward adjustment of \$15,000. In a future round of  
22 testimony, Staff would expect to support an adjustment to this amount if the

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<sup>36</sup> See Exhibit Staff/105, Brock /17.

1 Commission approves AI agreements reflecting a different and reasonable  
2 amount for these expenses.

3 **Account 650, Transportation**

4 GCW included expenses for contractor's mileage as well as gas credit card and  
5 repair expenses for a 2004 Buick Rainier. In the Company's DR responses to  
6 Staff in DR 28, 29 and 70,<sup>37</sup> the Company indicates that the Buick is  
7 100 percent used by the Company but is owned by Charlomont Hill, LLC. After  
8 reviewing accounting records, Staff estimates approximately 84 gallons of gas  
9 were used in the test year. Due to its limited use and Charlomont Hill LLC's  
10 ownership of the Buick Rainier, a mileage reimbursement is a more reasonable  
11 and accurate way to account for the costs of the Company's use of the Buick.  
12 Applying estimated mileage at the \$0.545 per mile federal mileage rate results  
13 in a mileage reimbursement of \$736 for the Buick. Including the additional  
14 contractor mileage expense of \$1043, the combined mileage reimbursements  
15 total \$1,779, resulting in a downward adjustment of \$873 to this account.

16 **Account 656, Vehicle Insurance**

17 Due to its limited use and Charlomont Hill ownership of the Buick Rainier, Staff  
18 proposes to treat Company reimbursement expense for use of the Buick as  
19 mileage in Account 650, Transportation, as discussed above. As insurance is  
20 included in the mileage reimbursement in Account 650, Staff removed this  
21 proposed insurance expense resulting in a downward adjustment of \$1,322.

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<sup>37</sup> See Exhibit Staff/105, Brock /35, Brock /36. and Brock /37..

1        **Account 675, Miscellaneous Expense**

2        Staff reviewed GCW’s miscellaneous expense and removed finance charges  
3        from creditors bills resulting in a downward adjustment of \$190. Late payment  
4        charges incurred by the Company should not be borne by customers.

5        **Account 408.11 Property Tax**

6        Pending approval of the AI contract that is now the subject of UI Docket  
7        No. 399, Staff removed the property tax expense included for the leased barn  
8        and storage lot belonging to trust/Lesli Ann Bekins. Taxes for the barn and lot  
9        lease are proposed to be included in the AI Agreement; absent approval of this  
10       term of the Agreement, Staff removed this expense resulting in a downward  
11       adjustment of \$1,201 pending approval of the AI Agreement.

12       **Account 403, Depreciation Expense**

13	Depreciation Expense As Filed.....	\$23,498
14	Removal of Tyrolean Meadows True-up	(\$288)
15	Removal of Meter Allowance from UW 145	(\$2,475)
16	Removal of CWIP line replacement	(\$109)
17	Increase Adjustment for Water Tank Cost	\$215
18	Error Correction	\$395
19	Depreciation Expense—As Adjusted.....	\$21,236

20                Staff’s proposed downward adjustment of \$2,262 reflects the difference  
21        in the accumulated depreciation expense filed of \$23,498 and the adjusted  
22        depreciation amount of \$21,236.

23        **Q. Does Staff propose any adjustments to the Company’s Test Year**  
24        **revenues?**

25        A. Yes. In its initial filing, in response to question 27 in the Application, GCW  
26        listed test year Miscellaneous Revenues of \$4,562, but adjusted those



1 revenues to a proposed amount of zero revenues for the test year. Staff issued  
2 DR 25<sup>38</sup> requesting an explanation of why the Company removed these  
3 revenues. The Company responded that these revenues were removed as  
4 they were considered pass through costs. It is not clear what the Company  
5 means by “pass through” in this context. Customer billing data and the  
6 Company’s application<sup>39</sup> show that the miscellaneous charges billed to  
7 customers took the form of late payment charges, account setup fees, and  
8 service connection charges. Staff appropriately included these revenues,  
9 adding the \$4,562 of Miscellaneous Revenues back into the Revenue  
10 Requirement.

11 Additionally, the Company’s response to DR 87<sup>40</sup> indicated the Company  
12 found a billing error due to a change of billing that resulted in the resort not  
13 having been billed for two quarters of consumption in 2016. This mistake  
14 lowered the revenues for the affected account in the test year by \$2844.46.

15 **Q. Please discuss Staff’s review of GCW’s proposed net plant.**

16 A. Staff made a number of adjustments to GCW’s Utility Plant in Service,  
17 Accumulated Depreciation of Plant, Contributions in Aid of Construction (CIAC),  
18 and Accumulated Amortization of CIAC as described below.

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<sup>38</sup> See Exhibit Staff/105, Brock /38.

<sup>39</sup> GCW Testimony at 8.

<sup>40</sup> See Exhibit Staff/105, Brock /9.

1        **Account 101, Utility Plant in Service**

2        Staff removed a duplicate entry for Tyrolean Meadows Overrun True Up of  
3        \$14,419. Per DR 38,<sup>41</sup> the true-up for the Tyrolean plant investment was  
4        inadvertently included twice.

5                Staff removed an allowance for meter installations that was added in  
6        UW 145. The Company has already included and individually listed all meters  
7        installed in its plant since UW 145. This allowance artificially inflates the  
8        Company investments in plant. Per confirmation in the Company's response in  
9        DR 40,<sup>42</sup> Staff removed this allowance, resulting in the removal of the \$49,500  
10       meter allowance from UW 145.

11               In DR 37<sup>43</sup> Staff requested an explanation for a corrected entry made in  
12       UW 145 in recorded plant costs for the 100,000 gallon wood tank. The  
13       Company indicated in its response that the costs for the wooden tank were not  
14       previously recorded at the correct amount and provided documentation to  
15       support that the entry of \$48,475 made in UW 145 should actually have been  
16       recorded as \$59,249.22. After reviewing these records, Staff recommends  
17       updating this figure to include the full documented costs of \$59,249.22,  
18       resulting in an increase to plant of \$10,774.22.

19               Staff moved a proposed Construction Work In Progress (CWIP) service  
20       line replacement it to the appropriate CWIP Account 105, which resulted in a  
21       downward adjustment to this account of \$5,441.

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<sup>41</sup> See Exhibit Staff/105, Brock /39.

<sup>42</sup> See Exhibit Staff/105, Brock /40-44.

<sup>43</sup> See Exhibit Staff/105, Brock /45-47.

**Account 271 Contributions in Aid of Construction / Accumulated****Amortization of CIAC**

In DR 16,<sup>44</sup> Staff requested the Company provide the Contributions in Aid of Construction (CIAC) plant assets, which were not provided in the Company's original Application. CIAC represents the Company's plant assets that have been paid for by non-Company resources, such as developers or customers. Staff added the CIAC plant records and related Accumulated Amortization of CIAC per the Company's response to DR 16.

**Account 105, CWIP**

In the Company's response to DR 75,<sup>45</sup> the Company explained that a temporary repair on a service line serving four customers was completed last fall and a permanent line replacement project was identified and approved by the Company on November 10, 2017. However, given the Company's timeline provided in its DR response, construction on the subsequent line replacement appears not to have started yet. Three days after the Company decided to replace the lines, the project was put on hold due to snowfall that began on November 13, 2017.

Pursuant to ORS 757.355(2) the Commission has allowed CWIP in rate base in water rate cases on a case by case basis. OAR 860-036-2390 sets forth the requirements for inclusion in water rates:

The Commission may approve the cost of a specific capital improvement project into rates if: (a) The capital improvement project is under construction; (b) The water utility uses the additional revenues

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<sup>44</sup> See Exhibit Staff/105, Brock /48.

<sup>45</sup> See Exhibit Staff/105, Brock /49-51.

1 solely for the purpose of completing the capital improvement project;  
 2 (c) The water utility demonstrates that it is in the public interest to  
 3 provide funding for the capital improvements through rates; and (d)  
 4 The costs are approved by the Commission.

5 In light of the Company's response to DR 75, the Company has not  
 6 established that the line replacement project is under construction at this point  
 7 in time. Removing the CWIP amount proposed for the line replacement  
 8 results in a downward adjustment of \$5,441.

9 **Q. Please summarize the adjustments made to GCW's Plant.**

10 A. Adjustments made by Staff are as follows:

11	<b>Gross Plant</b>	
12	Gross Plant—As Filed	\$1,051,997
13	CIAC	\$1,077,641
14	Tyrolean Meadows Adjustment	(\$14,419)
15	Meter Allowance Adjustment	(\$49,500)
16	CWIP Line Adjustment	(\$5,441)
17	100,000 Gallon Wood Tank Adjustment	\$10,774
18	Rounding Correction	\$5
19	Gross Plant—As Adjusted	\$2,071,057
20	<b>Accumulated Depreciation</b>	
21	Accumulated Depreciation—As Filed	\$520,939
22	Accumulated Depreciation—As Adjusted	\$518,694
23	CIAC Depreciation	\$195,867
24	Accumulated Depreciation of Plant with CIAC	\$714,561

25 **Q. Please summarize all the Staff's adjustments to the Company's request in**  
 26 **this case.**

27 A. All the adjustments proposed by Staff can be found on the Adjustment  
 28 Summary contained in my Exhibit 103.

1 **Q. Please discuss the pending Affiliated Interest contracts that were recently**  
2 **filed by GCW.**

3 A. The Company filed two affiliated interest contracts on March 30, 2018. In  
4 UI Docket No. 398, GCW proposes to enter into a lease agreement with  
5 Maryanne Hill to lease shared office space in her home. In UI Docket No. 399,  
6 CGW proposes to enter into a lease agreement with Lesli Ann Bekins for a barn  
7 and lot used for storage of equipment and supplies necessary for the operation  
8 of the water system such as pipes, fittings, tools, equipment and inventory.  
9 Staff is in the process of examining the financial aspects of the AI contracts,  
10 including the comparable property information submitted by the Company,  
11 provisions that escalate the lease prices on an annual basis, and the  
12 contractual inclusion of tax payments for the barn lot. As these contracts were  
13 only very recently filed, Staff has not yet been able to complete its review of  
14 them or recommend that the Commission take a particular action on them. As  
15 the agreements have not been approved by the Commission, Staff has  
16 included only the prior dollar amounts that were approved for corresponding  
17 lease agreements in UW 145. This aspect of Staff's recommendation may  
18 change if the Commission approves the new agreements and the amounts  
19 reflect reasonable costs that are consistent with Commission rules and policies.

20 **Q. Does Staff have concerns regarding the Company's metering practices?**

21 A. Yes. As the artesian spring source does not have a meter that measures the  
22 demand placed on the system and not all customers are metered, the  
23 Company's ability to determine whether it can serve additional customers

1 (discussed below) may be limited. Potential customer growth from any potential  
2 new development, coupled with customer concerns that the system's  
3 infrastructure may be inadequate to serve more customers without substantial  
4 capital investment, raises concerns that the Company may not be well  
5 equipped to accurately assess its ability to serve an increased customer base.  
6 Additionally, as 147 of the Company's current customers are not metered, it is  
7 difficult to determine the demand on the source as well as compliance with its  
8 water right. Finally, the Company unilaterally decided not to meet the condition  
9 in the UW 145 Stipulation to meter certain customers, and did not seek the  
10 Commission's approval of its decision to depart from the terms of that  
11 settlement, which does not instill confidence in Staff.

12 **Q. Does Staff have any recommendations to address concerns regarding the**  
13 **Company's metering practices?**

14 A. Yes. Staff recommends a condition that a meter be placed on the spring source  
15 to ensure that the water use for the overall system is accurately recorded and  
16 known, to allow for accurate planning of future expansion and growth, and to  
17 aid in identifying leaks or pressure issues within the water system, especially in  
18 light of the potential new development. Staff also recommends that the meter  
19 condition contained in the Stipulation resolving UW 145 be re-imposed, with an  
20 annual reporting requirement to ensure that the Company is making progress to  
21 meter its customers. Staff also recommends that the rate structure be  
22 developed in a way that does not distort the Company's actual number of  
23 meters in the field. I discuss this further below in the context of rate design.

1 **Q. Did the Company meet the requirements imposed on it under the**  
2 **Stipulation that resolved its last rate case?**

3 A. No. As noted previously, GCW's agreed in Paragraph 12 of the Stipulation in  
4 UW 145 that it would make a rate filing on or before January 2014. In the  
5 Company's response to DR 20<sup>46</sup> it stated that as a small water system, filing a  
6 rate case is time consuming and costs money. The Company advised that in  
7 January of 2014, the Company requested PUC Staff stipulate to an 18 month  
8 extension as it was the Company's perception that a rate case was not yet  
9 advisable. Staff has not located any record of that extension and notes that the  
10 Commission did not approve an extension. Assuming such an extension was  
11 granted, this rate case filing was still substantially later than the extension  
12 would have permitted.

13 In addition, despite an allowance provided in plant in UW 145 to aid a  
14 3 year metering plan to meet the Condition in UW 145 that all customers with  
15 greater than 3/4 inch line sizes be converted to meters, there are 11 customers  
16 with greater than 3/4 inch line sizes in the proposed rates; 2 one inch  
17 customers and 9 two inch customers. The Company advises in response to  
18 DR 18<sup>47</sup> and 67<sup>48</sup> that the Company made a management decision to meter  
19 only those commercial customers who use a large volume of water. The  
20 Company expanded on this response to indicate it believes that full  
21 implementation of that condition is not in the Company's best interest given the

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<sup>46</sup> See Exhibit Staff/105, Brock 52.

<sup>47</sup> See Exhibit Staff/105, Brock /53.

<sup>48</sup> See Exhibit Staff/105, Brock /54.

1 cost and the Company's financial situation. It is troubling that the Company did  
2 not comply with the conditions or seek Commission approval to reconsider the  
3 plan at the time it made the decision not to comply. This is particularly  
4 worrying because \$49,500 was added to plant as a meter allowance in  
5 UW 145, which has allowed the Company to recover these costs and a return  
6 on them in rates over the past eight years, yet the Company's response in  
7 DR 40<sup>49</sup> provides documentation of capital expenditures of only \$27,959.78 for  
8 meter installations.

9 **Q. Does Staff have any recommendations to address concerns regarding this**  
10 **noncompliance?**

11 A. Yes. The Commission should add a condition to the Order in UW 174 that all  
12 customers with greater than 3/4 inch line sizes be converted to metered  
13 customers, as was expected in compliance with UW 145, and that GCW  
14 provide an annual status report as to how they are progressing on this condition  
15 beginning one year after issue date of the Order. The Commission should also  
16 require that the Company file a new rate case by January 1, 2021, or seek the  
17 Commission's approval if it believes that a rate case is not warranted by that  
18 date.

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<sup>49</sup> See Exhibit Staff/105, Brock /40.



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**ISSUE 5: CUSTOMER CONCERNS**

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**Q. Were customers notified of the proposed rate increase?**

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A. Yes. GCW filed a copy of the notice sent to customers with the Commission on January 16, 2018. The customer notice was dated January 11, 2018, to notify their customers of the proposed rate increase.

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**Q. Have GCW customers expressed any concerns to the Commission?**

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A. Yes, the Pre-Hearing Conference was well attended despite inclement weather conditions in Government Camp on the day the conference was held. Present were the Company, its attorneys, family members, several HOA representatives, the water operator contractor employed by the Company and other customers. One customer used a telephone bridge arranged at the last minute due to the inclement weather conditions.

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Many of those in attendance expressed concerns over the amount of the proposed rate increase, the lack of a gradual rate increase, the amount of the proposed pension and wages, infrastructure updates and potential sale of the water system.

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One attendee brought up a service issue relating to snow machine making activities that affected water pressure in December of 2016. The Company's responses to DR 55, DR 56 and DR 57<sup>50</sup> explained that the cause was due to an error of a Skibowl employee. Snow making activities are now limited to no more than 350 gallons per minute (gpm) of use. Additionally, Skibowl is required to provide phone or text notification of all snow making

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<sup>50</sup> See Exhibit Staff/105, Brock /55, Brock/56, and Brock/57.

1 activities, which could be suspended during high domestic consumption  
2 periods. The Company monitors water system pressure during snow making  
3 activities hourly to ensure no pressure reduction occurs.

4 Another attendee brought up a concern relating to the potential effects of  
5 a proposed 480 unit condominium build. In the Company's response to  
6 DR 53,<sup>51</sup> which requested information about the proposed condominium build,  
7 the Company advised the proposal requires approval of a land exchange that  
8 has not been finalized between the United State Department of Agriculture and  
9 Mt. Hood Meadows. The proposed build falls within GCW's exclusive service  
10 area. The Company's response indicates it will comport with  
11 OAR 860-036-1270, Refusal of Water Service, which imposes requirements for  
12 when a utility must refuse service if they do not have adequate facilities,  
13 resources, or capacity to provide the requested service to other customers.  
14 Although it is possible that the Company may have adequate water, in light of  
15 the large potential size of this development, Staff recommends above that a  
16 meter be added to the artesian spring water source to aid the Company in  
17 making an accurate determination should this development or any other come  
18 to pass.

19 In addition to the comments provided above, Staff, including Consumer  
20 Services, received emails and phone calls from several customers who were  
21 unable to attend the conference to relay their concerns over the Company's  
22 proposed rates. Many expressed the concern over the lack of a gradual

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<sup>51</sup> See Exhibit Staff/105, Brock /58.

1 increase, the amount of the proposed increase, the proposed salaries, and the  
2 age of the system's infrastructure. One customer relayed their concern that the  
3 water tower loan in the name of Charlomont Hill LLC, was an affiliated interest  
4 loan from Maryanne Hill and/or Lesli Ann Bekins. Another customer reported  
5 periodic past outages due to construction issues, pipes breaking, a large fire in  
6 the area having drained the water tanks resulting in no water and an eight-hour  
7 refill time, and a giardia issue resulting in the need to boil water.

### 8 **ISSUE 6: COST OF CAPITAL**

#### 9 **Q. What Cost of Capital did the Company request in this case?**

10 A. The Company requested an 11.9 percent return on equity of \$268,442 and a  
11 7.5 percent cost of capital for a water tank loan with an outstanding balance of  
12 \$204,020 from Charlomont Hill, LLC.<sup>52</sup>

#### 13 **Q. Please describe Staff's investigation of the Company's debt.**

14 A. Staff sent data requests (DR 45, 46, 47, 48, 49, 61, 62, 63, 64 and 65)<sup>53</sup>  
15 seeking information and documentation regarding the Company's debt,  
16 including the water tank loan terms and a demand loan of \$69,656 that was  
17 paid off in the interim between UW 145 and the Company filing for UW 174.  
18 According to the Company, there is no written agreement for the water tank  
19 loan, but the water tank loan had an original balance of \$225,000 at 7.5 percent  
20 interest with a term of 30 years. The Company provided a balance sheet for  
21 the water tank loan; payments of \$1,602.25 began in October of 2004. Loan

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<sup>52</sup> GCW Testimony at 7.

<sup>53</sup> See Exhibit Staff/105, Brock /45-72

1 payments changed in April of 2008 to \$1,440.70, without explanation, leaving a  
2 balance as of December 2016 of \$204,020. The Company indicates that no  
3 formal loan documents exist. In the Company's response to DR 63,<sup>54</sup> which  
4 requested a comparison of the current market rate and 7.5 percent loan for the  
5 \$204,020 balance, the Company objected to answering. Staff notes that per  
6 the Company's response in DR 49,<sup>55</sup> this loan may be with an affiliated interest  
7 and may therefore require an affiliated interest contract filing. In the  
8 Company's response to DR 65,<sup>56</sup> it indicates that the on demand loan was paid  
9 off with no interest attached.

10 **Q. What capital structure did Staff recommend?**

11 A. Staff is recommending the use of using GCW's actual capital structure in this  
12 proceeding. As described above, GCW currently has loans outstanding of  
13 \$204,000. The remainder of the capital necessary for GCW to fund its rate  
14 base comes in the form of equity.

15 **Q. Please summarize Staff's Cost of Capital recommendation in this**  
16 **proceeding.**

17 A. Based on the return on equity of 9.25 percent supported by Mr. Muldoon and  
18 the actual capital structure described above, Staff is recommending the cost of  
19 capital shown below in Table 12.

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<sup>54</sup> See Exhibit Staff/105, Brock /70.

<sup>55</sup> See Exhibit Staff/105, Brock /63.

<sup>56</sup> See Exhibit Staff/105, Brock /72.

1 **TABLE 12– RECOMMENDED COST OF CAPITAL**

<b>Cost of Capital</b>					
	Amount	Cap Struct	Cost	Wtd. Cost	
Charlomot Hill LLC (water tank)	204,020	41.45%	7.50%	3.11%	
		0.00%		0.00%	
		0.00%		0.00%	
<b>Total Debt</b>	<b>204,020</b>	<b>41.45%</b>		<b>3.11%</b>	
Equity	288,166	58.55%	9.25%	5.42%	
		0.00%		0.00%	
		0.00%		0.00%	
<b>Total Equity</b>	<b>288,166</b>	<b>58.55%</b>		<b>5.42%</b>	<b>ROE</b>
<b>Total Debt + Equity</b>	<b>492,186</b>	<b>100.00%</b>		<b>8.52%</b>	<b>ROR</b>

2 **ISSUE 7: RATE SPREAD AND RATE DESIGN**

3 **Q. What are the components of Staff’s recommended rates?**

4 A. CGW’s rates are comprised of a mixture of metered and flat base rates. Base  
 5 rates are charged regardless of water use along with a corresponding  
 6 commodity or usage rate that is charged per 100 cf of water used for metered  
 7 customers. Compared to rates based on only commodity usage, metered base  
 8 rate design relies less on the usage of water to maintain Company funds and  
 9 ensures that there are adequate funds for the Company to operate during the  
 10 winter months when there is generally less water use.

11 Flat rate base customers do not have meters; consumption for flat rated  
 12 customers is not billed as it cannot be measured. Flat rates for water are billed  
 13 to customers at a static, year round rate. While static rates provide stability for  
 14 the Company, they do not encourage customers to save money in order to  
 15 reduce monthly bills like their metered counterpart.

1 **Q. What types of changes are reflected in Staff's recommended rate**  
2 **structure?**

3 A. The current and proposed rate designs do not apply the standard meter factors  
4 that Commission Staff has been moving toward for other water utilities. In the  
5 rates adopted in UW 145, the factors assigned to represent the billing ratios for  
6 the larger sized meter and line sizes were only slightly higher than their  
7 physically smaller counterparts and were far lower than standard factors.  
8 Additionally, bills for individual users served by master meter customers were  
9 not based on meter size at all.

10 To move the rate structure for the Company in the direction that Staff  
11 has been moving, changes to the current Company billing practice are  
12 warranted, which affects the proposed rate spread and design. The Company  
13 should bill customers based on the size of their meter and its associated  
14 consumption. While a tabular presentation of this this approach may appear to  
15 reduce the number of metered customers, it actually eliminates a distortion that  
16 results from the current rate design. Flat rate water customers will continue to  
17 be billed base on the line size of their service.

18 **Q. Please describe Staff's recommended rate spread.**

19 A. Staff's recommendation for rate spread and design in UW 174 changes the  
20 current billing practice to billing only for the actual size and number of meters in  
21 the field along with the corresponding consumption. As anticipated in UW 145,  
22 this stops the billing practice of billing for units based on the number and size of  
23 lines that run past the Master Meter. While this reduces the number of metered

1 customers that are listed in the rate spread table from 393 to 147, this results in  
 2 a more equitable billing methodology that better enables use of the factors used  
 3 by Staff. It also sends a clearer price signal to customers because rates are  
 4 based on meter size, not line sizes that are located beyond the meter.

5 This shift is reflected below in the proposed rate spread table as a  
 6 decreased number of metered customers. Rates are spread using a  
 7 percentage of revenues expressed as a calculation between the numbers of  
 8 metered customers (47.10 percent) in relation to the number of flat rated  
 9 customers (52.90 percent), illustrated in Table 13.

10 **Table 13. Rate Spread**

Rate Spread		
<b>TOTAL REVENUE REQUIREMENT</b>	173,386	
<b>REVENUE FROM WATER SALES</b>	165,348	<i>Allocation Factor</i>
<b>REVENUE FROM WATER SALES</b>		
Residential and Commercial Flat Rate	87462	52.90%
Residential and Commercial Metered Rate	77887	47.10%
<b>REVENUE FROM SOURCES OTHER THAN WATER SALES</b>		
Miscellaneous Service Charges	4,562	
Fire Protection Sales (Hydrant Mtc)	1,490	
Commercial Water Haulers	1,986	
<b>TOTAL REVENUE (Must equal Total Revenue Requirement)</b>	<b>173,386</b>	

11 **Q. Please describe Staff’s recommended rate design.**

12 A. As discussed previously, to ensure fair and equitable rates, the metered and  
 13 flat rate allocation factors should be moved in this rate case toward what Staff  
 14 has commonly referred to as standard AWWA factors. Under this proposal,  
 15 factors allocating costs are moved toward the standard factors used to bill in  
 16 relation to the amount of water delivered by the meter or line size. This

1 proposed change to increase the allocation factors of the larger meter and flat  
2 rated line size customers effectively shifts to a more appropriate allocation of  
3 the water system costs based on the demand customers place on the water  
4 system. Moving customers toward standard meter allocation factors generally  
5 helps to decrease subsidies the larger meter sizes are currently receiving.  
6 While subsidies will exist until factors can be moved to full standard allocation  
7 factors in future rate cases, it is not advisable to move the standard meter  
8 allocation factors fully in this rate case due to the likelihood of rate shock to  
9 large meter and flat rate line sizes.

10 Staff's recommendation makes substantial progress toward the use of  
11 standard AWWA factors is the best alternative given that it has been eight  
12 years since the Company's last rate case filing.

13 Staff has removed all flat rate line service sizes that do not have current  
14 customers (flat rate customers exist only the 3/4, one and two inch line  
15 services). While the same standard meter factors are often employed  
16 irrespective of whether the service is flat or metered, Staff recommends  
17 employing a different factor for the metered 2 inch and flat rated 2 inch rates in  
18 this case in order to provide balance between the 2 inch flat rate monthly  
19 average rate. Staff proposes to add a base rate for 3 inch meters, as meter  
20 records provided in response to DR 93<sup>57</sup> include two 3 inch meters in the field.

21 In terms of designing how metered revenues are to be allocated  
22 between the base and commodity rate, Staff proposes to keep the Company's

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<sup>57</sup> See Exhibit Staff/105, Brock /10.



1 current 70 percent of customer metered rates allocation to the base (or  
2 guaranteed) rate and 30 percent allocation to the consumption (or fluctuating)  
3 rate. While Staff notes this varies from the traditional 60/40 split employed for  
4 rate spread design, this was the allocation adopted in UW 145 based on the  
5 Company's assertion that 70 percent of its costs are fixed. This rate spread  
6 ensures more stability for the Company due to the fluctuation in population of  
7 this resort community.

8 Staff's proposal for the commodity rate for the residential/commercial  
9 customers is \$0.93 for each 100 cf of water used and \$0.30 per customer for  
10 fire hydrant maintenance. Staff's Proposed Rates are shown in Tables 14-18.  
11 Note that Staff's recommendation for these rates would be affected by any of  
12 the cost changes anticipated earlier in this Testimony, such as might occur if Al  
13 agreements are approved by the Commission for larger amounts than Staff  
14 included in the rate model that produces the below rates.

1

**Table 14.—Staff Proposed Metered Rates**

Rate Design						
<b>Residential and Commercial Metered Service</b>						Revenue Allocation: <b>77,887</b>
						Allocated to Base Rates: <b>70.00%</b>
						Allocated to Commodity Rates: <b>30.00%</b>
<b>Base Rates</b>						Revenue Allocation: <b>54,521</b>
Meter Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
5/8" and/or 3/4"	73	1.5	110	27.76%	\$ 15,133	\$ <b>17.28</b>
1"	16	2.0	32	8.11%	\$ 4,422	\$ <b>23.03</b>
1 1/2"	31	3.0	93	23.57%	\$ 12,853	\$ <b>34.55</b>
2"	20	5.0	100	25.35%	\$ 13,820	\$ <b>57.58</b>
3"	3	7.0	21	5.32%	\$ 2,902	\$ <b>80.62</b>
4"	3	8.0	24	6.08%	\$ 3,317	\$ <b>92.13</b>
6"	1	15.0	15	3.80%	\$ 2,073	\$ <b>172.75</b>
<b>TOTAL</b>	<b>147</b>		<b>395</b>	<b>100.00%</b>	<b>\$ 54,521</b>	

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**Table 15.—Staff Proposed Flat Rates**

Rate Design						
<b>Residential and Commercial Flat Rate Service</b>						Revenue Allocation: <b>87,462</b>
						Allocated to Base Rates: <b>100.00%</b>
						Allocated to Commodity Rates: <b>0.00%</b>
<b>Base Rates</b>						Revenue Allocation: <b>87,462</b>
Line Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
5/8" and/or 3/4"	256	1.5	384	86.68%	\$ 75,813	\$ <b>24.68</b>
1"	2	2.5	5	1.13%	\$ 987	\$ <b>41.13</b>
1 1/2"		5.0	-	0.00%	\$ -	\$ <b>82.26</b>
2"	9	6.0	54	12.19%	\$ 10,661	\$ <b>98.72</b>
<b>TOTAL</b>	<b>267</b>	<b>18.0</b>	<b>443</b>	<b>100.00%</b>	<b>\$ 87,462</b>	

1 **Table 16. –Staff Proposed Commodity Rate**

<b>Commodity Rate</b>					Revenue Allocation:	<b>23,366</b>
Annual Consumption	2,507,585	cubic feet				
Unit of Measurement	100	cubic feet				
Annual Units of Consumption	25,076	Units				
Commodity Rate:	\$ 0.93181	per unit				

2 **Table 17. Staff Proposed Water Hauler Rate**

<b>Rate Design</b>						
<b>Water Haulers</b>					Revenue Allocation:	<b>1,986</b>
					Allocated to Base Rates:	0.00%
					Allocated to Commodity Rates:	100.00%
<b>Commodity Rate</b>					Revenue Allocation:	<b>1,986</b>
Annual Consumption	213,600	cubic feet				
Unit of Measurement	100	cubic feet				
Annual Units of Consumption	2,136	Units/cfs				
Commodity Rate:	\$ 0.92978	per unit				

3 **Table 18. Staff Proposed Fire Hydrant Rate**

<b>Rate Design</b>						
<b>Fire Hydrants</b>					Revenue Allocation:	<b>1,490</b>
					Allocated to Base Rates:	100.00%
					Allocated to Commodity Rates:	0.00%
<b>Base Rates</b>					Revenue Allocation:	<b>1,490</b>
Meter Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
ALL	414	1.0	414	100.00%	\$ 1,490	\$ 0.30
TOTAL	414		414	100.00%	\$ 1,490	

1 **Q. What are the effects of Staff’s recommendation on the average customer**  
 2 **bill?**

3 A. The effects of Staff’s proposed adjustments on the average customer’s monthly  
 4 bills are shown in Table 19 below:

**Table 19. –Staff Proposed Average Bills and Consumption**

Line Type & Size	Test Year Customers	Test Year Consumption (cf)	AVERAGE BILLS		
			Current Rate	Staff Proposed Rate	Difference (%)
<b>Water -METERED-- Residential/Commercial</b>					
5/8" or 3/4"	73	453,414	\$21.66	\$ 22.10	2.04%
1"	16	219,267	\$32.61	\$ 33.68	3.26%
1 1/2"	31	679,979	\$44.57	\$ 51.58	15.73%
2"	20	839,453	\$68.98	\$ 90.18	30.72%
3"	3	0	\$33.93	\$ 80.62	137.60%
4"	3	314,733	\$132.80	\$ 173.60	30.72%
6"	1	739	\$41.12	\$ 173.33	321.52%
<b>TOTAL</b>	<b>147</b>	<b>2,507,585</b>			
<b>Water - FLAT-- Residential/Commercial</b>					
5/8" or 3/4"	256	flat	\$20.75	\$ 24.68	18.93%
1"	2	flat	\$24.17	\$ 41.13	70.18%
2"	9	flat	\$34.53	\$ 98.72	185.88%
<b>TOTAL</b>	<b>267</b>	<b>flat</b>			
<b>Water -Water Haulers</b>					
\$1.12 each/Per 100 units	2136	213,600	\$ 199.36	\$165.50	-16.98%
<b>TOTAL</b>	<b>\$ 2,392.32</b>	<b>2136</b>			
<b>Fire Hydrant Maintenance</b>					
Per Customer \$.30	414		\$ -	0.3	100
<b>TOTAL</b>	<b>414</b>	<b>0</b>			

1 **Q. Does Staff have further recommendations?**

2 A. Yes. Staff recommends the Commission Order include Conditions that the  
3 Company file a new rate case no later than January, 2021, that a meter be  
4 placed on the artesian spring source, and that the Company be ordered to  
5 meter additional customers and report on its progress annually, all as  
6 discussed above. Staff also recommends that the Commission require the  
7 Company to provide, within 60 days of an Order in this docket, the coupon rate  
8 and maturity of all outstanding debt, in light of the uncertainties and risks  
9 presented by having a substantial part of the Company's debt tied up in a loan  
10 with no written agreement that may involve an affiliated interest. If the  
11 Company fails to comply with this condition, Staff will impute a reasonable  
12 coupon rate and maturity for any outstanding debt.

13 **Q. Does that conclude your testimony?**

14 A. Yes.

CASE: UW 174  
WITNESS: MALIA BROCK

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 101**

**Witness Qualification Statement**

**May 3, 2018**

### **WITNESS QUALIFICATION STATEMENT**

**NAME:** Malia Brock

**EMPLOYER:** PUBLIC UTILITY COMMISSION OF OREGON

**TITLE:** Senior Utility Analyst, Retail Rates and Water Section

**ADDRESS:** 201 High Street SE. Suite 100  
Salem, OR 97301

**EXPERIENCE:** My assignments over the last eight years while at the Oregon Commission have included service quality issues and monitoring, various dockets, rate cases, rulemakings, and lead investigator in the rural call completion issue. I provide telecommunications technical support to the Commissioners, Consumer Services Division, and other staff members. I possess a combined total of 40 years' experience in telecommunications. Prior experience includes team lead and Telecommunications Administrator in Network Operations for Department of Corrections where I was responsible to manage and program Avaya and Nortel systems supporting the telecommunication networks of 21 secure secure environment locations. I was responsible for contract maintenance, telecommunications budget, supervision, service orders, review and supervision of switch maintenance and upgrades. My lead duties included responsibilities for

oversight of the data and telecommunication networks,  
servers and email supporting 4,300 employees in 21 locations.  
Past employment with PNB/US West/Qwest for 25 years add  
telecommunications experience as network technician,  
complex line assigner, assignment, carrier services, and  
customer service.



CASE: UW 174  
WITNESS: MALIA BROCK

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 102**

**Exhibits in Support of Testimony**

**May 3, 2018**

Company Name: Gov't Camp					Staff/102	
Docket No. UW 174					Brock/1	
Test Year: 2016						
					Company Proposed Increase	
					Staff Proposed Increase	
<b>Revenue Requirement</b>					73.64%	
					-1.71%	
<b>REVENUES</b>						
		<b>Test Year-2016</b>	<b>Company Adjustments</b>	<b>Company Proposed Totals</b>	<b>Staff Adjustments to Company Totals</b>	<b>Staff Proposed Totals</b>
460	Unmetered			\$ -		\$ -
461.1	Residential Flat Rate Water Sales	51,415	38,941	\$ 90,356	(2,894)	\$ 87,462
461.2	Commercial Flat Rate Water Sales	16,140	11,787	\$ 27,927	(27,927)	
	Residential Metered Water Sales	11,520	9,499	\$ 21,019	(21,019)	
	Commercial Metered Water Sales	90,365	70,204	\$ 160,569	(82,682)	\$ 77,887
462	Fire Protection Sales (Hydrant Mtc.)	-	2,188	\$ 2,188	(698)	\$ 1,490
465	Hydrant Water Sales (Water Hauling)	2,392	1,839	\$ 4,231	(2,245)	\$ 1,986
466	Water Sales for Resale			\$ -		\$ -
471	Miscellaneous Services	4,562	(4,562)	\$ -	4,562	\$ 4,562
475	Cross Connection Control			\$ -		\$ -
	Other			\$ -		\$ -
				\$ -		\$ -
	<b>Total Revenue</b>	<b>\$ 176,394</b>	<b>\$ 129,896</b>	<b>\$ 306,290</b>	<b>\$ (132,904)</b>	<b>\$ 173,386</b>
<b>Acct. OPERATING EXPENSES</b>						
601	Salaries and Wages - Employees			\$ -	\$ -	\$ -
603	Salaries and Wages - Officers	28,258	28,524	\$ 56,782	(47,182)	\$ 9,600
604	Employee Pension & Benefits	-	24,000	\$ 24,000	(24,000)	\$ -
610	Purchased Water			\$ -	\$ -	\$ -
611	Telephone/Communications	3,171	(1,748)	\$ 1,423	(420)	\$ 1,003
615	Purchased Power	197		\$ 197	\$ -	\$ 197
616	Fuel for Power Production	-	-	\$ -	\$ -	\$ -
617	Other Utilities	-	-	\$ -	\$ -	\$ -
618	Chemical / Treatment Expense	-	-	\$ -	\$ -	\$ -
619	Office Supplies	767	-	\$ 767	-	\$ 767
619.1	Postage	462	-	\$ 462	-	\$ 462
620	O&M Materials/Supplies	6,583	-	\$ 6,583	-	\$ 6,583
621	Repairs to Water Plant	6,171	-	\$ 6,171	-	\$ 6,171
631	Contract Svcs - Engineering	-	-	\$ -	\$ -	\$ -
632	Contract Svcs - Accounting	3,279	-	\$ 3,279	-	\$ 3,279
633	Contract Svcs - Legal	-	1,782	\$ 1,782	-	\$ 1,782
634	Contract Svcs - Management Fees			\$ -	\$ -	\$ -
635	Contract Svcs - Testing	2,310	(1,055)	\$ 1,255	-	\$ 1,255
636	Contract Svcs - Labor	10,133	(9,319)	\$ 814	-	\$ 814
637	Contract Svcs - Billing/Collection	8,198	1,640	\$ 9,838	-	\$ 9,838
638	Contract Svcs - Meter Reading			\$ -	\$ -	\$ -
639	Contract Svcs - Other	48,640	1,319	\$ 49,959	(25,869)	\$ 24,090
641	Rental of Building/Real Property	7,000	15,000	\$ 22,000	(15,000)	\$ 7,000
642	Rental of Equipment	-	-	\$ -	\$ -	\$ -
643	Small Tools	-	-	\$ -	\$ -	\$ -
648	Computer/Electronic Expenses	107	-	\$ 107	-	\$ 107
650	Transportation	2,742	(90)	\$ 2,652	(873)	\$ 1,779
656	Vehicle Insurance	1,322	-	\$ 1,322	(1,322)	\$ -
657	General Liability Insurance	4,044	(978)	\$ 3,066	-	\$ 3,066
658	Workers' Comp Insurance	-	-	\$ -	\$ -	\$ -
659	Insurance - Other			\$ -	\$ -	\$ -
666	Amortz. of Rate Case		6,333	\$ 6,333	-	\$ 6,333
667	Gross Revenue Fee (PUC)	479	40	\$ 519	1	\$ 520
670	Bad Debt Expense	-	-	\$ -	\$ -	\$ -
671	Cross Connection Control Program	150	(75)	\$ 75	-	\$ 75
673	Training and Certification	-	-	\$ -	\$ -	\$ -
674	Consumer Confidence Report	157	-	\$ 157	-	\$ 157
675	Miscellaneous Expense	2,759	(215)	\$ 2,544	(190)	\$ 2,354
OE1	Other Expense 1			\$ -	\$ -	\$ -
OE2	Other Expense 2			\$ -	\$ -	\$ -
OE3	Other Expense 3			\$ -	\$ -	\$ -
OE4	Other Expense 4			\$ -	\$ -	\$ -
OE5	Other Expense 5			\$ -	\$ -	\$ -
	<b>TOTAL OPERATING EXPENSE</b>	<b>\$ 136,929</b>	<b>\$ 65,158</b>	<b>\$ 202,087</b>	<b>\$ (114,855)</b>	<b>\$ 87,232</b>
<b>OTHER REVENUE DEDUCTIONS</b>						
403	Depreciation Expense	23,498		\$ 23,498	(2,262)	\$ 21,236
406	Amort of Plant Acquisition Adjustment			\$ -	\$ -	\$ -
407	Amortization Expense			\$ -	\$ -	\$ -
408.11	Property Tax	9,334	78	\$ 9,412	(1,201)	\$ 8,211
408.12	Payroll Tax	7,742	(2,462)	\$ 5,280	-	\$ 5,280
408.13	Other			\$ -	\$ -	\$ -
409.10	Federal Income Tax			\$ -	7,086	\$ 7,086
409.11	Oregon Income Tax			\$ -	2,384	\$ 2,384
409.13	Extraordinary Items Income Tax			\$ -	\$ -	\$ -
	<b>TOTAL REVENUE DEDUCTIONS</b>	<b>\$ 177,503</b>	<b>\$ 62,774</b>	<b>\$ 240,277</b>	<b>\$ (108,847)</b>	<b>\$ 131,430</b>
	<b>Net Operating Income</b>	<b>\$ (1,109)</b>	<b>\$ 67,122</b>	<b>\$ 66,013</b>	<b>\$ (24,056)</b>	<b>\$ 41,957</b>
<b>UTILITY RATE BASE</b>						
101	Utility Plant in Service	1,051,997		\$ 1,051,997	\$ 1,019,060	\$ 2,071,057
105	Construction Work in Progress			\$ -	\$ -	\$ -
108	- Accumulated Depreciation of Plant	520,939		\$ 520,939	\$ 193,622	\$ 714,561
271	- Contributions in Aid of Construction			\$ -	\$ 1,077,641	\$ 1,077,641
272	+ Accumulated Amortization of CIAC			\$ -	\$ 195,867	\$ 195,867
281	- Accumulated Deferred Income Tax			\$ -	\$ -	\$ -
	- Excess Capacity			\$ -	\$ -	\$ -
	<b>= NET RATE BASE INVESTMENT</b>	<b>\$ 531,058</b>	<b>\$ -</b>	<b>\$ 531,058</b>	<b>\$ (56,336)</b>	<b>\$ 474,722</b>
	Plus: (working capital)					
151	Materials and Supplies Inventory	10,195		\$ 10,195	\$ -	\$ 10,195
	Working Cash (Total Op Exp /12)	11,411	5,430	\$ 16,841	(9,572)	\$ 7,269
	<b>TOTAL RATE BASE</b>	<b>\$ 552,664</b>	<b>\$ 5,430</b>	<b>\$ 558,094</b>	<b>\$ (65,908)</b>	<b>\$ 492,186</b>
	<b>Rate of Return</b>	<b>-0.20%</b>		<b>11.83%</b>		<b>8.52%</b>

CASE: UW 174  
WITNESS: MALIA BROCK

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 103**

**Exhibits in Support of Testimony**

**May 3, 2018**



CASE: UW 174  
WITNESS: MALIA BROCK

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 104**

**Exhibits in Support of Testimony**

**May 3, 2018**

Invested Plant											
Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	2016	Accum. Deprec. Ending 2016	Remaining Plant
301	Organization	Various	-	-	-	-	-	Various	-	-	-
302	Franchises	Various	-	-	-	-	-	Various	-	-	-
303	Land and Land Rights	Various	-	-	-	-	-	Various	-	-	-
304	Structures and Improvements	Various	15,038	-	15,038	35	430	Various	418	6,311	8,727
305	Collecting and Impounding Reservoirs	Various	-	-	-	50	-	Various	-	-	-
306	Lake, River and Other Intakes	Various	-	-	-	35	-	Various	-	-	-
307	Wells and Springs	Various	-	-	-	25	-	Various	-	-	-
308	Infiltration Galleries and Tunnels	Various	-	-	-	25	-	Various	-	-	-
309	Supply Main	Various	330,691	-	330,691	50	6,614	Various	6,215	232,740	97,951
310	Power Generation Equipment	Various	-	-	-	30	-	Various	-	-	-
311	Pumping Equipment	Various	-	-	-	20	-	Various	-	-	-
320	Water Treatment Equipment	Various	582	-	582	20	29	Various	-	582	-
330	Distribution Reservoir and Standpipes	Various	367,164	-	367,164	50	7,343	Various	7,340	128,388	238,776
331	Transmission and Distribution Mains	Various	116,230	-	116,230	50	2,325	Various	2,311	44,814	71,416
333	Services	Various	61,105	-	61,105	30	2,037	Various	1,763	29,465	31,640
334	Meters and Meter Installations	Various	39,892	-	39,892	20	1,995	Various	1,942	23,122	16,770
335	Hydrants	Various	13,559	-	13,559	40	339	Various	268	7,575	5,984
336	Cross Connection Control	Various	-	-	-	15	-	Various	-	-	-
339	Other Plant	Various	-	-	-	30	-	Various	-	-	-
340	Office Furniture and Equipment	Various	2,850	-	2,850	20	143	Various	27	2,570	280
341	Transportation Equipment	Various	12,021	-	12,021	7	1,676	Various	-	12,021	-
343	Tools, Shop, and Garage Equipment	Various	7,347	-	7,347	15	490	Various	361	5,893	1,454
344	Laboratory Equipment	Various	-	-	-	15	-	Various	-	-	-
345	Power Operated Equipment	Various	174	-	174	10	17	Various	-	174	-
346	Communication Equipment	Various	-	-	-	10	-	Various	-	-	-
347	Electronic/Computer Equipment	Various	1,246	-	1,246	5	249	Various	-	1,246	-
348	Miscellaneous Equipment	Various	25,517	-	25,517	10	2,552	Various	591	23,792	1,725
<b>TOTALS</b>		Various	<b>993,416</b>	<b>-</b>	<b>993,416</b>	<b>Various</b>	<b>26,237</b>	<b>Various</b>	<b>21,236</b>	<b>518,694</b>	<b>474,722</b>

Original Plant In Service Cost	993,416
Less: Excess Capacity	-
"Used & Useful" Plant	993,416
Less Accum Depreciation	518,694
<b>NET PLANT</b>	<b>474,722</b>

<b>Depreciation Expense</b>	<b>21,236</b>
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**Plant Deleted:**

Tyrolean Meadows Overruns True Up	Dec 2017	14,419		14,419	50	288	Dec 2067
ADD: Allowance for Instaling Meters	Oct 2011	49,500		49,500	20	2,475	Sep 2031
CWIP-Line Replacement	Jan 2018	5,441		5,441	50	109	Dec 2067

**Plant Added:**

DR 37--100,000-GAL WOOD TANK corrected original entry of \$48,475 to \$59,249.22; original install date unchanged 6-1-1980	Original Amount June 1980		Corrected Amount				
	\$48,475		59,249		Difference	10,774	

CIAC Plant												
Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	Before 1985	2016	Accum. Deprec. Ending 2016	Remaining Plant
301	Organization	Various	-	-	-	-	-	Various	-	-	-	-
302	Franchises	Various	-	-	-	-	-	Various	-	-	-	-
303	Land and Land Rights	Various	-	-	-	-	-	Various	-	-	-	-
304	Structures and Improvements	Various	-	-	-	35	-	Various	-	-	-	-
305	Collecting and Impounding Reservoirs	Various	-	-	-	50	-	Various	-	-	-	-
306	Lake, River and Other Intakes	Various	-	-	-	35	-	Various	-	-	-	-
307	Wells and Springs	Various	-	-	-	25	-	Various	-	-	-	-
308	Infiltration Galleries and Tunnels	Various	-	-	-	25	-	Various	-	-	-	-
309	Supply Main	Various	-	-	-	50	-	Various	-	-	-	-
310	Power Generation Equipment	Various	-	-	-	30	-	Various	-	-	-	-
311	Pumping Equipment	Various	-	-	-	20	-	Various	-	-	-	-
320	Water Treatment Equipment	Various	-	-	-	20	-	Various	-	-	-	-
330	Distribution Reservoir and Standpipes	Various	-	-	-	50	-	Various	-	-	-	-
331	Transmission and Distribution Mains	Various	1,077,641	-	1,077,641	50	21,553	Various	-	21,553	195,867	881,774
333	Services	Various	-	-	-	30	-	Various	-	-	-	-
334	Meters and Meter Installations	Various	-	-	-	20	-	Various	-	-	-	-
335	Hydrants	Various	-	-	-	40	-	Various	-	-	-	-
336	Cross Connection Control	Various	-	-	-	15	-	Various	-	-	-	-
339	Other Plant	Various	-	-	-	30	-	Various	-	-	-	-
340	Office Furniture and Equipment	Various	-	-	-	20	-	Various	-	-	-	-
341	Transportation Equipment	Various	-	-	-	7	-	Various	-	-	-	-
343	Tools, Shop, and Garage Equipment	Various	-	-	-	15	-	Various	-	-	-	-
344	Laboratory Equipment	Various	-	-	-	15	-	Various	-	-	-	-
345	Power Operated Equipment	Various	-	-	-	10	-	Various	-	-	-	-
346	Communication Equipment	Various	-	-	-	10	-	Various	-	-	-	-
347	Electronic/Computer Equipment	Various	-	-	-	5	-	Various	-	-	-	-
348	Miscellaneous Equipment	Various	-	-	-	10	-	Various	-	-	-	-
<b>TOTALS</b>		Various	1,077,641	-	1,077,641	Various	21,553	Various	-	21,553	195,867	881,774

Original Plant In Service Cost	1,077,641
Less: Excess Capacity	-
"Used & Useful" Plant	1,077,641
Less Accum Amort of CIAC	195,867
<b>NET PLANT</b>	<b>881,774</b>

Depreciation Expense	21,553
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CASE: UW 174  
WITNESS: MALIA BROCK

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 105**

**Exhibits in Support of Testimony**

**May 3, 2018**



**DR 68**

**DR 19 requested whether the issue regarding customers identified in Condition 11 of the Stipulated Agreement in UW 145 that were billed for a smaller than actual sized meters had been corrected. The Company's response indicates that the Master Meter is sized at 1.5 inches and the customers that are behind the Master Meter are billed a 3/4 inch meter size due to their each having a 3/4 inch line size. In supplemental DR 67:**

- a. Please identify all customers by name that are currently being billed rates as a 3/4 inch meter size that do not have individual meters.**

RESPONSE:

Objection. DR 68 is ambiguous and vague as Staff appears to be confusing individual units under a master meter with customers. The master meter customer is the customer of record. Not waiving the foregoing objection, the Company responds that the master meter customer does not provide the Company with names for the individual units, nor is that information necessary to provide water service.

- b. Please provide the number of customers currently billed for a meter and metered usage that do not have their own individual meters, including all customers who are served by a Master meter that also serves other customers.**

RESPONSE:

Objection. Sub-part (b) of DR 68 is vague and indicates a lack of understanding as to how master meter accounts function. Not waiving this objection, the Company responds that there are 304 individual units served under master meter accounts. The individual units do not have individual meters and are not billed for individual metered usage. The Company charges the master meter customer a base rate for the size of the line going to each individual unit under the master meter account. The total consumption is also billed to the master meter customer. Consumption is measured through the master meter.

- c. Please comprehensively explain the methodology employed to bill the customers referred to above in DR 67(a) and DR 67(b), including the methodology used to calculate their usage.**

RESPONSE:

Objection. Sub-part (c) is vague and confusing. Staff's DR 67(a) sought information about the Company's intentions to complete its metering program and Staff's DR 67(b) requests information about how Hoodland Fire Station, Stockton, and Smith were determined to be low volume customers. Not waiving this objection and for the purpose of efficiency the Company assumes this sub-part contains a typographical error and intended to request information about DR 68(a) and DR 68(b).

If staff is asking about DR 68(a) and (b), each master meter customer is billed at the tariffed rate for the size of line to each individual unit under the master meter account. Usage is calculated off of the master meter.

If staff is asking about customers referenced in DR 67(a) and DR 67(b), they are billed as flat-rate customers at the tariffed rate for the size of the line serving the customer. Flat rate customers' usage is not calculated.

**d. Please explain whether and why the customers referred to above in DR 67(b) are billed individually as flat-rate customers.**

RESPONSE:

Objection. Sub-part (d) is vague and confusing. Staff's DR 67(b) requests information about how Hoodland Fire Station, Stockton, and Smith were determined to be low volume customers. Not waiving this objection and for the purpose of efficiency the Company assumes this sub-part contains a typographical error and intended to request information about DR 68(b).

If staff is asking about DR 68(b), the units under a master meter, then the answer is that they are not billed individually as flat rate customers.

If staff is asking about customers referenced in 67(b), they are flat rate customers because they were classified as flat-rate customers in UW 145, and they are not metered.

**e. Please explain whether and why the Master Meter that is in service for the customers referred to above in DR 67(b) is charged for the entire water service at the rate for 1.5 inch metered service.**

RESPONSE:

Objection. Sub-part (e) is vague and confusing. Staff's DR 67(b) requests information about how Hoodland Fire Station, Stockton, and Smith were determined to be low volume customers. Not waiving this objection and for the purpose of efficiency the Company assumes this sub-part contains a typographical error and intended to request information about DR 68(b). None of the individual units referred to in DR 68(b) are individually billed or deemed the master meter customer. The Company charges the master meter customer a base rate for the size of the line going to each individual unit under the master meter account. How the master meter customer charges the individual unit served is outside the Company's purview.

**DR 1**

**Please provide billing data to support Government Camp Water Company Inc.'s (Government Camp) sales operating revenue for the 2016 test year. In that billing data, please provide 1) the customer names, 2) the line or meter size, 3) the usage for metered customers, 4) the amount billed for usage, 5) the amount billed for the base charge and 6) the amount billed for other charges for each of the amounts billed to each customer account for each of the four quarters billed in 2016.**

**RESPONSE:**

Billing data provided in separate attachment as Data Response 1 Attachment.

Table 9 Excerpted from DR 1

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/12/2016	12-6359	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
03/28/2016	12-6726	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
04/01/2016	12-6511	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
05/24/2016	12-6728	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
05/27/2016	12-6729	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
06/23/2016	12-6727	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
07/20/2016	12-7095	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
08/01/2016	12-7096	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/12/2016	12-7099	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/14/2016	12-7098	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
10/18/2016	12-7470	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
10/20/2016	12-5995	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
11/28/2016	12-5997	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
11/28/2016	12-7471	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/03/2016	12-5999	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-5998	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7468	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7472	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00

Table 10, Excerpted from DR 1

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/01/2016	12-6279	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	104.64
01/01/2016	12-6306	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	89.43
02/08/2016	12-6360	MH	Quarterly base rate	461.7 - Metered Hydrant Sales	141 - Accounts Receivable	1.00	2,392.43
04/01/2016	12-6649	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	104.64
04/01/2016	12-6676	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	89.43
07/01/2016	12-7016	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	104.64
07/01/2016	12-7044	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	89.43
10/01/2016	12-7390	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	104.64
10/01/2016	12-7418	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00	89.43

**DR 80**

With respect to the billing data provided in response to DR 1, in supplemental DR 80, please explain the difference between a MH 4" metered customer, a MH 2" metered customer, a CM 2" metered customer and a CM 4" metered customer. (In this and the following DRs, please see the below billing data excerpted from the Company's response to DR 1 for an example of the data referred to in this data request).

02/08/2016	12-6360	K & E Excavating, Inc	MH	Quarterly	461.7 - Metered Hydrant Sales	1.00	2,392.43
01/01/2016	12-6279	Skibowl E 361	MH 4"	Quarterly	461.2 - Commercial Metered	1.00	104.64
04/01/2016	12-6649	Skibowl E 361	MH 4"	Quarterly	461.2 - Commercial Metered	1.00	104.64
07/01/2016	12-7016	Skibowl E 361	MH 4"	Quarterly	461.2 - Commercial Metered	1.00	104.64
10/01/2016	12-7390	Skibowl E 361	MH 4"	Quarterly	461.2 - Commercial Metered	1.00	104.64
01/01/2016	12-6306	Summit Ski Area	3¢ MH 2"	Quarterly	461.2 - Commercial Metered	1.00	89.43
04/01/2016	12-6676	Summit Ski Area	3¢ MH 2"	Quarterly	461.2 - Commercial Metered	1.00	89.43
07/01/2016	12-7044	Summit Ski Area	3¢ MH 2"	Quarterly	461.2 - Commercial Metered	1.00	89.43
10/01/2016	12-7418	Summit Ski Area	3¢ MH 2"	Quarterly	461.2 - Commercial Metered	1.00	89.43

**RESPONSE:**

MH means metered hydrant. Therefore, a MH 4" is a 4" metered hydrant. A MH 2" is a 2" metered hydrant. All MH customers are billed when the Ski Area shuts down following winter season.

- 1) K & E is a water hauler that draws water from a metered hydrant.
- 2) Summit Ski Area draws its water from a metered hydrant.
- 3) Skibowl East originally was classified like Summit Ski Area as a Metered Hydrant customer. A 4" meter was installed, and it has been reclassified as a commercial metered customer.

CM 2" and CM 4" are commercial metered customers with 2" and 4" meters, respectively.

**DR 82**

With respect to the billing data provided in DR 1, in supplemental DR 82, please explain the consumption billed in the 2016 test year to customer Best Western Mt Hood Inn, 006. In your response, please confirm whether this customer was billed \$2.46 for consumption for the entire year in the 2016 test year.

01/01/2016	12-6016	Best Western Mt Hood Inn 006	CM 6"	Quarterly 461.2 · Cor 141 · Accounts Receivable	1.00	121.29
04/01/2016	12-6384	Best Western Mt Hood Inn 006	CM 6"	Quarterly 461.2 · Cor 141 · Accounts Receivable	1.00	121.29
07/01/2016	12-6751	Best Western Mt Hood Inn 006	CM 6"	Quarterly 461.2 · Cor 141 · Accounts Receivable	1.00	121.29
10/01/2016	12-7122	Best Western Mt Hood Inn 006	CM 6"	Quarterly 461.2 · Cor 141 · Accounts Receivable	1.00	121.29
10/01/2016	12-7122	Best Western Mt Hood Inn 006	C. Cf's use Water con	461.2 · Cor 141 · Accounts Receivable	219.25	2.46

**RESPONSE:**

Yes, \$2.46 is the correct amount for 2016 consumption for the quarter. The Company provides the Best Western Mt Hood Inn a connection to the water system for fire suppression purposes only. Consumption would increase only in event of a fire.

**DR 91**

**With respect to the billing data provided in DR 1, in supplemental DR 91, please explain why Summit Ski Area 367.1 is billed for a MH 2 inch meter base rate but has not been billed for consumption.**

01/01/2016 12-6306	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	1.00	89.43
04/01/2016 12-6676	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	1.00	89.43
04/18/2016 FC 1579	Summit Ski Area 367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	3.22
07/01/2016 12-7044	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	1.00	89.43
07/18/2016 FC 1581	Summit Ski Area 367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	4.89
07/18/2016 FC 1642	Summit Ski Area 367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	4.98
10/01/2016 12-7418	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	1.00	89.43
10/18/2016 FC 1717	Summit Ski Area 367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	6.67
04/18/2016 FC 1566	Summit Ski Area 367	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	22.00
07/18/2016 FC 1643	Summit Ski Area 367	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	22.40
10/18/2016 FC 1718	Summit Ski Area 367	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	0.40

**RESPONSE:**

Charlie Wessinger is the "customer of record." In 2014, Mr. Wessinger turned over the management of Summit Ski Area to Mt. Hood Management. Mt. Hood Management ("MHM") paid the water bills.

The Summit Ski Area consumption bill was sent to the MHM in 2016. When payment was not received, Mr. Wessinger was rebilled for the 2016 consumption. The Company received payment from Mr. Wessinger in 2017. Since the Company bills at the end of the ski season (depending on the snow pack), a rebilled charge can be received in the next year.



**DR 87**

In the billing data provided in DR 1, in supplemental DR 87, Skibowl E 361 is billed for a MH 4 inch meter at \$104.64 for each of the four quarters in 2016. Consumption for this account was billed twice on the same day, 3-12-2016, using the same dollar amount and consumption; \$1,422.23 for 1270 cubic feet. In your response, please explain why this same amount was billed twice on the same day and explain why this consumption was not billed for each quarter in the same manner as other customer billing data.

03/12/2016 12-6361	Skibowl E 361	C. CP's used	Water consumption for the quarte	461.2 - Commercial Metered	126,985.00	1,422.23
03/12/2016 12-6361	Skibowl E 361	C. CP's used	Water consumption for the quarte	461.2 - Commercial Metered	126,985.00	1,422.23
01/01/2016 12-6279	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	1.00	104.64
01/18/2016 FC 1485	Skibowl E 361	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	3.84
04/01/2016 12-6649	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	1.00	104.64
04/18/2016 FC 1556	Skibowl E 361	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	1.95
07/01/2016 12-7016	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	1.00	104.64
10/01/2016 12-7390	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	1.00	104.64
10/18/2016 FC 1708	Skibowl E 361	Late Pmt Penalty	1.8% on Overdue Balance	471.1 - Finance Charges	1.00	1.92

**RESPONSE:**

Originally, Skibowl E was a winter only customer. Winter only customers were billed consumption at the end of the ski season to ensure that they had funds to pay for their water consumption. During this time period in question, Skibowl E started irrigating in the summer as well; thus, Skibowl E was reclassified as a year-round consumption customer. As a year-round consumption customer, Skibowl E's meter would be read each July and consumption would be billed quarterly.

There were two billing errors on Skibowl E's account on the part of the bookkeeper/billing company. They are both related to the transition of Skibowl E from a winter consumption only customer to a year-round consumption customer. The first error was caught by Ms. Bekins in March 2016. She discovered that Skibowl E had not been billed quarterly (on 10/1/2015 and 1/1/2016) as it should have. To correct this oversight, on March 12, 2016, the Company billed Skibowl E two charges of \$1,422.23 (the two missing billings). Skibowl E paid the two bills on April 9, 2016 with a payment of \$2,844.46. This corrected the first error.

The second billing error was due to a mix up in the billing by the bookkeeper for the last two quarterly billings. The bookkeeper missed billing Skibowl E for consumption for the last two quarters, which should have been billed on 4/1/2016 and 7/1/2016. This error was discovered by Ms. Bekins as she researched staff's DR 87. It serves as a good example of why Ms. Bekins full-time management and oversight of the Company is critical.

**DR 93**

**Please provide the actual meter reading records to support the billing data provided in DR 1.**

RESPONSE:

See DR 93 Response Attachment.

Attachment, Page 1

**COLLINS LAKE CHALET PROJECT Accts 311 & 311.1**

TYPE	Bldg #	CF/Gal	Meters Read	Meters Read	2016 Total
			July 15 2015	July 15 2016	Cons in CF
CM	A	CF	264910	302250	37,340
CM	B	CF	164070	174670	10,600
CM	C	CF	284220	311580	27,360
CM	D	CF	121460	127910	6,450
CM	E	CF	216420	235580	19,160
CM	F	CF	328720	353120	24,400
CM	G	CF	203240	219130	15,890
CM	H	CF	171430	199470	28,040
CM	I	CF	85790	96790	11,000
CM	J	CF	191690	209280	17,590
CM	K	CF	178050	206490	28,440
CM	L	CF	133160	147300	14,140
CM	M	CF	100980	130230	29,250
CM	N	CF	173510	190050	16,540
CM	O	CF	179670	199590	19,920
CM	P	CF	136740	152820	16,080
CM	Q	CF	85990	104350	18,360
CM	R	CF	16250	20830	4,580
CM	S	CF	110530	120910	10,380
CM	T	CF	81750	87900	6,150
CM	U	CF	25710	26280	570
CM	V	CF	85340	94130	8,790
CM	W	CF	26531	29790	3,259
CM	X	CF	268250	301120	32,870

407,159.00 Total Cons CF 2016  
101,789.75 Cons/Qtr beginning Q4 2016

**COLLINS LAKE CHALET PROJECT POOL ACCT 311.2**

CM	ClbHse	CF	152890	198200	201,870
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Total Cons CF 2016  
Cons/Qtr Billed  
Oct 1, 2016

50467.5

DR 93 Continued, Attachment page 2

Alpine Crest

Act #	Name/Address	Meter Size	CF/Gal	Meter Number	2015	2016	2016		
					Jul-15	Jul-15	TOT CONS		
320	Beighley 89989 Morrison Ln	3/4"	CF	48932629	41586	45487	3,901		
358	Bersaas 89722 Morrison Ln	3/4"	CF	49054712	15105	16323	1,218		
161	Godon 89685 Morrison Ln	3/4"	CF	19228472	6802	8761	1,959		
339	Margreaves 89790 Morrison Ln	3/4"	CF	49054708	21167	28462	7,295		
317	Harris 89988 Morrison Ln	3/4"	CF	82058161	30279	32227	1,948		
318	Johnson 89731 Morrison Ln	3/4"	CF	18238629	13185	19305	6,120		
324	Kamikawa 30900 Marie St	3/4"	CF	49054709	50876	55769	4,893		
332	Leitgeb 89848 Morrison Ln	3/4"	CF	48932627	42215	45291	3,076		
314	Pruder 90014 Morrison Ln	3/4"	CF	80674124	7332	8205	873		
kam	Reardon 89598 Morrison Ln	3/4"	CF	76632487	8100	10996	2,896		
349	Stanton 89676 Morrison Ln	3/4"	CF	81340319	9138	9952	814		
328	Strek 90070 Morrison Ln	3/4"	GAL	89253683	22760	27070	576		
368	Tietz 89966 E Morrison	3/4"	CF	92696900	2702	3177	475		
321	Troyer 89799 Morrison Ln	3/4"	CF	79534658	35236	40142	4,906		
251	Walsh 89614 Morrison Ln	3/4"	CF	48932630	12991	13343	352		
319	Wong 30916 Marie St	3/4"	CF	79534654	10314	11176	862		
							<b>42,164</b>	<b>Total Cons CF 2016</b>	

Man Town 2016

C/R	ACCT#	Name/Address	MTR #	Size	C/G	Jul-15	July 2016	TOT CONS 2016	TOT CF 2016
CM	152	Abde, Collette 30165 Blossom	48932632	1"	CF	36774	38276	1,502	1,502
RM	263	Abel 31126 E Multorpor Dr	652	3/4"	CF			0	0
CM	331	Ackerson 30765 E Meldrum	80674125	3/4"	CF	83473	114167	30,694	30,694
RM	184	Alexander 30392 E WyEast	81458998	3/4"				0	0
RM	341	Allred 31096 Muly Dr (SW #4 fnt)	60402820	2"	CF	8370	9660	1,290	1,290
CM	302	ASB Vent/Berke 89355 E Steel Ln	52213221	1"	CF	43648	44381	733	733
CM	5	Barlow Pass West Condos 30395 E WyEast	60820249	1 1/2"	CF	9650	21380	11,730	11,730
CM	177	Barton 30770 E Meldrum	no # avail	3/4"	CF	8019	8831	812	812
RM	356	Berman 87317 E McCartney Ct	52826338	3/4"	CF	355	364	9	9
CM	17	Bemudez E Darr Rd	81459001	3/4"	CF			0	0
CM	6	Best Western Mt. Hood Inn -ByPass	no # avail	3/4"	CF	2	140	138	138
CM	6	Best Western Mt. Hood Inn -Main	no # avail	6"	CF	99998506	99999245	739	739
CM	313	Big Blue Capital Falcon 87287 GCLp	76632485	3/4"	CF	148924	166425	17,501	17,501
CM	assign #	Bissonette 30540 E Darr Rd	81340318	3/4"	CF	2203	2453	250	250
CM	8	Boy Scouts	60638388	2"	CF	5020	10990	5,970	5,970
CM	32	Branson 88446 Mult. Dr	48398510	3/4"	CF	207922	212080	4,158	4,158
CM	9	Bridge Duplex Steel St	77874323	1"	CF	207	1537	1,330	1,330
CM	160	Campbell 80703 E Lige	93490860	3/4"	CF	13590	17704	4,114	4,114
100	100	Carrier 30467 E. Blossom	93490861	3/4"	CF	27833	34278	6,445	6,445
CM	10	Cascade Ski Club	60209133	2"	Gal	2969800	3096700	126,900	16,965
CM	12	Charlie's Mt. View 88462 G C Lp	52864429	1"	CF	22490	57212	34,722	34,722

DR 93 Continued, Attachment page 3: Man Town, 2016

C/R	ACCT#	Name/Address	MTR #	Size	C/G	Jul-15	July 2016	TOT CONS 2016	TOT CF 2016
RM	19	Cordan 87324 E McCartney Ct	92896899	3/4"	CF	1722	2570	848	848
CM	3 accts	Dean Jondahl Patterson Yodel	17581626	1"	Gal	7175600	7279900	104,300	13,944
CM	258	Edelweiss HOA	no # avail	1 1/2"	Gal	4483900	4746900	263,000	35,160
RM	22	Fritch - 30505 E Blossom Trail	21459000	3/4"	CF			0	0
RM	172.1	Gaither 89845 E Little Trail	92896901	3/4"	CF	3876	5291	1,415	1,415
RM	329	Glass 30930 E Tyrolean Drive	no # avail	1 1/2"	CF	6150	7780	1,630	1,630
CM	tbd	Golden Poles CONST MTR	81244247	2"	CF		1741.	1,741	1,741
CM	338	Govy General 30521 Meldrum Need Key	60390740	2"	CF	261030	306720	45,690	45,690
CM	347.1	Grand Lodge Club house	no number	1"	CF	87015	100237	13,222	13,222
CM	347	Grand Lodge North (N) MTR 1 (low)	181208	3/4"	CF	369871	456772	86,901	86,901
CM	347	Grand Lodge North (S) MTR 2 (high flow)	70181208	3"	CF	160	160	0	0
CM	347.2	Grand Lodge South (E) MTR 2 (high flow)	70168553	3"	CF	940	940	0	0
CM	347.2	Grand Lodge South (W) MTR 1 (low)	168553	3/4"	CF	360159	432648	72,489	72,489
CM	97	Guettler/Zuber 89116 E G.C. Loop	87691790	3/4"	CF	64408	75834	11,426	11,426
CM	NA	Hill Trails Mix 30410 Blossom	96118260	3/4"	Gal	1299780	1330660	4,128	552
CF	147	Hougen 30464 E Blossom Tr	none yet	3/4"	CF			0	0
CM	279	Hucks Motel High	no number	4"	CF	3490	5230	1,740	1,740
CM	279	Hucks Motel Low (big number)	82978763	4"	CF	551944	589827	37,883	37,883
CM	98	Huck's Restaurant 88611 G.C. Lp	60660998	2"	CF	587580	700540	112,960	112,960
RM	308	Jacobsen/Fuller 89150 Yodel	48702433	1"	CF	89603	113817	24,214	24,214
RM	286	Jenson- 89808 E Lige Ln	48113633	1"	Gal	738590	769440	30,850	4,124
CM	46	Johnson 89623 E Little Trail	7906242	3/4"	CF		1095	1,095	1,095
RM	335	Kelly 31094 Mult Dr (NE #2 rear)	60418696	2"	CF	43820	44120	300	300
RM	150	Kleeblev 30750 E Meldrum (parish)	10076061	3/4"	CF	3715	4674	959	959
CM	59	Kropacek Glaciers Bistro	52519762	1"	CF	43247	57628	14,379	14,379
RM	362	Lampi 88405 Mult. Dr.	18349067	1 1/2"	CF	71500	83230	11,730	11,730
CM	242	Landauer 30397 E Blossom Tr	93490859	3/4"	CF	14356	19887	5,531	5,531
CM	280	Lettunich, Michael 30395 Blossom Tr	84197173	3/4"	CF	49261	56492	7,231	7,231
CM	24	Little Trail Lodge 89015 E Little Trail	60228874	2"	Gal	1135000	1301000	166,000	22,193
CM	328	Logais/Tipi Mato 89685 E Little Tr	80674130	3/4"	CF	33448	36659	3,211	3,211
CM	307	Lynott/Parsons North 30100 Blossom	81340325	3/4"	CF	64645	81969	17,324	17,324
CM	307	Lynott/Parsons South 30100 Blossom	48578976	1"	CF	142857	147896	5,039	5,039
CM	164	Mazama Lodge	49291936	1"	CF	216988	247692	30,704	30,704
CM	7	McLean 89110 Govt Cp Lp	87567002	3/4"	Gal	187130	242030	54,900	7,340
CM	170	Mills 89012 Yodel	90433042	3/4"	CF	20428	25112	4,684	4,684
CM	114	Morse, C & D 30225 E Blossom Trail	92946540	3/4"	CF	3655	5044	1,389	1,389
CM	250	Mt Hood Resort Lodging- Ingersoll - 89048 E Little Trl (4plex)	60820245	1 1/2"	CF	21320	31800	10,480	10,480
CM	250.1	Mt Hood Resort Lodging Ingersoll 30544 E. Olive	98818291	2"	Gal	3981700	4234900	253,200	33,850
CM	183	Mt. Hood Academy 88153 GC Lp	60228877	2"	Gal	1984900	2039000	54,100	7,233
CM	86	Mt. Hood Holding Mult. Drive (Old Saxe)	660365079	2"	CF	251720	301430	49,710	49,710
CM	306	Mt. Hood Museum 88900 E G.C. Loop	48994670	1"	CF	20665	29858	9,193	9,193
RM	312	Mt. Hood Ventures 30032 Blossom	48994672	1"	CF	177726	178210	484	484
CM	363	Multopor Lodge at Skibow E	60725916	2"	CF	238980	312760	73,780	73,780
RM	344	Nantz 31098 Mult Dr (SE #3 rear)	18359647	2"	CF	7960	9180	1,220	1,220
CM	34	Neth - 89055 E G.C. Loop (duplex)	60820247	1 1/2"	CF	17440	17660	220	220
CM	71	Nogarie Round Mtn Loop	92696902	3/4"	CF	9749	14619	4,870	4,870

DR 93 Continued, Attachment page 4: Man Town, 2016

C/R	ACCT#	Name/Address	MTR #	Size	G/G	Jul-15	July 2016	TOT CONS 2016	TOT CF 2016
CM	249	ODOT Maint. Bldg US 26	60202914	2"	Gal	2162400	2308700	146,300	19,559
CM	35	OTE Rest Stop US 26	60368824	2"	CF	2090510	2288590	198,080	198,080
CM	37	Palmer Lodge 88786 G.C. Loop	60194726	2"	Gal	3833910	4132900	298,990	39,972
CM	214	Pamelee 30700 E MELDRUM ST	67222037	3/4"	CF	9514	13194	3,680	3,680
RM	23	Parish - 30280 E Camp Creek Trail	81294937	3/4"	CF			0	0
CM	25	Payne (Left) 30493 Blossom	45666322	3/4"	Gal	845550	884340	38,790	5,186
CM	126	Perodin 88875 E Rnd Mtn Lp	67222042	3/4"	CF	4447	9988	5,551	5,551
RM	tbid	Quarum - McCartney Ct New Const		3"	CF			0	0
RM	348	Rathe/Moeschler 90053 Little Trail	84197174	3/4"	CF	20717	25228	4,511	4,511
CM	38	Ratskeller G.C. Lp	19019939	1"	CF	789885	845840	55,955	55,955
CM	162	Ravi/Putnam - 30960 E Multorpor Dr	93581174	3/4"	CF	39640	53411	13,771	13,771
CM	60	Ravi/Putnam - 88567 E Frontage Rd	93581182	3/4"	CF	18906	26381	7,475	7,475
CM	39	Reed College - 30545 E Mucoy St	935811175	3/4"	CF	12939	20171	7,232	7,232
RM	16	Rice 30546 E Darr Rd	79847303	3/4"	CF		0	0	0
CM	265	Rudi - Casa Cuevo 30380 E WyEast	79847305	3/4"	CF		3	3	3
RM	351	Ryan 30690 Montgomery New HS	85451879	3/4"	CF	16400	18348	1,948	1,948
CM	232	Sandler - 89200 E Little Trail	81340320	3/4"	CF	29893	35311	5,418	5,418
RM	156	Scroggins 87300 E McCartney	67222039	3/4"	CF	729	744	15	15
CM	57	Ski Patrol - Govt. Camp Loop	3.272E+09	1"	GAL	70420	107810	37,390	4,999
CM	361	Skibowl East Snow Making	70249091	4"	CF	1305720	1580830	275,110	275,110
CM	157	Skowhede 30460 E Blossom Tr	93490862	3/4"	CF	16959	26098	9,139	9,139
RM	tbid	Slavin WyEast Trl	67357190	3/4"	CF		35	35	35
RM	355	Soot - 8790 E Round Mtn Loop	81458887	3/4"	CF			0	0
RM	336	Sprunk 31092 Mult Dr (NW #1 fnt)	60418700	2"	CF	18630	23500	4,870	4,870
RM	330	Strub, M & S 30293 Wy'East	78252142	3/4"	CF	47171	47171	0	0
CM	129	Summit Apts., G.C. Loop E	95621736	2"	CF	2736580	2818900	82,320	82,320
CM	245	Summit Chevron G.C. Loop N of Station	76632488	3/4"	CF	83445	88979	5,534	5,534
CM	55	Summit Inn North G.C. Loop (BLDG)	60390743	2"	CF	145440	159820	14,380	14,380
CM	55	Summit Inn West G.C. Loop (BLDG.)	49291937	1"	CF	32449	37172	4,723	4,723
CM	340	Thompson - 90158 E Lige Ln	81340324	3/4"	CF	31474	38067	6,593	6,593
CM	304	Tichy(Martin) 89481 E Steel Ln	81458999	3/4"	CF	52532	66730	14,198	14,198
CM	4	Tom Arp - 30372 E WyEast	67357189	3/4"	CF	249	2895	2,646	2,646
CM	56	Trails Club	18359645	2"	CF	29920	137290	107,370	107,370
CM	3	True/ O'Brien 30515 Blossom	49054722	3/4"	CF	108359	113834	5,275	5,275
CM	125	Turpack 30481 Blossom Tr. (Right)	45666327	3/4"	Gal	799910	864250	64,340	8,602
CM	366	Valls 30128 Blossom	84197176	3/4"	CF	11894	13727	1,833	1,833
RM	20	Wayne Allen 89272 E Lige Ln	93874686	3/4"	CF	2413	4578	2,165	2,165
RM	360	White-Bar 89201 E. Little Trail	90257736	3/4"	CF	23584	30166	6,602	6,602
CM	237	Wilcox - 89107 E Little Tr	93581183	3/4"	CF	13965	16418	2,453	2,453
								1,856,392	Total Cons CF 2016

**DR 58**

**DR 1 requested Government Camp Water Company Inc. (Government Camp or Company) provide the following information:**

***“Please provide billing data to support Government Camp’s sales operating revenue for the 2016 test year. In that billing data, please provide 1) the customer names, 2) the line or meter size, 3) the usage for metered customers, 4) the amount billed for usage, 5) the amount billed for the base charge and 6) the amount billed for other charges for each of the amounts billed to each customer account for each of the four quarters billed in 2016.”***

**In supplemental DR 58 to DR 1, please provide a separate sortable excel spreadsheet that contains all the billing information *for all metered customers* for all quarters in 2016. The data in this spreadsheet should be sortable and broken out by 1) the customer names, 2) the meter size for each customer, and the 3) usage billed to same-sized metered customers. Separate worksheets should be provided for a) the 5/8" & 3/4" combined meter customers, b) the 1" meter customers, c) the 1.5" inch meter customers, d) the 2" meter customers, e) the 4" inch meter customers, and f) the 6" meter customers; each spreadsheet is to include the usage broken out for each of the meter sizes. If a customer has multiple meters, please include a separate entry for each meter on each corresponding spreadsheet.**

**RESPONSE:**

**See Attachment – DR 58 Response Attachment.**

Table 11 Excerpted from DR 58

Date	Num	Item	Item Description	Split	Qty	Credit	Staff Check	Difference
01/01/2016	12-6294	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	157.00	6.94	\$1.76	-\$5.18
04/01/2016	12-6664	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	157.00	6.94	\$1.76	-\$5.18
07/01/2016	12-7032	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	157.00	6.94	\$1.76	-\$5.18
10/01/2016	12-7406	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	203.50	9.00	\$2.28	-\$6.72
01/01/2016	12-6298	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	620.00	3.84	\$6.94	\$3.10
04/01/2016	12-6668	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	620.00	3.84	\$6.94	\$3.10
07/01/2016	12-7036	R. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	620.00	3.84	\$6.94	\$3.10
01/01/2016	12-6113	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	1,485.25	35.47	\$16.63	-\$18.84
04/01/2016	12-6481	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	1,485.25	35.47	\$16.63	-\$18.84
07/01/2016	12-6848	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	1,485.25	35.47	\$16.63	-\$18.84
10/01/2016	12-7221	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	487.00	11.63	\$5.45	-\$6.18
01/01/2016	12-6165	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	856.75	15.98	\$9.60	-\$6.38
04/01/2016	12-6534	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	856.75	15.98	\$9.60	-\$6.38
07/01/2016	12-6901	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	856.75	15.98	\$9.60	-\$6.38
10/01/2016	12-7274	C. Cf's used	Water consumption for the quarter (\$1.12/100cf)	141 - Accounts Receivable	769.00	14.34	\$8.61	-\$5.73



**DR 9**

**Please explain why the OPUC has not received an application regarding affiliated interest transactions, for instance, for Ms. Bekins salary, the rental of Ms. Bekins' barn, and the rental of Ms. Hill's office space.**

RESPONSE: Since the Commission's determination of jurisdiction in August of 2009 (Order 09-313) (WJ 24), the Company has completed a single rate case (UW 145). Therein, PUC staff reviewed compensation expenses to Maryanne Hill and Lesli Bekins, as well as the lease of Ms. Hill's office space and the Ms. Bekins' barn. PUC Staff did not request an affiliated interest filing or indicate that affiliated interest filings were necessary for these transactions. The Company had the impression that affiliated interest filings were not requested given the expenses were already rigorously reviewed in the course of UW 145.

The Company is now aware that these types of affiliated interest transactions must be approved by the Commission, and that the Commission clarified its position with respect to affiliate interest filings in cases where owners of water utilities are also employed by the utility (Order 06-657 (UW 117)).

- 1) The Company will submit an affiliated interest agreement for the rental of Ms. Bekins' barn (indoor and outdoor storage).
- 2) The Company will submit an affiliated interest agreement for the rental of office space from Ms. Hill as she is within the successive chain of ownership for more 5% of the voting securities of the Company (ORS 757.495(2)).
- 3) The Company will submit an affiliated interest agreement for Ms. Bekins' proposed salary in UW 174.

DR 14

Please provide the bills for Account 611, Telephone/Communications and include in your response an explanation of how costs are allocated for this expense.

RESPONSE:

CenturyLink is the communications (non-cellular) provider for the Company and includes the following:

- Package (base plan) - includes one land line phone that is for personal use, so \$24.95 is deducted each month. The remaining cost of the Package (for business fax line 503-272-3490 and WIFI) is used for both the Company and Charlomont Hill, LLC ("Charlomont"). As such, the Company pays 50% of this cost.
- Broadband – includes modem router rental and internet that are used for both the Company and Charlomont. As such, the Company pays 50% of this cost.
- Voice – is a business land line (503-272-3281) which is used for both the Company and Charlomont. As such, the Company pays 50% of this cost.
- Entertainment – is for TV, which is for personal use, so 100% of this cost is deducted from the bill.

The Monthly Billing Allocation:

Century Link Water Co %	Total Due	Less	Less Ent/TV	Due	Paid	Notes:
Jan 11 Bill Check Cleared 12-28-18	207.36	-24.95	-77.99	52.21	52.21	Bill due Jan. cleared Dec 2015 & not included in Application
Feb	207.73	-24.95	-77.99	52.395	46.47	Water co % was miscalculated and unarpaid in error
Mar	220.83	-24.95	-82.99	56.445	56.45	Payment included \$21.81 bal forwd + 7.50 late fee
April	213.72	-24.95	-82.99	52.89	52.99	Pmt due should have been \$52.90 not \$52.99 - .01 over pmt
May	215.66	-24.95	-82.99	53.86	51.30	Underpayment miscalculation
June	227.8	-24.95	-82.99	59.93	57.37	Late payment was not allocated to companys payment
July	224.48	-24.95	-82.99	58.27	64.24	Calculation errors - used -12.75 not \$24.95 & \$8.80 late fee
Aug	215.73	-24.95	-82.99	53.895	53.99	Calc error -24.75 not -24.95
Sept	208.78	-24.95	-82.99	50.42	53.89	Amt pd was calculated from \$215.73 toal charges rather than amt due
OCT	208.73	-24.95	-82.99	50.395	52.82	Pmt mis calculated from 215.73 current charge rather than amt due
NOV	208.79	-24.95	-82.99	50.425	52.82	Miscalculation over pmt
DEC	201.79	-24.95	-82.99	46.925	40.99	Miscalculation under pmt
				<b>638.06</b>	<b>635.54</b>	<b>UNDERPAYMENT of \$2.52 for year</b>

VERIZON Wireless

The Verizon plan includes four cell phones. One of these is the Company cell phone (503-260-7142). Therefore, 1/4<sup>th</sup> of the monthly base plan is allocated to the Company. Plus, the monthly cost of the Company cell.

See allocation below:

**VERIZON**

DATE	SUPPLIER	AMOUNT	BASE PLAN COST (4-ENTITY PLAN)	1/4th Base Plan alloc to Wtr Co	WATER CO CELL	WTR CO TOTAL
1/20/2016	VERIZON	240.84	\$70.00	\$17.50	22.92	\$40.42
2/20/2016	VERIZON	217.6	\$70.00	\$17.50	22.96	\$40.46
3/20/2016	VERIZON	164.69	\$45.00	\$11.25	22.88	\$34.13
4/20/2016	VERIZON	170.79	\$45.00	\$11.25	22.88	\$34.13
5/20/2016	VERIZON	175.76	\$45.00	\$11.25	22.87	\$34.12
6/20/2016	VERIZON	170.76	\$45.00	\$11.25	22.87	\$34.12
7/20/2016	VERIZON	170.76	\$45.00	\$11.25	22.87	\$34.12
8/20/2016	VERIZON	170.79	\$45.00	\$11.25	22.88	\$34.13
9/20/2016	VERIZON	170.79	\$45.00	\$11.25	22.88	\$34.13
10/20/2016	VERIZON	170.79	\$45.00	\$11.25	22.88	\$34.13
11/20/2016	VERIZON	172.63	\$40.05	\$10.01	22.84	\$32.85
12/20/2016	VERIZON	<u>170.73</u>	\$40.05	\$10.01	22.84	<u>\$32.85</u>
		2166.93				\$419.60

Verizon and Century Link 2016 bills are attached as Data Response 14 Attachment A & B.

While double checking the telephone expense file in the application, the Company discovered that the reimbursement of \$419.57 is a double entry for the telephone charges and should be removed.

**DR 31**

**Please provide a copy of the Water Operator contract for Account 639, Contract Services Other that includes the amount charged for service and duties of the contractor.**

RESPONSE:

The Company's Contract for Operation and Maintenance Services as Direct Responsible Charge (with addendum) is attached separately as Data Response 31 Attachment.

## Contract for Operation and Maintenance Services as Direct Responsible Charge

### RECITALS

WHEREAS, the Government Camp Water Co. Inc. (Owner) owns and operates a domestic water system in Clackamas County, Oregon (Public Water System ID # OR4100336); and

WHEREAS, Owner intends to supply ample domestic water to all its customers within the service area, both residential and commercial for normal uses of such water; and

WHEREAS, Owner desires that the water system be operated by a State of Oregon Certified Water Operator to provide safe drinking water as well as desirable drinking water to all users within its service area; and

WHEREAS, Andrew R. Tagliafico (Operator) has proposed to provide Contract Water System Operator services to Owner and serve as the Direct Responsible Charge (DRC) of the Government Camp Water Company Inc. Water System (System); and

WHEREAS, it is the intention of the Operator and the Owner to enter an agreement wherein the Operator will serve as DRC for the System and provide complete licensed operations, maintenance, monitoring, repair and reporting services of the water source and distribution; and

WHEREAS, it is the intention of the parties that all services performed by the Operator be in compliance with all state and federal laws, regulations and guidelines at all times.

WITNESSETH,

Incorporating the recitals provided herein, the parties agree as follows:

1. Parties. This third party Agreement is made this 20 day of April, 2015 by and between Government Camp Water Co. Inc. in Clackamas County, hereinafter referred to as Owner, and Andrew Tagliafico, operator Cert # (Operator ID# D-6592) of Who Ltd. PO Box 522 Govt. Camp, OR 97028, hereinafter referred to as Operator.
2. Direct Responsible Charge. Subject to the terms and conditions expressly provided within this Agreement and any addendum hereafter executed by the parties, Operator agrees to oversee the general maintenance, daily operation of the System, and assume the position of Direct Responsible Charge (DRC) of the System. Operator agrees to operate and manage the System in accordance with state and federal law, and regulations

promulgated thereto, including those adopted by the Oregon Health Authority under Chapter 333, Division 061 of the Oregon Administrative Rules (OAR).

3. Services. In accordance with the terms of this Agreement and any addendums attached hereto, Operator agrees to furnish Owner with all labor, equipment, transportation, supervision, technical, professional, and other services for the purpose of treating water and performing duties of distribution for the System; and perform all operations and maintenance necessary and required to properly provide services for the service area.
  - a. Operator shall make all decisions that directly impact the quality or quantity of drinking water, manage the day to day operations of the System, maintain the System and perform all tasks necessary within the scope of Operator's obligations under this contract for the operation and maintenance of the System to assure that the water delivered to water users does not exceed maximum contaminant levels, to assure that water system facilities are free of public health hazards, and to assure that water system operation and maintenance are performed as required under state and federal law.
  - b. Operator is solely responsible for safely conducting all operation in order to avoid the risk of endangerment to health, bodily harm to persons, and damage to property. Operator will inspect all equipment, materials, and services to discover any condition that might involve risks and for correcting any of those conditions. Operator will immediately notify owner of any known activity, problem or circumstance that threatens or affects the drinking water supply or health, safety or welfare of the users of the drinking water.
  - c. Operator will undertake remediation in accordance with governmental requirements and make its best reasonable efforts to mitigate problems, and implement any applicable emergency plan.
4. Availability. Operator agrees to be available on call 24 hours a day and able to respond within 1 hour of an emergency. When it is anticipated that Operator will not be available on call, Operator shall arrange for a qualified representative, other operator personnel, subcontractor/ sub-consultant or other person to act on behalf of Operator.
5. Maintenance of Certification. At Operator's expense, Operator will maintain at all times the requisite Oregon drinking water operator certification, including all continuing education requirements. Operator will pay for all permits, licenses, certification and other applicable government requirements or governing authority requirements and inspections, as well as furnish any documentation, bonds, security or deposits required to permit Operators performance of services. Operator will assure that the water system is in compliance with OAR 333-061-0210 through 333-061-0272 relating to certification of water system operators;

6. Security. Operator will cooperate with owner security requirements, and must promptly comply with any security arrangements.
7. Records. Operator shall maintain and provide to Owner records and accounts concerning the operation, maintenance, repair, and equipping of the facility under this Agreement. Owner will have reasonable and legally permissible access to all documents, records, and reports from the Operator to the State drinking water program. All records must be maintained as specified by Oregon State retention schedules. Operator will have all signatory authority for said reports and other documents, as required under Oregon State drinking water rules. Maintaining monitoring and operating records and making these records available for review when the system is inspected;
8. Water Samples. Operator will arrange and supervise routine collecting and submitting water samples for laboratory analyses at the frequencies prescribed by OAR 333-061-0036. All sampling will be performed by Pixis Labs, or other suitable vendor, who shall send results to the company for monthly reporting to the State of Oregon Drinking Water Program. Operator will take immediate corrective action when the results of analyses or measurements indicate that maximum contaminant levels have been exceeded and report the results of these analyses as prescribed by OAR 333-061-0040. Operator shall work in conjunction with the Owner to notify all customers of the water system and the general public in the service area, as prescribed by OAR 333-061-0042, when the maximum contaminant levels have been exceeded;
9. Professional Services. Where technical, professional or other services not usual or ordinary to that of a Level 1 Operator are necessary, Operator shall arrange for such services at the expense of Owner.
10. Additional Terms:

- a. **Addendum.** This Agreement shall become effective upon the parties' execution of an addendum further describing Operator's compensation or other valuable consideration to be received. Such addendum may include additional terms or conditions deemed advisable by the parties.
- b. **Termination.** This Agreement and the provisions of any addendum attached hereto may be terminated:
  - i. By either party at any time for any reason with sixty days (60) written notice to 1) the other party, and 2) the Oregon Health Authority Drinking Water Program;
  - ii. Immediately by the mutual consent of the Owner and the Operator;

- iii. Immediately by Owner upon entry of any final order by the Oregon Health Authority, or its equivalent, determining that all or a portion of this Agreement, or any addendum hereto, fails to satisfy the laws or regulations of the State of Oregon for the purpose of designating a Direct Responsible Charge over the System;
  - iv. By Owner, no less than 60 days following a final decision the Oregon Public Utility Commission that all or a portion of the labor and O&M expenses attributed to Operator's compensation under this Agreement should be disallowed in determining Owner's annual revenue requirements, rate schedule and/or tariff. Prior to terminating the Agreement under this provision, Owner shall provide Operator with a reasonable opportunity to amend the terms of Operator's rates, propose additional terms, or perform in accordance with the Commission's final decision.
- c. **Additional Instruments.** The parties shall deliver or cause to be delivered at the Closing and at such other times and place as shall be reasonably agreed on, such additional instruments as may reasonably be requested for the purpose of carrying out this Agreement.
- d. **Not Assignable.** This Agreement is not assignable by Operator to a third party, without Owner's written consent.

Agreement acknowledged by signature:

Owner: *Kevin A. Belman* Date: 4-20-2015

Operator: *Andrew Taggart* Date: 4/20/2015



**Addendum to**  
**Contract for Operation and Maintenance Services**  
**between**  
**Andrew R. Tagliafico & Government Camp Water Co. Inc.**

This Addendum is executed this 20 day of APRIL, 2015 by and between the Government Camp Water Company, Inc. (Owner) and Andrew Tagliafico (Operator) for the purpose of augmenting and clarifying terms of the contract agreed upon and executed between the parties on 20 APRIL 2015 for Operation and Maintenance Services as Direct Responsible Charge (the Agreement).

The parties hereto further agree as follows:

Services to be provided by Operator to Owner as Direct Responsible Charge (DRC) shall include:

1. Represent the Owner in all meetings with the Oregon Health Authority (OHA) and/or other regulatory agencies where DRC attendance is necessary or as otherwise deemed advisable by Owner. This shall include meetings with the public when required and any and all compliance inspections by the OHA, or other regulatory agencies, as necessary.
2. Attend all regularly scheduled monthly business meetings, including presentation of monthly progress reports. Attend workshops and/or special meetings as may be required of the Government Camp Water Company, Inc., Water System's (System) DRC, or as otherwise deemed advisable by Owner.
3. Provide service and availability as the System's DRC, 24 hours per day, 7 days a week, including weekends and holidays. DRC supervision and service shall include on-site attendance by a licensed operator(s) and sufficient staff to adequately perform services as required to maintain System compliance under state and federal law. Operator, or Operator's agent, shall at all times be available and capable of immediately responding within one hour to any emergency (weekend and holidays included). For purposes of this section, any agent providing service and availability on Operator's behalf shall be duly licensed and will comply with OHA regulations in the event of emergency service with the company's distribution system. All services provided by any agent of the Operator, and any liability arising therefrom shall be deemed to be the service and liability of the Operator.
4. Conduct all routine and periodic services related to the operation and maintenance of the System including, but not limited to, the following:
  - a) Routine fire hydrant inspection, repairs and maintenance;

- b) On-site supervision and instruction of company-contracted labor as may be required as the System DRC, or as otherwise reasonably requested by Owner;
- c) Manage and complete two (2) flushings per year based on water conditions with a written report for each of the flushings for all water distribution systems;
- d) Establish and perform a water valve exercise program;
- e) In the event of System breaks or other emergency, conduct all necessary water sampling and testing should the Company's contracted laboratory not be available;
- f) Respond to any customer complaints as may be required of the System's DRC or as otherwise reasonably requested by Owner;
- g) Respond to and investigate potential leaks;
- h) Conduct a monthly inspection of the entire System with reports provided to the Owner (weather dependent). Update inspection and maintenance logs within the System, with all preventative and routine maintenance to be entered in the System log books and made available to Owner;
- i) Oversee and provide supervision for new connections to the System;
- j) Develop and provide all reports required by the Oregon Health Authority or other regulatory agencies as reasonably requested by Owner;
- k) Consult with the company's engineer on System recommendations;
- l) Assist with the development of Owner's operating and capital budgets up to three times per fiscal year;
- m) Advise and coordinate with Owner in purchasing supplies, equipment and/or outside repair services. *Provided*, Owner will be responsible for purchasing chemicals, equipment and parts. Minor and major repair items such as but not limited to maintenance items, expendable supplies, rebuild kits, light bulbs, etc. will be the responsibility of Owner;
- n) To the extent practical, conduct services in conformity with the recommendations and obligations identified within the United States Environmental Protection Agency's Best Practices Guide Water System Operator Roles and Responsibilities, EPA Publication No. 816-F-06-037, dated September 2006.

### **Insurance and Indemnity**

- 5. Operator agrees to maintain insurance coverage for all services rendered by Operator or Operator's agents. Operator will provide certificates of Liability and Worker's

Compensation insurance and provide coverage in accordance with Owner's & the State of Oregon's insurance requirements. Insurance coverage shall indemnify and hold harmless Owner from any and all liability arising from services rendered by the Operator, or any agent thereof. Operator shall defend any suit that may be brought against the Owner, its shareholders or officers in connection with, or arising out of the services furnished by Operator under the Agreement and this Addendum.

- a) Operator will provide comprehensive general liability, worker's compensation and automobile liability insurance coverage with Owner named as additionally insured. Limits of liability for both coverages shall be a minimum of:

- (1) \$500,000.00 per person and \$500,000.00 per occurrence for bodily injury and
- (2) \$500,000.00 property damage;
- (3) Copies of all insurance policies shall be provided to the Owner prior to commencement of services.

### Compensation

6. Owner agrees to pay compensation to Operator in the amount of four thousand dollars (\$4,000) per month with an annual 2% cost of living adjustment (hereinafter Base Payment). In exchange for Base Payment, the Operator shall assume the position of DRC for the System as provided in the Agreement, subject to the following provisions:

- a) Services included within the Base Payment shall also include:

- (1) Operator's obligations as expressed within Paragraphs 1 through 3 of this Addendum, inclusive;
- (2) Operator's reading of customer water meters & master meter in the summer months every June 15, July 15 & August 15, *provided* Owner will provide Field Sheets to Operator in each of the 3 months meters are to be read. *And provided further*, Owner will be responsible for data entry and providing data to Owner's bookkeeper & the sanitary district;
- (3) Transportation hours to pick up materials and supplies, *provided* Owner shall reimburse Operator for mileage at the current deductible rate as determined by the United States Internal Revenue Service;
- (4) Supervision, technical & professional services rendered in the course of managing operation & maintenance of the System in the capacity of DRC and as provided in the Agreement and this Addendum. *Provided*, services of other billable professionals such as engineers, surveyors, plumbers etc. shall be paid directly by Owner.

- b) All other activities and services provided under this proposal will be billed as follows:

- (1) \$45.00 per hour for labor;
  - (2) \$95.00 per hour for back hoe with operator;
  - (3) All other non-specified rented, subcontracted or non-inventory items cost plus thirty percent.
- c) Subject to the terms of this Addendum and the underlying Agreement, the compensation terms of this Section 6 shall be binding upon the parties for a period of three (3) years unless otherwise agreed upon in writing.
- d) For the period of one year following the execution of this Agreement if total compensation to Operator exceeds the sum of \$65,000:
- (1) The parties shall participate in a budget conference to address revenue, costs and continued performance under the Agreement and this Addendum;
  - (2) Owner shall be entitled to invite public bidding for all or a portion of the services contemplated under the Agreement and this Addendum.

Agreement acknowledged by signature:

Owner: *Jessie A. Bekins* Date: *4-20-2015*

Operator: *Andrew J. Taylor* Date: *4/20/2015*

**DR 42**

**For the following six years, 2011-2016, for each year, please provide the amount of labor costs associated with employee or contract labor that Government Camp has capitalized as part of its capital projects.**

**RESPONSE:**

Labor costs associated with capitalized plant are attached in five DR 42 Attachments.

Government Camp Water Co., Inc.  
Transactions by Account  
As of December 31, 2016

	Type	Date	Num	Adj	Name	Memo	Cir	Split	Debit	Credit	Balance
331 - Transmission & Dist. Mains											0.00
331.1 - Wyeast											0.00
	Check	05/05/2015	5577		WHO, Ltd	Wyeast Cain		131.1 - Checking 4899	1,179.87		1,179.87
	Check	06/21/2015	5600		WHO, Ltd	Arp to 8" Main - Wyeast - New Meter		131.1 - Checking 4899	1,445.00		2,624.87
	Check	07/18/2015	5611		WHO, Ltd			131.1 - Checking 4899	2,145.00		4,769.87
	Check	10/18/2015	5648		-MULTIPLE-	-MULTIPLE-		131.1 - Checking 4899	631.66		5,401.53
	Check	05/24/2016	1064		WHO, Ltd	Rudi		131.4 - Checking 0170	1,107.00		6,508.53
	Check	08/18/2016	1119		-MULTIPLE-	-MULTIPLE-		131.4 - Checking 0170	905.00		7,413.53
Total 331.1 - Wyeast									7,413.53	0.00	7,413.53
Total 331 - Transmission & Dist. Mains									7,413.53	0.00	7,413.53
TOTAL									7,413.53	0.00	7,413.53

Government Camp Water Co., Inc.  
**Transactions by Account**  
 As of December 31, 2016

	Type	Date	Num	Adj	Name	Memo	Clr	Split	Debit	Credit	Balance
335 · Hydrants											0.00
	Check	08/18/2016	1119		-MULTIPLE- Grand Lodge			131.4 · Checking 0170	495.00		495.00
Total 335 · Hydrants									495.00	0.00	495.00
TOTAL									495.00	0.00	495.00

Government Camp Water Co., Inc.  
Transactions by Account  
As of December 31, 2016

334 - Meters & Installation  
334.1 - Metering Plan

Type	Date	Num	Adj	Name	Memo	Clr	Split	Debit	Credit	Balance
										0.00
										0.00
Check	10/18/2012	III		Andrew Tagliafico	Labor & Backhoe new connections - Nogelire	131.1	Checking 4899	67.50		67.50
Check	06/10/2013	5141		-MULTIPLE-	-MULTIPLE-	131.1	Checking 4899	2,846.00		2,913.50
Check	07/03/2013	5154		-MULTIPLE-	-MULTIPLE-	131.1	Checking 4899	2,700.00		5,613.50
Check	07/26/2013	5167		-MULTIPLE-	-MULTIPLE-	131.1	Checking 4899	3,150.00		8,763.50
Check	10/06/2014	5473		Andrew Tagliafico		131.1	Checking 4899	3,777.50		12,541.00
Check	12/27/2014	5511		Andrew Tagliafico	Bridge	131.1	Checking 4899	1,020.00		13,561.00
								<u>13,561.00</u>	<u>0.00</u>	<u>13,561.00</u>
								<u>13,561.00</u>	<u>0.00</u>	<u>13,561.00</u>
								<u>13,561.00</u>	<u>0.00</u>	<u>13,561.00</u>

Total 334.1 - Metering Plan

Total 334 - Meters & Installation

TOTAL



Government Camp Water Co., Inc.  
Transactions by Account  
As of December 31, 2016

Type	Date	Num	Adj	Name	Memo	Clr	Split	Debit	Credit	Balance
334 - Meters & Installation										0.00
Check	03/16/2011	4796		Andrew Tagliafico	Meldrum Mills		131.1 - Checking 4899	303.75		303.75
Check	06/10/2011	4825		Andrew Tagliafico	Yodel Ln/Lige Ln Mills		131.1 - Checking 4899	225.00		528.75
Check	09/29/2011	4888		Andrew Tagliafico	Morrison Ln/ Mills		131.1 - Checking 4899	315.00		843.75
Check	11/04/2011	VI.		-MULTIPLE-	-MULTIPLE-		131.1 - Checking 4899	1,125.00		1,968.75
Check	12/12/2011	4918		Andrew Tagliafico	Little Trail / Mills		131.1 - Checking 4899	225.00		2,193.75
Check	10/18/2012	III		-MULTIPLE-	-MULTIPLE-		131.1 - Checking 4899	202.50		2,396.25
Check	06/10/2013	5141		Andrew Tagliafico	New service install, street patch in little trail - G		131.1 - Checking 4899	165.00		2,561.25
Check	12/20/2013	5339		Andrew Tagliafico	Meter install Wayne Allen 89272 E Lige Ln		131.1 - Checking 4899	450.00		3,011.25
Check	10/06/2014	5473		Andrew Tagliafico			131.1 - Checking 4899	135.00		3,146.25
Check	11/21/2014	5499		Andrew Tagliafico	Scroggins		131.1 - Checking 4899	327.00		3,473.25
Total 334 - Meters & Installation								3,473.25	0.00	3,473.25
TOTAL								3,473.25	0.00	3,473.25

Government Camp Water Co., Inc.  
**Transactions by Account**  
 As of December 31, 2016

	Type	Date	Num	Adj	Name	Memo	Clr	Split	Debit	Credit	Balance
333 - Services - New Connections											0.00
	Check	05/05/2015	5577		WHO, Ltd	Perry		131.1 - Checking 4899	345.13		345.13
	Check	10/18/2015	5648		-MULTIPLE-	-MULTIPLE-		131.1 - Checking 4899	1,218.34		1,563.47
	Check	07/18/2016	1110		WHO, Ltd	Rice		131.4 - Checking 0170	90.00		1,653.47
	Check	08/18/2016	1119		-MULTIPLE-	-MULTIPLE-		131.4 - Checking 0170	675.00		2,328.47
	Check	09/19/2016	1130		-MULTIPLE-	-MULTIPLE-		131.4 - Checking 0170	918.15		3,246.62
	Check	10/23/2016	1143		WHO, Ltd	Parrish		131.4 - Checking 0170	270.00		3,516.62
	Check	11/21/2016	1159		WHO, Ltd	Soot		131.4 - Checking 0170	322.50		3,839.12
Total 333 - Services - New Connections									3,839.12	0.00	3,839.12
TOTAL									3,839.12	0.00	3,839.12

**DR 28**

**Please list all vehicles that are covered under the insurance paid by Account 656, Vehicle Insurance, and include in your response how each vehicle is used and the purpose of the vehicle.**

RESPONSE:

The vehicle covered is a 2014 Buick Rainier. Uses of the vehicle include, but are not limited to, inspection of lines, performance of meter readings, travel to maintenance/repair sites and customer locations, etc. The vehicle is also used to drive to Welches or Portland for supplies and, on occasion, take samples to the lab.

**DR 29**

**Please list all vehicles that are included in the Account 650, Transportation, and include in your response an explanation of how each vehicle is used and the purpose of the vehicle.**

**RESPONSE:**

- 1) Company's Buick Rainier – See response to DR 28.
- 2) WHO Ltd – Water operator's vehicle. WHO Ltd charges miles to the Company when it has to use its vehicle in the performance of work for the Company. This includes, but is not limited to, picking up materials/equipment, delivery of such to site, and taking samples to the lab.
- 3) Cunningham Consulting – Bookkeeper's vehicle. Cunningham Consulting charges miles to the Company when it has to use its vehicle in the performance of work for the Company. This includes, but is not limited to, travel for banking, attendance of meetings in Government Camp, Post Office runs, etc.

**DR 70**

**In supplemental DR 70 to the Company's response to DR 28, please provide a copy of the registration for the 2014 Buick Rainier and explain in your response whether the Company owns the Buick Rainier. If this vehicle is not owned by Government Camp, please indicate what percentage of its use is for the Company versus personal or other uses.**

**RESPONSE:**

In its response to DR 70, the Company amends, in part, its response to DR 28 by clarifying that the Buick Rainier is a 2004 model rather than 2014. The Company's description of the Buick Rainier as a 2014 model was a typographical error.

Responding to DR 70, a copy of the Buick Rainier's registration is attached as DR 70 Response Attachment. The Buick is not owned by the Company, but it used exclusively (100%) by the Company for water business.

**DR 25**

**Please explain why Account 471, Miscellaneous Services, revenues were not included in the Application's total revenue requirement for 2016.**

**RESPONSE:**

The Company's 2016 Profit and Loss Statement show Other Income (Acct 471) of \$4,561.81. In its application, the Company included \$4,562 in Miscellaneous Revenue, which was then removed as Pass Through Costs.

**DR 38**

**In the plant worksheet submitted, Account 331, Transmission and Distribution Mains, please explain whether the Tyrolean Meadows true-up of costs in the amount of \$14,419 agreed to in the Stipulation for UW 145, Condition 10, was entered twice to Plant (it appears it was added in UW 145 and again in UW 174). If the amount was entered twice, please explain which in-service date is correct.**

**RESPONSE:**

It appears that this item was mistakenly entered twice. The in-service date of 9/1/2007 is correct.

**DR 40**

In the plant worksheet submitted, Account 334, Meters and Meter Installations, please provide the backup documentation of how the meter allowance provided in UW 145 of \$49,500 towards the installation of 55 additional customer meters was spent. Please include in your response, receipts for the 55 meters purchased, the dates they were installed and the names of the customers that received them.

**RESPONSE:**

There was an oversight on this. The Company didn't recall the metering allowance so it was inadvertently missed. The Metering Allowance of \$49,500 should have been removed from the proposed Plant, and the following meter plan detail should be included in Plant.

The 3-year meter plan included the following:

<b>2012 Metering Plan</b>	<b>\$549.77</b>	<b>1 meter</b>
<b>2013 Metering Plan</b>	<b>\$20,521.17</b>	<b>13 meters</b>
<b>2014 Metering Plan</b>	<b>\$6,888.84</b>	<b>5 meters</b>
	<b>\$27,959.78</b>	

The spreadsheets included in Data Response 40 Attachment show the information you have requested for each year of the metering plan. However, there are numerous entries and providing each and every receipt/invoice is burdensome. In an effort to be efficient, the Company will be happy to provide the receipt/invoice you want to review if you would please identify the item, date, and cost.



**YEAR 2012 - FIRST YEAR OF METERING PLAN**

Date	Vendor	Inv #	Description	Nogarie Metering Plan	Total
9/15/2012	Andrew	3424	Metering Plan	7 hrs Install meter valve can	\$315.00
9/17/2012	Andy	3424	Metering Plan	2 hrs set valve can Nogarie	\$90.00
10/10/2012	HD	5584861	Metering Plan	Nogarie Meter	\$71.32
10/19/2012	FEI	2559129	Metering Plan	Nogarie Mtr Bix	\$73.45
				<b>TOTAL COST</b>	<b>\$549.77</b>

<b>CUSTOMER NAME</b>
Nogarie

YEAR 2013 - SECOND YEAR OF METERING PLAN

Date	Inv #	Vendor	Category	Cost	Location	CK #
5/17/2013	3452	Andrew	Metering Plan	\$225.00	Museum Meter install - 5 hrs labor	5141
5/20/2013	3452	Andrew	Metering Plan	\$112.50	Museum town for additional mtr parts- 2.5 hrs	5141
5/22/2013	2692943	Ferguson	Metering Plan	\$0.90	Museum meter	5131
5/23/2013	3452	Andrew	Metering Plan	\$112.50	Museum Meter install - 2.5 hrs labor	5141
5/25/2013	Museum	Chris Scott Plumbing	Metering Plan	\$340.00	Museum Meter ( \$260 labor 80 parts)	5130
5/28/2013	3452	Andrew	Metering Plan	\$540.00	Campbell/Skowhede/Landauer 12 hrs labor	5141
5/28/2013	359517	Ferguson	Metering Plan	\$299.00	Campbell/Landauer/Haugen	5153
5/28/2013	2696720	Ferguson	Metering Plan	\$1.12	Campbell/Landauer/Skowhede	5137
5/28/2013	8021641	HD Supply	Metering Plan	\$406.06	Campbell/Landauer/Skowhede	5135
5/29/2013	3452	Andrew	Metering Plan	\$405.00	Carrier/Landauer - 9 hrs labor	5141
5/29/2013	67965	Mtn Bldg Supply	Metering Plan	\$18.73	Landauer	5138
5/30/2013	3452	Andrew	Metering Plan	\$405.00	Skowhede & parts run for meters & CO2 9 hrs	5141
5/30/2013	68010	Mtn Bldg Supply	Metering Plan	\$28.71	Carrier/Skowhede	5136
5/31/2013	3452	Andrew	Metering Plan	\$585.00	Skowhede/ Carrier 13 hrs	5141
5/31/2013	3452	Andrew	Metering Plan	\$90.00	Move gravel for backfill - 1 hr machine	5141
5/31/2013	3452	Andrew	Metering Plan	\$26.50	Museum Meter misc parts	5141
5/31/2013	3452	Andrew	Metering Plan	\$34.00	Mattheson CO2 Tanks refill 1 tank	5141
5/31/2013	3452	Andrew	Metering Plan	\$310.50	1" minus rock stockpile for metering plan 11.5 yds	5141
5/31/2013	2696749	Ferguson	Metering Plan	\$82.59	Campbell/Landauer/Skowhede	5137
6/3/2013	360218	Ferguson	Metering Plan	\$580.26	Campbell/Landauer/Skowhede	5153
6/11/2013	3534	Andrew	Metering Plan	\$225.00	Campbell Meter install 5 hrs labor	5154
6/11/2013	3534	Andrew	Metering Plan	\$90.00	Campbell Meter backfill 1 hour machine	5154
6/18/2013	3534	Andrew	Metering Plan	\$135.00	parts run to town	5154
6/18/2013	3454	Andrew	Metering Plan	\$135.00	parts run to town Morst Rave Putnam 3 hrs	5154
6/18/2013	8112620	HD Supply	Metering Plan	\$515.06	Morse Ravi Putnam parts	5149
6/19/2013	362663	Ferguson	Metering Plan	\$167.42	Morse Ravi Putnam parts	5150
6/24/2013	3534	Andrew	Metering Plan	\$810.00	Morse dig, install meter & backfill	5154
6/24/2013	3454	Andrew	Metering Plan	\$720.00	Morse dig up wtr svc & install meter 16 hrs	5154
6/24/2013	3454	Andrew	Metering Plan	\$90.00	Backfill Morse 1 hr machine	5154
6/25/2013	3534	Andrew	Metering Plan	\$810.00	Ravi Putnam dig install meters & packfill	5154
6/25/2013	3454	Andrew	Metering Plan	\$720.00	Dig up & instal meter @ both Ravi Putnam houses 16 hrs labor	5154
6/25/2013	3454	Andrew	Metering Plan	\$90.00	Backfill @ both Ravi Putnam houses 1 hr machine	5154
6/25/2013	68564	Mtn Bldg Supply	Metering Plan	\$3.73	Ravi Putnam	5155
7/2/2013	3534	Andrew	Metering Plan	\$630.00	Wilcox meter dig up service install meter backfill	5154
7/2/2013	3454	Andrew	Metering Plan	\$540.00	Dig up water svc at Wilcox - install meter - 12 hrs labor	5154
7/2/2013	3454	Andrew	Metering Plan	\$90.00	Backfill Wilcox - 1 hr machine	5154
7/2/2013	364601	Ferguson	Metering Plan	\$287.76	Wilcox metering parts	5162
7/2/2013	2720727	Ferguson	Metering Plan	\$102.68	Wilcox metering parts	5164
7/8/2013	3456	Andrew	Metering Plan	\$720.00	Dig up water svcs Ingersol Red Roof and Reed College	5167
7/8/2013	3456	Andrew	Metering Plan	\$720.00	Dig up water svc at Ingersol & Reed College 16 hrs labor	5167
7/9/2013	3456	Andrew	Metering Plan	\$720.00	Dig up water svc at Barlow Pass West	5167
7/9/2013	3456	Andrew	Metering Plan	\$720.00	Dig up water svc at Barlow Pass West Condo - 16 hrs labor	5167
7/9/2013	2724463	Ferguson	Metering Plan	\$150.27	Ingersol, BPW, Reed College metering parts	5165
7/9/2013	8194731	HD Supply	Metering Plan	\$2,786.23	Ingersol, BPW, Reed College meters & parts	5161
7/10/2013	3456	Andrew	Metering Plan	\$810.00	Install meters at Ingersol and Neth duplex	5167
7/10/2013	3456	Andrew	Metering Plan	\$810.00	Install meters @ Ingersol & Neth - 18 hrs labor	5167
7/10/2013	365483	Ferguson	Metering Plan	\$471.98	Ingersol, BPW, Reed College meters & parts	5168
7/10/2013	68923	Mtn Bldg Supply	Metering Plan	\$25.38	Ingersol - Neth	5173
7/11/2013	3456	Andrew	Metering Plan	\$900.00	Install meters at Barlow Pass West & Reed College begin backfill	5167
7/11/2013	3456	Andrew	Metering Plan	\$720.00	Install meters at Barlow Pass West & Reed College begin backfill 16 hrs	5167
7/11/2013	3456	Andrew	Metering Plan	\$180.00	Backfill meter boxes BPW & Reed College 2 hrs machine	5167
7/15/2013	68546	Mtn Bldg Supply	Metering Plan	\$22.29	Morse	5155
			TOTAL COST	\$20,521.17		

CUSTOMER NAMES

Ingersol - Mt Hood
Museum
Barlow Pass West
Reed College
Neth
Ravi Putnam
Ravi Putnam Rental
Campbell
Skowhede
Carrier
Landauer
Wilcox
Morse

**YEAR 2014 - THIRD YEAR OF METERING PLAN**

Date	Inv #	Vendor	Category	Cost	Project or Locatoin	CK #	Dt of CK
9/24/2014	110954	Andrew	Metering Plan / Cap Improvement	\$180.00	labor 4 hrs parts for meter parmelee	5280	10/6/2014
9/24/2014	3467	Andrew	Metering Plan / Cap Improvement	\$135.00	labor 3 hrs Parmelee meter install& backfill	5280	10/6/2014
9/24/2014	3114168	FEI	Metering Plan / Cap Improvement	\$79.92	Parmelee	5517	12/31/2014
9/24/2014	110954	HD Supply	Metering Plan / Cap Improvement	\$126.65	Perrodin	5469	9/30/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	\$142.50	backhoe 1.5 hrs backfill at Parmelee	5280	10/6/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	\$75.00	materials 3 yds @\$25/yd crushed rock for Parmelee	5280	10/6/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	\$270.00	Labor 6 hrs dig up waterline at Trails Club	5280	10/6/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	\$270.00	Labor 6 hrs dig up waterline at Boy Scouts	5280	10/6/2014
9/25/2014	428334	FEI	Metering Plan / Cap Improvement	\$68.41	Perrodin	5471	10/2/2014
9/25/2014	D020932	HD Supply	Metering Plan / Cap Improvement	\$176.99	Perrodin	5470	10/1/2014
9/26/2014	3467	Andrew	Metering Plan / Cap Improvement	\$450.00	labor 10 hrs saw cut A C and dig up service Perrodin	5280	10/6/2014
9/26/2014	3116540	FEI	Metering Plan / Cap Improvement	\$415.89	Trails Club	5467	9/30/2014
9/27/2014	3467	Andrew	Metering Plan / Cap Improvement	\$135.00	B & R Rentals for A C Saw Perrodin	5280	10/6/2014
9/27/2014	3467	Andrew	Metering Plan / Cap Improvement	\$405.00	labor 9 hrs install Perrodin meter & backfill	5280	10/6/2014
9/29/2014	3467	Andrew	Metering Plan / Cap Improvement	\$50.00	materials 2 yds crushed rock @\$25/yds Perrodin	5280	10/6/2014
9/29/2014	3467	Andrew	Metering Plan / Cap Improvement	\$135.00	labor 3 hrs get meter boxes town Boy Scouts+Trails Club	5280	10/6/2014
9/29/2014	3467	Andrew	Metering Plan / Cap Improvement	\$675.00	labor 15 install meter at Boy Scouts & Trails Club	5280	10/6/2014
9/29/2014	3118127	FEI	Metering Plan / Cap Improvement	\$79.95	Perrodin	5468	9/30/2014
9/30/2014	3467	FEI	Metering Plan / Cap Improvement	\$59.48	Parmelee	5471	10/2/2014
9/30/2014	3467	Andrew	Metering Plan / Cap Improvement	\$675.00	labor 15 install meter at Boy Scouts & Trails Club	5280	10/6/2014
10/4/2014	3467	Andrew	Metering Plan / Cap Improvement	\$270.00	labot 6 hrs set meter boxes at Boy Scouts & Trails Club	5280	10/6/2014
12/2/2014	437666	FEI	Metering Plan / Cap Improvement	\$693.03	Bridge pipe & fittings	5517	12/31/2014
12/3/2014	3177399	FEI	Metering Plan / Cap Improvement	\$301.02	Bridge meter, pipe & fittings	5516	12/31/2014
12/3/2014	3472	Andrew	Metering Plan / Cap Improvement	\$380.00	4 hrs Dig waterline Bridge duplex	5511	12/22/2014
12/3/2014	3472	Andrew	Metering Plan / Cap Improvement	\$360.00	8 hrs Install meter at bridge plex	5511	12/22/2014
12/5/2014	3472	Andrew	Metering Plan / Cap Improvement	\$90.00	2 hr man - backfill meter boxes Bridge plex	5511	12/22/2014
12/5/2014	3472	Andrew	Metering Plan / Cap Improvement	\$190.00	2 hr machine - backfill meter boxes Bridge plex	5511	12/22/2014
<b>TOTAL COST</b>				<b>\$6,888.84</b>			

CUSTOMERS NAMES
Perrodin
Parmelee
Trails Club
Boy Scouts
Bridge duplex

### SUMMARY

Count	Acct #	Customer Name	Location	Meter #	Date Install
1	71	Nogarie	8940 E Round Mtn Lp	92696902	09/15/12
2	306	Mt Hood Museum	88900 E G.C. Loop	48994670	05/23/13
3	242	Landauer	30397 E Blossom Tr	93490859	05/29/13
4	100	Carrier/OR Exp LLC	30467 Blossom	93490861	05/31/13
5	157	Skowhede	30460 E Blossom Tr	93490862	05/31/13
6	105	Campbell, Jim & Laura	80703 E Lige	93490860	06/11/13
7	114	Morse, Dorte&Greg	30225 E Blossom Tr	92946540	06/24/13
8	60	Putnam/Ravi	88567 E Frontage	93581182	06/25/13
9	162	Ravi/Putnam	30960 E Multorpor Dr	93581174	06/25/13
10	237	Wilcox	89107 E Little Tr	93581183	07/02/13
11	250	Ingersol - Mt. Hood Resort Lodging	89048 E Little Tr	60820245	07/10/13
12	34	Neth	89055 E G.C. Loop	60820247	07/10/13
13	39	Reed Inst. Ski Cabin	30545 E Mucoy St	956811175	07/11/13
14	5	Barlow Pass West	30395 E WyEast	608202249	07/11/13
15	214	M. Parmelee	30700 E Meldrum St	67222037	09/25/14
16	126	Perrodin	88875 E Round Ntn Lp	67222042	09/29/14
17	8	Boy Scouts of America	27901 E West Leg Rd	60638388	10/04/14
18	56	Trails Club	30133 E West Leg Rd	18359645	10/04/14
19	9	Bridge, Duane & Shari	88256 E Steel Ln	77874323	12/4/2014

2012 Metering Plan	\$549.77
2013 Metering Plan	\$20,521.17
2014 Metering Plan	\$6,888.84
<b>TOTAL COST</b>	<b>\$27,959.78</b>

**DR 37**

**In the plant worksheet submitted, Account 330, Distribution Reservoir and Standpipes, please explain the difference in the UW 145 stated amount for the 100,000 Gal Wood Tank of \$41,700 to the corrected amount filed in UW 174 of \$48,475. Please include in your explanation supporting documentation of the actual cost in June 1980.**

**RESPONSE:**

Below is the plant entry in question.

<b>UW 145</b>	<b>100,000-GAL WOOD TANK (Corrected Amount)</b>	<b>6/1/1980</b>	<b>48,475</b>
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In UW 145, the total cost of the tank was not recorded at the correct amount. In researching information to respond to Data Request 37, the Company found additional information (summarized in the table below) confirming the cost of the wood tank. This summary shows that the \$48,475 (referenced above) was incorrect. Attached as Data Response 37 Attachment A, you will find Small Business Administration (SBA) documentation supporting the total cost of the wood tank project as \$139,000. Removing costs that are already included in plant in UW 145 (not including the plant entry above) leaves a total of \$100,949.22. Therefore, the cost correction to the plant entry should be \$100,949.22 minus the \$41,700 from the UW 145 original entry. This results in a corrected adjustment to the plant entry above of \$59,249.22.

The cost of the tank has been depreciating since 1980 at a service life of 50 years. Due to the error noted above, it has depreciated at the incorrect amount. The Company requests that staff amend the plant entry above to show a corrected amount of \$59,249.22. This will ensure the remaining correct cost is being depreciated.

SBA DISB DT	TOTAL AMT	SBA Disbursement Check #	AMOUNT	PAID TO	
9/16/1980	25,918.06	15230016	25,918.06	CCB	National Tank & Pipe payment for Tank
	2,130.97	15230017	2,130.97	Wtr Wks Supply	Pipe & Fittings
	347.00	15230018	347.00	Borrower	Mercer - Rebar
	13,245.74	65109453	13,245.74	Wtr Wks Supply	Pipe & Fittings
	3,080.00	65109454	3,080.00	Morrison Knudsen	Concrete work & concrete pump
	854.20	65109455	854.20	Bruce Erickson PE	Consulting Engineer
	622.00	65109456	622.00	Borrower	Robt. Marshall /Mileage for Hauling
10/8/1980	692.64	15499542	692.64	Water Works Supply	Pipe & Fittings
	4,819.83	15499543	4,819.83	Bruce Erickson PE	Engineering
10/27/1980	27,609.00	15735110	already In plant*	Govt Camp Excav	Labor, materials & machine
	533.30	15735111	already In plant*	Bitte Church & Winchell	CPA- app requirements & acctg SBA forms
	1,000.00	15735112	1,000.00	Borrower	Govt Camp Excavation / Labor, materials & machine
12/9/1980	603.50	15843933	603.50	Statewide Rent-a-fence	Fencing
	1,025.37	15843934	1,025.37	Water Works Supply	Pipe & Fittings
	186.00	15843935	186.00	Bruce Erickson PE	Engineer & draftsman
	627.20	15843936	627.20	A & A Drilling	Pipe & Fittings
	19,503.79	15843937	19,503.79	Govt Camp Excav	Labor, materials & machine
	2,433.13	15843938	2,433.13	Borrower	Casual Labor
<b>1980 TOTAL</b>	<b>105,231.73</b>		<b>77,089.43</b>		
1/12/1981	1,035.00	65858378	1,035.00	Bruce Erickson PE	Engineer & draftsman
	85.15	65858379	85.15	Water Works Supply	Pipe & Fittings
	210.00	65858380	210.00	Borrower	Casual Labor
7/13/1981	4,207.98	see SBA letter	already In plant*	Water Works Supply	Pipe & Fittings
8/24/1981	1,025.66	17337934	1,025.66	Water Works Supply	Pipe & Fittings
	3,500.00	17337935	3,500.00	Govt Camp Excav	Labor, materials & machine
	2,674.60	17337936	2,674.60	Govt Camp Excav	Labor, materials & machine
9/21/1981	1,764.06	67357991	1,764.06	Borrower	Water Works Sup & Pacific Water Wks P & F
10/15/1981	2,000.00	17561242	2,000.00	Borrower	Govt. Camp Excav - Labor, materials & machine
	2,447.88	17561243	2,447.88	Govt Camp Excav	Labor, materials & machine
<b>1981 TOTAL</b>	<b>18,950.33</b>		<b>14,742.35</b>		
2/11/1982	4,930.50	18182130	already In plant*	Govt Camp Excav	Labor, materials & machine
4/22/1982	1,000.00	18557113	1,000.00	Govt Camp Excav	Labor, materials & machine
	770.00	18557114	already In plant*	Borrower	Govt. Camp Excav - Labor, materials & machine
8/31/1982	2,342.31	19234803	2,342.31	Pacific Water Wks Supply	Pipe & Fittings
10/21/1982	5,775.13	20059169	4,183.18	Pacific Water Wks Supply	Pipe & Fittings
		20059168	1,591.95	Borrower	Govt. Camp Excav - Labor, materials & machine
<b>1982 TOTAL</b>	<b>14,817.94</b>		<b>9,117.44</b>		
<b>GRAND TOTAL</b>	<b>139,000.00</b>		<b>100,949.22</b>		
1980	77,089.43		100,949.22	Cost Not In Plant	
1981	14,742.35		(41,700.00)	Minus UW 145 Entry	
1982	9,117.44		59,249.22	Corrected Entry Amount	
	100,949.22				

\*Yellow highlighted costs are already in plant

Note: The pre-SBA loan engineering entries below are already included in plant. This engineering work was required as a prerequisite condition of the loan. The costs are not included in the SBA documents because they occurred prior to the loan. Data Response 37 Attachment B documents the pre-SBA loan engineering costs.

Engineering Cost Wood Tank - Pre SBA	2/29/1980	919
Engineering Cost Wood Tank - Pre SBA	3/18/1980	333
Engineering Cost Wood Tank - Pre SBA	5/12/1980	671

**DR 16**

**Please provide a separate Plant schedule for all CIAC contributions in excel format.**

**RESPONSE:**

A copy of the Company CIAC plant and depreciation schedule is attached in excel format as Data Response 16 Attachment.



**DR 75**

**Please provide the status of the CWIP project of \$5,441 to replace lines necessary to correct a repair problem. Please explain in your response whether the project has been started and when you expect it to complete. Please include in your response all documentation in the Company's possession of the current status of and timeline for project, including any project plans or contract(s) associated with the project.**

**RESPONSE:**

As the timeline below indicates, the capital project started in November 2017. Due to the timing of the customer complaint, identification of the problem and the area's short construction season, the Company was forced to temporarily delay physical construction. The line connects to 4 homes. This is a small project; and therefore, doesn't require engineering plans or contracts. The revenues from the CWIP will be used solely for the purpose of completing the project. Staff has already received a copy of the estimate for the line replacement in the application, Exhibit 4.

**LINE REPLACEMENT TIMELINE**

<b>DATE</b>	<b>ACTIVITY</b>
9/13/2017	Customer complaint re: low volume/pressure
10/31/2017	Company makes repair/identifies further problems including numerous leaks and tree roots
10/31/2017	Solution identified, replace 1940 lines and move the lines away from trees
11/10/2017	Company receives estimate for line replacement
11/10/2017	Company makes decision to replace lines
11/13/2017	Starts snowing, construction halted
	<b>ESTIMATED TIMETABLE</b>
	As soon as snow melts company will begin replacement of line.
Phase 1	Cummins - Tap a line on Steel & connect home & old line will be abandoned
Phase 2	Robinson, Anja - Tap a line on Steel & connect home & old line will be abandoned
Phase 3	Lukovich & Murphy's line is in an easement which is the access to both cabins off of steel lane. A new line will tap off of Steel and run down the 150-175' easement.





**DR 20**

**Please provide an explanation for the lack of compliance to Condition 12 in the Stipulated Agreement in UW 145, requiring Government Camp to file a new rate case in or prior to January 2014, as the subsequent rate case was filed December 29, 2017.**

RESPONSE:

The Company is a small water system. Filing a rate case is a big deal for the Company. It is very time consuming and costs money to file a rate case. This is above and beyond the time and costs required to operate and maintain the water system. Further, the Company has been going through a lot of changes in the last few years. For example; transitioning to new ownership/ management with the attendant training and mentoring; negotiating an operator contract; hiring and bringing up to speed a new bookkeeping and billing service. It's been a very busy and demanding time for this small Company. In January of 2014, the Company requested PUC Staff stipulate to an 18 month extension. It was the Company's perception that a rate case was not yet advisable.

**DR 18**

Please explain whether Condition 9 (a three-year metering program to install meters to all commercial customers with service line sizes greater than 3/4 inch) in the Stipulated Agreement for UW 145 has been met? If it has not been met, please explain in your response the number of commercial customers without meters with service line sizes greater than 3/4 inch and when those customers will have meters.

**RESPONSE:**

The Company has completed the three-year metering program. However, after delving into the logistics and researching the costs associated with this program, the Company made a management decision to meter only those commercial customers who use a large volume of water. The research showed that commercial customers with lines over 3/4", consume less water, not more than those with 3/4-inch lines. Therefore, the Company determined that because of this lower volume, it wasn't cost effective to meter these lower volume customers with lines over 3/4". The commercial customers without meters with service lines sizes greater than 3/4" are shown below. We have no plans to meter these commercial customers in the foreseeable future

<b>Customer</b>	<b>Acct #</b>	<b>Reason to not include in metering plan</b>
Hoodland Fire	28	Low water use
Stockton	29	Low water use
Smith, Raelene	202	Low water use

**DR 67**

In Government Camp's response to DR 18 regarding Condition 9 in the Stipulated Agreement in UW 145, the Company indicated it "made a management decision to meter only those commercial customers who use a large volume of water." In its response, the Company provided a table listing three low-volume commercial customer accounts (Hoodland Fire, Stockton, and Smith). In the billing data supplied in response to DR 1, there are a total of eight flat-rate commercial and residential customers with 2 inch lines. In supplemental DR 66:

- a. Please advise whether the Company plans to complete the metering program in compliance with Condition 9 of the Stipulated agreement between parties in UW 145, and

RESPONSE:

The Company approached its three year metering plan by determining the most cost effective implementation plan. In UW 174, the Company intends to seek Staff and the Commission's reconsideration of the metering plan. It is the Company's determination that full implementation of the three year metering plan is not in the Company's best interest given cost and the Company's financial position.

- b. Please provide how the Company determined that Hoodland Fire, Stockton, and Smith were low-volume customers without meters by which to gauge customer usage.

RESPONSE:

The Company's management decision is to not to meter low volume customers. However, each situation is unique. The Company determined not to meter the three customers below because:

Hoodland Fire Station - is unmanned; there is little or no consistent water use.

Stockton - This is a vacation rental. The Company intended to meter this customer; however, the water line is under asphalt. In order to install a meter, the asphalt driveway would have to be torn up. The Company determined that it is not cost effective, and it would be needlessly disruptive to tear up the asphalt to install a meter to determine water usage.

Smith - This account has 2 units. The customer lives in one unit but travels a lot and is absent much of the time making it a low volume user. However, the second unit is a rental. The Company will consider this account for metering in the future.

**DR 55**

**During the Pre-Hearing Conference held for UW 174 on February 20, 2018, an attendee expressed concerns relating to a recent water pressure issue that may have been related to snow making activities at a ski resort. Please describe this water pressure issue and provide all documentation that the Company has regarding the issue and its resolution.**

**RESPONSE:**

In December 2016, the Company was notified of a low water pressure issue in the water system. It was determined that the low water pressure was the result of snow making activities at Mt Hood Ski Bowl (Ski Bowl). Following an investigation, it was concluded that the cause was an error on the part of a Ski Bowl employee. The employee was subsequently removed from snow making duties.

As a result of this event, the Company added the following requirements for future snow making activities:

- Total snow making activities are limited to no more than 350 gallons per minute ("GPM").
- Ski Bowl is required to provide phone or text notification to the Company prior to beginning daily snow making activities.
- The Company may, if necessary, suspend snow making during high domestic consumption periods.
- During snow making activities, the Company monitors water system pressure hourly to ensure no reduction in pressure occurs.

This was a one-time incident and no further events have occurred since. The Company's new requirements and procedures regarding snow making activities will be required of all snow making entities.

**DR 56**

**Please identify all customers of the Company that use snow making machines and indicate in your response whether these customers are billed by the metered or flat rate method.**

**RESPONSE:**

There are 2 customers, both metered, that use snow making machines:

- Summit Ski Area
- Mt Hood Ski Bowl



**DR 57**

**Please advise what actions or steps the Company has taken and plans the Company has made to ensure that water pressure does not fall below accepted standards due to snow making activities or other customer uses.**

**RESPONSE:**

The Company established new requirements for snow making customers after the incident of December 2016 (see DR 55). These requirements are:

- Total snow making activities are limited to no more than 350 GPM.
- Ski Bowl is required to provide phone or text notification to the Company prior to beginning daily snow making activities.
- The Company may, if necessary, suspend snow making during high domestic consumption periods.
- During snow making activities, the Company monitors water system pressure hourly to ensure no reduction in pressure occurs.

DR 53

**During the Pre-Hearing Conference held for UW 174 on February 20, 2018, an attendee expressed concerns relating to a proposed 480-unit condominium development in Government Camp. Please describe the proposed development and include in your response the status of the development project, the proposed completion date, and an explanation of whether Government Camp Water Company Inc. (Company) plans to provide water service to the development. Please provide all documents memorializing any negotiations or agreements by the Company to serve the proposed condominiums in this development.**

RESPONSE:

The development described during the Pre-Hearing Conference relates to a proposed federal land exchange between the United States Department of Agriculture and Mt. Hood Meadows. Conditional authority to enter the transaction was provided by Congress in 2009 (PUBLIC LAW 111-11, Sec. 1206—MAR. 30, 2009; 123 STAT. 991). The land exchange has not been finalized and remains inchoate.

The Company is not a party to the land exchange or potential project development plans should the exchange be finalized. The Company has not entered into any negotiations or agreements to serve a 480-unit condominium or residential development. The proposed acquisition land is within the Company's exclusive service area.

The Company has not and will not enter into any agreement to provide service that is contrary to OAR 860-036-1270 Refusal of Water Utility Service, which states:

- (1) A water utility must refuse to provide service if:
  - (b) The water utility does not have adequate facilities, resources, or capacity to provide the requested service without impairing service to other customers.

**DR 45**

**In Government Camp's Application filing for UW 145, in answer to Question 5 on page 8, the utility listed an outstanding loan balance of \$212,010 for a loan on the (glass fused steel 250 gallon) water tank to Maryanne Hill. Please provide the following loan information; 1) interest rate, 2) term of the loan & 3) loan amount.**

**RESPONSE:**

- Interest rate = 7.5%
- Term of the loan = 30 years
- Loan amount = \$225,000

**DR 46**

**In Government Camp's Application filing for UW 145, in answer to Question 5 on page 8, the utility listed an outstanding loan balance to Maryanne Hill in the amount of \$69,656, as a "Demand" loan at 6% interest. Please advise whether Government Camp still has this loan. If it does not explain why.**

**RESPONSE:**

No, Government Camp Water no longer has the loan referenced above. The loan was repaid and no longer exists.

**DR 47**

**In the utility's Application filed for UW 174, page 7, the outstanding balance of the water tank loan from Charlomont Hill, LLC is listed at \$204,020. The water tank loan is listed as the single outstanding loan in the utility's Application for UW 174. Please confirm whether Charlomont Hill, LLC is the creditor or debtor on this loan. Please also explain whether this is the same loan referenced in UW 145 and that is the subject of DR 45, above. In the response, please also provide: 1) the date and terms of this loan, 2) interest rate, and 3) the loan amount.**

**RESPONSE:**

Charlomont Hill, LLC is the creditor. It is the same loan referenced in UW 145 and is the subject of DR 45.

- 1) Date = September 2004, Loan term = 30 years
- 2) Interest rate = 7.5%
- 3) Loan amount = \$225,000

**DR 48**

**Please explain whether the water tank loan referred to on page 7 of the Application filed in UW 174, and referred to in DR 45 and 47, above, was restructured in any way following the conclusion of UW 145. If it was, please explain why the company did not seek approval from the OPUC for that restructuring. Please include in the response an explanation of the roles of Maryanne Hill and Charlomont Hill, LLC in that loan.**

**RESPONSE:**

No, the water tank loan has not been restructured in any way since the conclusion of UW 145. The loan has never been restructured in any way.

Ms. Hill owns Charlomont Hill, LLC. When the loan was taken out for the new water tank, she also owned the Company. Charlomont Hill, LLC loaned money to the Company for the water tank.

**DR 49**

**Please provide a copy all terms and agreements of the loan(s) referred to in DR45 through 48, above, including a copy of the loan agreement with Charlomont Hill, LLC for the water tank.**

**RESPONSE:**

There is no written loan document.

The terms are:

- 1) Date = September 2004
- 2) Loan term = 30 years
- 3) Interest rate = 7.5%
- 4) Loan amount = \$225,000

**DR 61**

**Please explain all terms and conditions that govern the loan from Charlomont Hill LLC for the water tank, including all terms and conditions regarding its repayment.**

RESPONSE:

The terms and conditions of the loan from Charlomont Hill LLC to the Company were provided in responses to DR 45 and DR 47.

RESPONSE to DR 45:

- Interest rate = 7.5%
- Term of the loan = 30 years
- Loan amount = \$225,000

RESPONSE TO DR 47:

Charlomont Hill, LLC is the creditor. It is the same loan referenced in UW 145 and is the subject of DR 45.

- 1) Date = September 2004, Loan term = 30 years
- 2) Interest rate = 7.5%
- 3) Loan amount = \$225,000

The Company pays Charlomont Hill LLC \$1,440.70 per month in repayment of the loan.



**DR 62**

Please provide a balance sheet that includes all monthly payments, interest billed, and the monthly loan balance for the \$225,000 loan from Charlomont Hill LLC for the water tank from its inception in 2004 through the 2016 test year.

RESPONSE:

See the Loan Schedule below.

<b>INTEREST AT 7.5%</b>					
<b>BEGINNING BALANCE</b>					<b>\$ 225,000.00</b>
		<b>PAYMENT</b>	<b>INTEREST</b>	<b>PRINCIPAL</b>	
OCT	2004	\$ 1,602.25	\$ 1,406.25	\$ 196.00	\$ 224,804.00
NOV		\$ 1,602.25	\$ 1,405.03	\$ 197.23	\$ 224,606.78
DEC		\$ 1,602.25	\$ 1,403.79	\$ 198.46	\$ 224,408.32
					\$ 224,408.32
JAN	2005	\$ 1,602.25	\$ 1,402.55	\$ 199.70	\$ 224,208.62
FEB		\$ 1,602.25	\$ 1,401.30	\$ 200.95	\$ 224,007.67
MAR		\$ 1,602.25	\$ 1,400.05	\$ 202.20	\$ 223,805.47
APRIL		\$ 1,602.25	\$ 1,398.78	\$ 203.47	\$ 223,602.01
MAY		\$ 1,602.25	\$ 1,397.51	\$ 204.74	\$ 223,397.27
JUNE		\$ 1,602.25	\$ 1,396.23	\$ 206.02	\$ 223,191.25
JULY		\$ 1,602.25	\$ 1,394.95	\$ 207.30	\$ 222,983.95
AUG		\$ 1,602.25	\$ 1,393.65	\$ 208.60	\$ 222,775.35
SEPT		\$ 1,602.25	\$ 1,392.35	\$ 209.90	\$ 222,565.44
OCT		\$ 1,602.25	\$ 1,391.03	\$ 211.22	\$ 222,354.23
NOV		\$ 1,602.25	\$ 1,389.71	\$ 212.54	\$ 222,141.69
DEC		\$ 1,602.25	\$ 1,388.39	\$ 213.86	\$ 221,927.83
					\$ 221,927.83
JAN	2006	\$ 1,602.25	\$ 1,387.05	\$ 215.20	\$ 221,712.62
FEB		\$ 1,602.25	\$ 1,385.70	\$ 216.55	\$ 221,496.08
MAR		\$ 1,602.25	\$ 1,384.35	\$ 217.90	\$ 221,278.18
APRIL		\$ 1,602.25	\$ 1,382.99	\$ 219.26	\$ 221,058.92
MAY		\$ 1,602.25	\$ 1,381.62	\$ 220.63	\$ 220,838.29
JUNE		\$ 1,602.25	\$ 1,380.24	\$ 222.01	\$ 220,616.27
JULY		\$ 1,602.25	\$ 1,378.85	\$ 223.40	\$ 220,392.88
AUG		\$ 1,602.25	\$ 1,377.46	\$ 224.79	\$ 220,168.08
SEPT		\$ 1,602.25	\$ 1,376.05	\$ 226.20	\$ 219,941.88
OCT		\$ 1,602.25	\$ 1,374.64	\$ 227.61	\$ 219,714.27
NOV		\$ 1,602.25	\$ 1,373.21	\$ 229.04	\$ 219,485.23
DEC		\$ 1,602.25	\$ 1,371.78	\$ 230.47	\$ 219,254.77

INTEREST AT 7.5%					
BEGINNING BALANCE					\$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
					\$ 219,254.77
JAN	2007	\$ 1,602.25	\$ 1,370.34	\$ 231.91	\$ 219,022.86
FEB		\$ 1,602.25	\$ 1,368.89	\$ 233.36	\$ 218,789.50
MAR		\$ 1,602.25	\$ 1,367.43	\$ 234.82	\$ 218,554.69
APRIL		\$ 1,602.25	\$ 1,365.97	\$ 236.28	\$ 218,318.40
MAY		\$ 1,602.25	\$ 1,364.49	\$ 237.76	\$ 218,080.64
JUNE		\$ 1,602.25	\$ 1,363.00	\$ 239.25	\$ 217,841.40
JULY		\$ 1,602.25	\$ 1,361.51	\$ 240.74	\$ 217,600.66
AUG		\$ 1,602.25	\$ 1,360.00	\$ 242.25	\$ 217,358.41
SEPT		\$ 1,602.25	\$ 1,358.49	\$ 243.76	\$ 217,114.65
OCT		\$ 1,602.25	\$ 1,356.97	\$ 245.28	\$ 216,869.37
NOV		\$ 1,602.25	\$ 1,355.43	\$ 246.82	\$ 216,622.55
DEC		\$ 1,602.25	\$ 1,353.89	\$ 248.36	\$ 216,374.19
					\$ 216,374.19
JAN	2008	\$ 1,602.25	\$ 1,352.34	\$ 249.91	\$ 216,124.28
FEB		\$ 1,602.25	\$ 1,350.78	\$ 251.47	\$ 215,872.81
MAR		\$ 1,602.25	\$ 1,349.21	\$ 253.04	\$ 215,619.76
APRIL		\$ 1,440.70	\$ 1,347.62	\$ 93.08	\$ 215,526.68
MAY		\$ 1,440.70	\$ 1,347.04	\$ 93.66	\$ 215,433.03
JUNE		\$ 1,440.70	\$ 1,346.46	\$ 94.24	\$ 215,338.78
JULY		\$ 1,440.70	\$ 1,345.87	\$ 94.83	\$ 215,243.95
AUG		\$ 1,440.70	\$ 1,345.27	\$ 95.43	\$ 215,148.52
SEPT		\$ 1,440.70	\$ 1,344.68	\$ 96.02	\$ 215,052.50
OCT		\$ 1,440.70	\$ 1,344.08	\$ 96.62	\$ 214,955.88
NOV		\$ 1,440.70	\$ 1,343.47	\$ 97.23	\$ 214,858.66
DEC		\$ 1,440.70	\$ 1,342.87	\$ 97.83	\$ 214,760.82
					\$ 214,760.82
JAN	2009	\$ 1,440.70	\$ 1,342.26	\$ 98.44	\$ 214,662.38
FEB		\$ 1,440.70	\$ 1,341.64	\$ 99.06	\$ 214,563.32
MAR		\$ 1,440.70	\$ 1,341.02	\$ 99.68	\$ 214,463.64
APRIL		\$ 1,440.70	\$ 1,340.40	\$ 100.30	\$ 214,363.34
MAY		\$ 1,440.70	\$ 1,339.77	\$ 100.93	\$ 214,262.41
JUNE		\$ 1,440.70	\$ 1,339.14	\$ 101.56	\$ 214,160.85
JULY		\$ 1,440.70	\$ 1,338.51	\$ 102.19	\$ 214,058.65
AUG		\$ 1,440.70	\$ 1,337.87	\$ 102.83	\$ 213,955.82
SEPT		\$ 1,440.70	\$ 1,337.22	\$ 103.48	\$ 213,852.34
OCT		\$ 1,440.70	\$ 1,336.58	\$ 104.12	\$ 213,748.22
NOV		\$ 1,440.70	\$ 1,335.93	\$ 104.77	\$ 213,643.45
DEC		\$ 1,440.70	\$ 1,335.27	\$ 105.43	\$ 213,538.02
					\$ 213,538.02

INTEREST AT 7.5%					
BEGINNING BALANCE					\$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
					\$ 213,538.02
JAN	2010	\$ 1,440.70	\$ 1,334.61	\$ 106.09	\$ 213,431.93
FEB		\$ 1,440.70	\$ 1,333.95	\$ 106.75	\$ 213,325.18
MAR		\$ 1,440.70	\$ 1,333.28	\$ 107.42	\$ 213,217.76
APRIL		\$ 1,440.70	\$ 1,332.61	\$ 108.09	\$ 213,109.67
MAY		\$ 1,440.70	\$ 1,331.94	\$ 108.76	\$ 213,000.91
JUNE		\$ 1,440.70	\$ 1,331.26	\$ 109.44	\$ 212,891.46
JULY		\$ 1,440.70	\$ 1,330.57	\$ 110.13	\$ 212,781.34
AUG		\$ 1,440.70	\$ 1,329.88	\$ 110.82	\$ 212,670.52
SEPT		\$ -	\$ 1,329.19	\$ (1,329.19)	\$ 213,999.71
OCT		\$ -	\$ 1,337.50	\$ (1,337.50)	\$ 215,337.21
NOV		\$ 1,148.38	\$ 1,345.86	\$ (197.48)	\$ 215,534.68
DEC		\$ 1,148.38	\$ 1,347.09	\$ (198.71)	\$ 215,733.40
JAN	2011	\$ 1,462.37	\$ 1,348.33	\$ 114.04	\$ 215,619.36
FEB		\$ 848.38	\$ 1,347.62	\$ (499.24)	\$ 216,118.60
MAR		\$ 1,148.38	\$ 1,350.74	\$ (202.36)	\$ 216,320.96
APRIL		\$ 1,148.38	\$ 1,352.01	\$ (203.63)	\$ 216,524.59
MAY		\$ 1,148.38	\$ 1,353.28	\$ (204.90)	\$ 216,729.49
JUNE		\$ 1,148.38	\$ 1,354.56	\$ (206.18)	\$ 216,935.67
JULY		\$ 1,148.38	\$ 1,355.85	\$ (207.47)	\$ 217,143.13
AUG		\$ -	\$ 1,357.14	\$ (1,357.14)	\$ 218,500.28
SEPT		\$ 7,245.30	\$ 1,365.63	\$ 5,879.67	\$ 212,620.61
OCT		\$ 1,440.70	\$ 1,328.88	\$ 111.82	\$ 212,508.78
NOV		\$ 1,440.70	\$ 1,328.18	\$ 112.52	\$ 212,396.26
DEC		\$ 1,440.70	\$ 1,327.48	\$ 113.22	\$ 212,283.04
2011 Total:		\$ 19,620.05	\$ 16,169.69	\$ 3,450.36	
JAN	2012	\$ 1,440.70	\$ 1,326.77	\$ 113.93	\$ 212,169.11
FEB		\$ 1,440.70	\$ 1,326.06	\$ 114.64	\$ 212,054.47
MAR		\$ 1,440.70	\$ 1,325.34	\$ 115.36	\$ 211,939.11
APRIL		\$ 1,440.70	\$ 1,324.62	\$ 116.08	\$ 211,823.03
MAY		\$ 1,440.70	\$ 1,323.89	\$ 116.81	\$ 211,706.22
JUNE		\$ 1,440.70	\$ 1,323.16	\$ 117.54	\$ 211,588.68
JULY		\$ 1,440.70	\$ 1,322.43	\$ 118.27	\$ 211,470.41
AUG		\$ 1,440.70	\$ 1,321.69	\$ 119.01	\$ 211,351.40
SEPT		\$ 1,440.70	\$ 1,320.95	\$ 119.75	\$ 211,231.65
OCT		\$ 1,440.70	\$ 1,320.20	\$ 120.50	\$ 211,111.15
NOV		\$ 1,440.70	\$ 1,319.44	\$ 121.26	\$ 210,989.89
DEC		\$ 1,440.70	\$ 1,318.69	\$ 122.01	\$ 210,867.88
2012 Total:		\$ 17,288.40	\$ 15,873.24	\$ 1,415.16	

INTEREST AT 7.5%					
BEGINNING BALANCE					\$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
JAN	2013	\$ 1,440.70	\$ 1,317.92	\$ 122.78	\$ 210,745.10
FEB		\$ 1,440.70	\$ 1,317.16	\$ 123.54	\$ 210,621.56
MAR		\$ 1,440.70	\$ 1,316.38	\$ 124.32	\$ 210,497.25
APRIL		\$ 1,440.70	\$ 1,315.61	\$ 125.09	\$ 210,372.15
MAY		\$ 1,440.70	\$ 1,314.83	\$ 125.87	\$ 210,246.28
JUNE		\$ 1,440.70	\$ 1,314.04	\$ 126.66	\$ 210,119.62
JULY		\$ 1,440.70	\$ 1,313.25	\$ 127.45	\$ 209,992.17
AUG		\$ 1,440.70	\$ 1,312.45	\$ 128.25	\$ 209,863.92
SEPT		\$ 1,440.70	\$ 1,311.65	\$ 129.05	\$ 209,734.87
OCT		\$ 1,440.70	\$ 1,310.84	\$ 129.86	\$ 209,605.01
NOV		\$ 1,440.70	\$ 1,310.03	\$ 130.67	\$ 209,474.34
DEC		\$ 1,440.70	\$ 1,309.21	\$ 131.49	\$ 209,342.86
2013 Total:		\$ 17,288.40	\$ 15,763.38	\$ 1,525.02	
JAN	2014	\$ 1,440.70	\$ 1,308.39	\$ 132.31	\$ 209,210.55
FEB		\$ 1,440.70	\$ 1,307.57	\$ 133.13	\$ 209,077.41
MAR		\$ 1,440.70	\$ 1,306.73	\$ 133.97	\$ 208,943.45
APRIL		\$ 1,440.70	\$ 1,305.90	\$ 134.80	\$ 208,808.64
MAY		\$ 1,440.70	\$ 1,305.05	\$ 135.65	\$ 208,673.00
JUNE		\$ 1,440.70	\$ 1,304.21	\$ 136.49	\$ 208,536.51
JULY		\$ 1,440.70	\$ 1,303.35	\$ 137.35	\$ 208,399.16
AUG		\$ 1,440.70	\$ 1,302.49	\$ 138.21	\$ 208,260.95
SEPT		\$ 1,440.70	\$ 1,301.63	\$ 139.07	\$ 208,121.88
OCT		\$ 1,440.70	\$ 1,300.76	\$ 139.94	\$ 207,981.95
NOV		\$ 1,440.70	\$ 1,299.89	\$ 140.81	\$ 207,841.13
DEC		\$ 1,440.70	\$ 1,299.01	\$ 141.69	\$ 207,699.44
JAN	2015	\$ 1,440.70	\$ 1,298.12	\$ 142.58	\$ 207,556.86
FEB		\$ 1,440.70	\$ 1,297.23	\$ 143.47	\$ 207,413.39
MAR		\$ 1,440.70	\$ 1,296.33	\$ 144.37	\$ 207,269.03
APRIL		\$ 1,440.70	\$ 1,295.43	\$ 145.27	\$ 207,123.76
MAY		\$ 1,440.70	\$ 1,294.52	\$ 146.18	\$ 206,977.58
JUNE		\$ 1,440.70	\$ 1,293.61	\$ 147.09	\$ 206,830.49
JULY		\$ 1,440.70	\$ 1,292.69	\$ 148.01	\$ 206,682.48
AUG		\$ 1,440.70	\$ 1,291.77	\$ 148.93	\$ 206,533.55
SEPT		\$ 1,440.70	\$ 1,290.83	\$ 149.87	\$ 206,383.68
OCT		\$ 1,440.70	\$ 1,289.90	\$ 150.80	\$ 206,232.88
NOV		\$ 1,440.70	\$ 1,288.96	\$ 151.74	\$ 206,081.13
DEC		\$ 1,440.70	\$ 1,288.01	\$ 152.69	\$ 205,928.44

INTEREST AT 7.5%					
BEGINNING BALANCE					\$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
JAN	2016	\$ 1,440.70	\$ 1,287.05	\$ 153.65	\$ 205,774.79
FEB		\$ 1,440.70	\$ 1,286.09	\$ 154.61	\$ 205,620.19
MAR		\$ 1,440.70	\$ 1,285.13	\$ 155.57	\$ 205,464.61
APRIL		\$ 1,440.70	\$ 1,284.15	\$ 156.55	\$ 205,308.07
MAY		\$ 1,440.70	\$ 1,283.18	\$ 157.52	\$ 205,150.54
JUNE		\$ 1,440.70	\$ 1,282.19	\$ 158.51	\$ 204,992.03
JULY		\$ 1,440.70	\$ 1,281.20	\$ 159.50	\$ 204,832.53
AUG		\$ 1,440.70	\$ 1,280.20	\$ 160.50	\$ 204,672.04
SEPT		\$ 1,440.70	\$ 1,279.20	\$ 161.50	\$ 204,510.54
OCT		\$ 1,440.70	\$ 1,278.19	\$ 162.51	\$ 204,348.03
NOV		\$ 1,440.70	\$ 1,277.18	\$ 163.52	\$ 204,184.50
DEC		\$ 1,440.70	\$ 1,276.15	\$ 164.55	\$ 204,019.96

**DR 63**

**Please provide a comparison of the current market rate and the 7.5 percent loan for \$204,020 currently owed to Charlomont Hill LLC.**

**RESPONSE:**

Objection. Data Requests are written interrogatories or requests for production of documents. OAR 860-001-0540. The submission of data requests upon a party is subject to the discovery rules in the Oregon Rules of Civil Procedure. OAR 860-001-0540(1). In addition, Data Requests must be commensurate with the needs of the case, the resources available to the parties, and the importance of the issues to which the discovery relates. OAR 860-001-0500(1). Discovery that is unreasonably cumulative, duplicative, burdensome, or overly broad is not allowed. OAR 860-001-0500(2).

DR 63 is neither a request for production nor an interrogatory. Rather it instructs the Company to undertake an independent investigation on the PUC Staff's behalf by conducting a market survey of current rates. This is not a permissible request under either OAR 860-001-0540 or the Oregon Rules of Civil Procedure. Moreover, DR 63 is not reasonably calculated to lead to admissible evidence. The Charlomont Hill LLC loan originated prior to the PUC exercise of regulatory jurisdiction over the Company. The Charlomont Hill LLC loan was also the subject of review in UW 145.

**DR 64**

**Please explain whether and how the Company sought alternative sources of financing for the water tank loan that the Company obtained from Charlomont Hill LLC, and provide documentation of the Company's inquiries regarding alternative sources of financing for that water tank.**

**RESPONSE:**

Objection. Data Request 64 is irrelevant and not reasonably calculated to lead to admissible evidence. ORCP 36(B)(1). The Company was not a PUC rate-regulated water company at the time the loan originated. As such, there was no requirement to seek alternative sources of financing for the water tank loan. In addition, the loan has been subjected to review in UW 145. UW 145 concluded in a final order that was not appealed.

**DR 65**

**Please provide a balance sheet that includes all monthly payments, interest billed, and the monthly loan balance for the \$69,656 "Demand" loan from Maryanne Hill from its inception through its payoff date.**

**RESPONSE:**

Objection. Data Requests are written interrogatories or requests for production of documents. OAR 860-001-0540. The submission of data requests upon a party is subject to the discovery rules in the Oregon Rules of Civil Procedure. OAR 860-001-0540(1). In addition, Data Requests must be commensurate with the needs of the case, the resources available to the parties, and the importance of the issues to which the discovery relates. OAR 860-001-0500(1). Discovery that is unreasonably cumulative, duplicative, burdensome, or overly broad is not allowed. OAR 860-001-0500(2).

DR 65 improperly seeks to compel the Company to create documents and work product. Not waiving the objection, the Company responds, the information sought is not readily available in a format conducive to easily creating a balance sheet as requested. The loan was paid off in full with no interest attached.



CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 200**

**Direct Testimony**

**May 3, 2018**

1 **Q. Please state your name, occupation, and business address.**

2 A. My name is Matt Muldoon. I am a Senior Economist for the Public Utility  
3 Commission of Oregon (Commission or OPUC). My business address is:  
4 201 High Street SE, Suite 100, Salem, OR 97301.

5 **Q. Please describe your educational background and work experience.**

6 A. My educational background and work experience are set forth in my Witness  
7 Qualification Statement, which is provided as Exhibit Staff/201.

8 **Q. What is the purpose of your testimony?**

9 A. My testimony is in support of Staff analyst Malia Brock’s Staff/100 testimony  
10 Issue 6 regarding: Cost of Common Equity, also known as Return on Equity  
11 (ROE) for Government Camp Water Company, Inc. (GCW or Company).

12 Ms. Brock applies other considerations to my findings and makes  
13 summary recommendations to the Commission in Exhibit No. Staff/100.

14 **Q. What are your findings?**

15 A. I recommend a point ROE of 9.25 percent within a range of reasonable ROEs  
16 of 8.41 to 9.25 percent.

17 **Q. Did you prepare a table showing the overall Cost of Capital (CoC)  
18 resulting from your analysis?**

19 A. No. My ROE is an input into the calculations for CoC and overall Rate of  
20 Return (ROR) provided in Ms. Brock’s Staff/100 testimony.

21 **Q. How is your testimony organized?**

22 A. My testimony is organized as follows:  
23 Sub-Issue 1 – Return on Equity (ROE) ..... 1  
24 Sub-Issue 2 – Three Stage Discounted Cash Flow (DCF) Modeling ..... 3

1 Sub-Issue 3 – Simple Single Stage (Gordon Growth) DCF Modeling ..... 11  
 2 Conclusion ..... 12

3 **Q. Did you prepare exhibits in support of your opening testimony?**

4 A. Yes. I prepared the following exhibits:

- 5 Staff/201 ..... Witness Qualification Statement
- 6 Staff/202 ... . Staff Three–Stage Discounted Cash Flow (DCF) ROE Modeling
- 7 Staff/203 ..... Treasury Inflation Protected Securities (TIPS) Analysis
- 8 Staff/204 . GDP Analysis with U.S. Bureau of Economic Analysis (BEA) Data
- 9 Staff/205 ..... Simple DCF Check on ROE Modeling
- 10 Staff/206 ..... Value Line (VL) Water Utility Profiles
- 11 Staff/207 ..... Merger News with Bearing on Water Utilities

12 **ISSUE 1 – COST OF COMMON EQUITY (ROE)**

13 **Q. Does your recommended ROE meet appropriate standards?**

14 A. Yes. The 9.25 percent ROE I recommend meets the *Hope* and *Bluefield*  
 15 standards, as well as the requirements of Oregon Revised Statute  
 16 (ORS) 756.040. My recommendations are consistent with establishing “fair  
 17 and reasonable rates” that are both “commensurate with the return on  
 18 investments in other enterprises having corresponding risks” and “sufficient to  
 19 ensure confidence in the financial integrity of the utility, allowing the utility to  
 20 establish and maintain credit ratings and attract capital.”<sup>1</sup>

21 **Q. Describe the analysis underlying Staff’s ROE recommendation.**

---

<sup>1</sup> See ORS 756.040(1) (a) and (b).

1 A. I rely on two different Three-Stage “Discounted Cash Flow” (DCF) models,<sup>2</sup>  
2 applied using a cohort group of peer utilities, to estimate the expected return  
3 on common equity required by investors.

4 As a check or directional vector aid that helps select a point estimate  
5 point in my Three-Stage DCF modeling generated range or reasonable  
6 ROEs, I use a Simple Gordon Growth DCF model. This Simple DCF model  
7 points to the upper end of my range of reasonable ROEs, while supporting my  
8 recommendation of a 9.25 percent point ROE.

9

10 **ISSUE 2 – THREE-STAGE DCF MODELING**

11 **Q. Describe the two DCF models that you used.**

12 A. My first model is a conventional Three-Stage Discounted Dividend Model,  
13 which Staff denotes as a “30-year Three-stage Discounted Dividend Model  
14 with Terminal Valuation based on Growing Perpetuity” (referred to as  
15 “Model X”).

16 My second model is the “30-year Three-stage Discounted Dividend  
17 Model with Terminal Valuation Based on P/E Ratio” (referred to as  
18 “Model Y”).

19 The three stages of the models are: 1) where I use near-term, next-five-  
20 year Value Line’s (VL) forecasts of dividends per share for each company;  
21 2) then five years where the rate of dividend growth converges from first

---

<sup>2</sup> See also the Commission’s discussion of multistage versus single-stage DCF models in Order No. 01-777 at page 27.

1 period to the growth rate in the third stage from years 10 to 30 in the future.

2 This is the third “long-term” stage, for which growth rates are discussed.

3 Model X includes a terminal value calculation, in which I assume  
4 dividends per share grow indefinitely at the rate of growth in Stage 3  
5 (“growing perpetuity”). This represents stock held indefinitely as an excellent  
6 alternative to investing in US Treasuries or other fixed income alternatives.

7 In contrast, Model Y terminates in a sale of stock where the price is  
8 determined by my escalated price/earnings (P/E) ratio. This represents stock  
9 held and receiving dividends toward a goal, and the sale of the stock once the  
10 goal is reached. For example, one saving toward retirement would sell the  
11 stock as needed in retirement.

12 **Q. How do you address dividend timing?**

13 A. Each model uses two sets of calculations that differ in the assumed timing of  
14 dividend receipt. One set of calculations is based on the standard  
15 assumption that the investor receives dividends at the end of each period.

16 The second set of calculations assumes the investor receives dividends  
17 at the beginning of each period. Each model averages the unadjusted ROE  
18 values to generate an Internal Rate of Return (IRR) produced with each set  
19 of calculations for each peer utility. This approach accounts for the time value  
20 of money, closely replicating actual quarterly receipt of dividends by investors.

21 **Q. How do you account for differences in peer utility capital structures?**

1 A. Each model employs the Hamada equation<sup>3</sup> to calculate an adjustment for  
2 differences in capital structure between each peer utility and my notional  
3 50 percent common equity capital structure.

4 **Q. What price do you use for each peer utility's stock?**

5 A. I use the average of closing prices for each utility from the first trading day in  
6 January, February, and March 2018 to represent a reasonable snapshot of  
7 2018, Q1.

8 **Q. How do Staff's two DCF models differ?**

9 A. Model X uses the calculation of a growing perpetuity as part of the terminal  
10 valuation in 2046.

11 Model Y uses the current price-earnings (P/E) ratio multiplied by the  
12 estimated "earnings per share" (EPS) in 2047, which establishes the stock's  
13 "selling price" in 2046 for terminal valuation. I estimate the 2047 EPS  
14 analogously with methods used to estimate the 2046 dividend in both models;  
15 i.e., based on VL estimates to which multiple growth rates are sequentially  
16 applied.

#### 17 **PEER SCREEN**

18 **Q. How did you select comparable companies (peers) to estimate ROE?**

19 A. I used companies that met the following criteria as peer utilities:

- 20 1. Covered by VL as an U.S. Water Utility;
- 21 2. Forecasted by VL to have Positive Dividend Growth;

---

<sup>3</sup> Dr. Robert Hamada's Equation as used in Staff/202, Muldoon/4 separates the financial risk of a levered firm, represented by its mix of common stock, preferred stock, and debt, from its fundamental business risk. Staff corrects its ROE modeling for divergent amounts of debt, also referred to as leverage, between the Company and its peers.

- 1           3. No Decline in Annual Dividend in Last Five Years per SNL and VL;  
2           and  
3           4. Primarily Domestic US Water Utility Sourced Cash Flows.

4           **Q. What cohort of companies resulted from your screens?**

5           A. Please see Exhibit Staff/202, Muldoon/2 for detailed Staff screens.

6           **Q. What is of most interest regarding your findings while screening**  
7           **publicly traded water utilities?**

8           A. American Water Works Company seeks to acquire Connecticut Water  
9           Services, Inc. Staff does not include these companies in its modeling,  
10          because of the uncertainties inherent in extrapolating current trends through  
11          substantial reorganization.

12

13

**SENSITIVITY ANALYSIS**

14          **Q. Did Staff also do sensitivity analysis to quantify the impact**  
15          **capitalization size has on required ROE?**

16          A. Yes. Staff's modeling utilized: A) water utilities that passed Staff's Screen,  
17          B) the earlier group restricted to Small- and Mid-Cap companies as a  
18          sensitivity, and C) the first group restricted to Small-Cap companies as  
19          another sensitivity. The gap between results for these categories of peers is  
20          also used to adjust modeling results upward to reflect the very small  
21          capitalization of GCW.

22          **Q. How does Staff apply informed judgment to its modeling?**

- 1 A. Staff examined its full range of ROE results including sensitivities. Within that  
2 range, Staff determined that 8.41 percent to 9.25 percent is a reasonable  
3 narrowing of focus on Staff's peer companies, reflective of utility size.

#### 4 **GROWTH RATES**

- 5 **Q. What long-term growth rates did you use in the two DCF models?<sup>4</sup>**

- 6 A. I used three different long-term growth rates, with different methods employed  
7 in developing each.

8 The first method uses the Congressional Budget Office's (CBO) growth  
9 rate. CBO is a non-partisan conservative source which has a long track  
10 record of reliable projections.

11 My second method uses a 50 percent weight applied to the average  
12 annual growth rate resulting from estimates of long-term GDP by the Energy  
13 Information Administration (EIA), PricewaterhouseCooper (PwC), the Social  
14 Security Administration (SSA), and the CBO, with each receiving one-quarter  
15 of the 50 percent weight. The remaining 50 percent is the average annual  
16 historical real U.S. Gross Domestic Product (GDP) growth rate, established  
17 using regression analysis, for the period 1980 through 2017,<sup>5</sup> to which I apply  
18 the Treasury Inflation-Protected Securities (TIPS) inflation forecast.

---

<sup>4</sup> Methods used here related to GDP-based growth rates are similar, if not identical to methods Staff has used in past proceedings. See, as an example, Staff's discussion of these methods and, to a limited extent, their conceptual underpinnings in Docket No. UE 233, at Exhibit Staff/800, Storm/46-52.

<sup>5</sup> Staff discussed this approach in recent Staff cost of equity testimony in several rate case proceedings. See, as an example, in Docket No. UE 233 Exhibit Staff/800, Storm/46, line 15 through Storm/50 line 3.



Last, I employ a nominal historical growth rate. See Table 1 below:

**Table 1**  
**Long-Run 20-Year GDP Growth Rates<sup>6</sup>**

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical, 1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
<b>Composite</b>				100%	4.41%
BEA Nominal Historical, 1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	100.0%	4.80%

**Q. Does this approach capture a reasonable set of investor expectations similar to Staff’s analysis in other recent general rate cases?**

A. Yes, Staff modeling captures the expectations of investors who think variously that: A) future conditions will mirror the past, B) federal agency expert analysis also informs the historical track record, and C) Relying on the CBO avoids excessive market hype that could overstate likely future earnings.

**Q. Did your analysis include the construction of a synthetic forward curve using U.S. Treasuries (UST) TIPS break even points?**

A. Yes. My forward curve is provided in Exhibit Staff/203, reflecting implied market-based inflationary expectations. Staff’s recommendations are consistent with market activity indicating investor expectations of future inflation.

<sup>6</sup> See Staff/202 for this material in electronic form.

1 **Q. Assume one ignored current downward adjustments by a broad**  
2 **spectrum of federal agencies and instead presumed that future U.S.**  
3 **GDP growth would look like the past 30 years. Would a ROE based**  
4 **on that assumption fall within Staff's recommended range?**

5 A. Yes, I extracted and ran regression on data from U.S. Bureau of Economic  
6 Analysis (BEA) to generate the annual real historical GDP growth rate. My  
7 recommended range of ROEs includes values that presume GDP growth over  
8 the next 30 years would look like that of the past 30 years.

#### 9 HAMADA EQUATION

10 **Q. Why is your application of the Hamada Equation to un-lever (remove**  
11 **debt from) peers and to re-lever at a 50 percent LT Debt reasonable?**

12 A. I employ the Hamada Equation as a check on the reasonableness of my  
13 modeling results. This eliminates bias based on differences in the amount of  
14 LT Debt in peer utilities.

#### 15 INFORMED STAFF ANALYSIS

16 **Q. Do you monitor and analyze current and projected market**  
17 **conditions?**

18 A. Yes. My analysis includes analysis of the current economic climate and its  
19 impact on my estimates of long-term growth. I also rely heavily on feeds from  
20 SNL Financial LC (SNL), Bloomberg, Moody's, S&P, WSJ and other sources  
21 to make sure that my financial understandings are reflective of investor  
22 expectations.

1           The key news continues to be: 1) a frantic state of acquisitions and  
2           mergers (M&A); 2) new services and partnerships offered to very small water  
3           utilities and institutions able to provide clear financial profiles to larger energy  
4           and water utilities as potential business partners; and 3) a somewhat higher  
5           expectation of future water company stock price appreciation after the market  
6           corrections earlier this year.

7           **Q. What do you mean by “clear financial profile”?**

8           A. A very small water utility or institutional water provider needs to be able to  
9           identify every financial obligation for which water utility assets were pledged  
10          as a guarantee, every form of indebtedness and the interest rates and  
11          maturities of same; and all other claims against and obligations of the utility.

12          **Q. Why is this important to managers who oversee both regulated and  
13          non-regulated businesses?**

14          A. Often such managers have limited time to work on divergent problems. At  
15          this time, stopping and putting the time into tracking down and organizing  
16          pertinent details of a small utilities' finances gives these managers new  
17          options in how to manage their utilities. Conversely, not having a clear  
18          financial profile can be a barrier to considering new ways to manage small  
19          water utility operations that are more cost effective while also consuming less  
20          manager attention.

21          **Q. Focusing back on your work, did you use robust and proven  
22          analytical methodologies?**

23          A. Yes. My methods are robust, and parallel Staff's work over the last decade.

**ISSUE 3 – SIMPLE DCF GORDON GROWTH MODEL**

**Q. The basic interpretation of your Simple DCF model is that one would look to the upper range of the more powerful Three-Stage DCF model range of reasonable ROEs. Did Staff take this approach?**

A. Yes, Staff recommends the top of its range of reasonable ROEs, 9.25 percent, for a point ROE.

**Q. What is the range of ROE's generated by the Simple DCF Model?**

A. The Simple DCF model generated a range of 8.79 to 9.41 percent and point estimate of 9.27 percent ROE. This is very supportive of Staff's recommended 9.25 point recommendation in its more robust Three-Stage DCF modeling.

**Q. Is there another way to interpret Staff's Simple DCF results?**

A. Yes, some cost-of-capital practitioners disaggregate results to highlight the highest results for each individual peer company. In Staff's Simple DCF Model this would be a result in an 11.61 percent upper ROE limit.

Staff emphasizes that this is not a best approximation of reasonable ROEs or appropriate point ROE from Staff's perspective. However, the Commission might feel that the very small customer base and lack of clarity around GCW financial obligations and encumbrance of assets merits upward consideration of ROE to reflect increased financial risk.

**Q. Does Staff recommend the Commission adopt such an interpretation?**

A. No. Staff puts greater reliance on its Three Stage DCF modeling results and recommends use of the Simple DCF as just a pointer or vector within the

1 Three-Stage DCF model results. When so employed, the Simple DCF 9.27  
2 percent point ROE check on Staff's primary larger model work is quite  
3 supportive of Staff's recommended 9.25 percent point ROE.

4

5

## **CONCLUSION**

6

### **Cost of Capital**

7

#### **Q. Is it practicable for GCW to adhere to best IOU practices?**

8

A. Yes, but corporate management attention is finite and confronted with many  
9 demands and opportunities. Very small water utilities have more options for  
10 more efficient management at lower cost than were available just a few years  
11 ago. However, to access new management approaches requires managers  
12 to assemble clear financial profiles of their small water utilities.

13

#### **Q. What is your recommendation regarding ROE?**

14

A. I recommend that the Commission consider a range of reasonable ROEs  
15 from 8.41 percent to 9.25 percent, and a point ROE of 9.25 percent  
16 developed using my two robust Three-Stage DCF models. I recommend the  
17 upper limit of my reasonable range of ROE's due to the results of my Simple  
18 DCF model, which I used as a pointer within the more powerful three-stage  
19 modeling results.

20

My sensitivity analysis examines and corrects for differences in capital  
21 structure and capitalization size.

22

**Q. How do your recommendations relate to Staff Witness Brock's  
23 recommendations?**

1 A. My recommendations are addressed and put into context by Ms. Brock in  
2 Exhibit Staff/100. Ms. Brock overlays other considerations to provide  
3 summary ROE, CoC and ROR recommendations to the Commission.

4 **Q. Does that conclude your testimony?**

5 A. Yes.

CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 201**

**Witness Qualifications Statement**

**May 3, 2018**

**WITNESS QUALIFICATION STATEMENT**

**NAME:** Matthew (Matt) J. Muldoon

**EMPLOYER:** PUBLIC UTILITY COMMISSION OF OREGON

**TITLE:** Senior Economist  
Energy – Rates Finance and Audit Division

**ADDRESS:** 201 High Street SE, Suite 100  
Salem, OR 97301

**EDUCATION:** In 1981, I received a Bachelor of Arts Degree in Political Science from the University of Chicago. In 2007, I received a Masters of Business Administration from Portland State University with a certificate in Finance.

**EXPERIENCE:** From April of 2008 to the present, I have been employed by the OPUC. My current responsibilities include financial and rate analysis with an emphasis on Cost of Capital. I have worked on Cost of Capital in the following general rate case dockets: AVA UG 186; UG 201, UG 246, UG 284, UG 288, and UG 325 current; NWN UG 221; PAC UE 246, and UE 263; PGE UE 262, UE 283, and UE 294; and CNG UG 287 and UG 305..

From 2002 to 2008 I was Executive Director of the Acceleration Transportation Rate Bureau, Inc. where I developed new rate structures for surface transportation and created metrics to insure program success within regulated processes.

I was the Vice President of Operations for Willamette Traffic Bureau, Inc. from 1993 to 2002. There I managed tariff rate compilation and analysis. I also developed new information systems and did sensitivity analysis for rate modeling.

**OTHER:** I have prepared, and defended formal testimony in contested hearings before the OPUC, ICC, STB, WUTC and ODOT. I have also prepared OPUC Staff testimony in BPA rate cases.



CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 202**

**3-Stage Discounted Cash Flow (DCF)  
Primary ROE Modeling**

**Exhibits in Support  
of Direct Testimony**

**May 3, 2018**

4.80% Annual Growth Rate - Stage 3  
**E.O.Y. Cash Flows**  
 Staff Model Y  
 EPS Growth to Determine a Sale Terminal Value

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	Terminal Value as % of NPV <sub>DIV</sub>	NPV @ IRR	Recent Price*	Initial Stage																	Transition Stage																	Final Stage																	Terminal Value	2046 Div	2046 Sale	2047	Screen #
								2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045																											
1	American States	Yes	Mid-Cap	7.4%	55.5%	0.00	(53.80)	0.99	1.07	1.16	1.25	1.35	1.45	1.61	1.74	1.86	1.95	2.05	2.14	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	3.59	3.76	3.94	4.13	4.33	4.54	4.76	252.43	4.98	247.45	8.65	1																						
2	Aqua America	Yes	Large-Cap	8.3%	47.6%	(0.00)	(34.82)	0.79	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	183.60	4.36	179.24	6.95	3																						
3	California Water	Yes	Mid-Cap	7.5%	57.9%	0.00	(38.63)	0.72	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	197.68	3.44	194.25	7.04	4																						
4	Connecticut Water	Merger	Merger	7.5%	55.3%	0.00	(55.07)	1.18	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	266.13	5.08	261.05	10.10	5																						
5	Middlesex Water	Yes	Small-Cap	8.1%	54.4%	0.00	(36.60)	0.86	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	205.12	3.70	201.42	7.59	7																						
6	SJW	Merger	Merger	7.2%	54.3%	0.00	(55.16)	1.04	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	239.70	5.12	234.58	12.16	8																						
7	York Water	Yes	Small Cap	8.2%	49.3%	0.00	(29.07)	0.65	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	152.87	3.43	149.44	5.40	9																						
<b>TOTALS</b>								<b>Mean</b>																																																							
								7.91%																	52.95%																	0%																					
								7.80%																	54.29%																	0%																					
								8.14%																	51.88%																	0%																					

VL H2O Screen  
 VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)  
 VL Small-Cap H2O Screen

**B.O.Y. Cash Flows**  
 Staff Model Y  
 EPS Growth

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	Terminal Value as % of NPV <sub>DIV</sub>	NPV @ IRR	Recent Price*	Initial Stage																	Transition Stage																	Final Stage																	Terminal Value	2046 Div	2046 Sale	2047	Screen #
								2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045																											
1	American States	Yes	Mid-Cap	7.5%	53.6%	0.00	(53.80)	1.07	1.16	1.25	1.35	1.45	1.61	1.74	1.86	1.95	2.05	2.14	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	3.59	3.76	3.94	4.13	4.33	4.54	4.76	4.98	252.67	5.22	247.45	8.65	1																						
2	Aqua America	Yes	Large-Cap	8.5%	45.4%	0.00	(34.82)	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	4.36	183.81	4.57	179.24	6.95	3																						
3	California Water	Yes	Mid-Cap	7.6%	56.1%	0.00	(38.63)	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	3.44	197.85	3.60	194.25	7.04	4																						
4	Connecticut Water	Merger	Merger	7.6%	53.7%	0.00	(55.07)	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	5.08	266.37	5.32	261.05	10.10	5																						
5	Middlesex Water	Yes	Small-Cap	8.2%	52.7%	0.00	(36.60)	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	3.70	205.30	3.88	201.42	7.59	7																						
6	SJW	Merger	Merger	7.3%	52.5%	0.00	(55.16)	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	5.12	239.95	5.36	234.58	12.16	8																						
7	York Water	Yes	Small Cap	8.4%	47.3%	0.00	(29.07)	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	153.04	3.59	149.44	5.40	9																						
<b>TOTALS</b>								<b>Mean</b>																																																							
								8.05%																	51.03%																	0%																					
								7.93%																	52.43%																	0%																					
								8.28%																	51.21%																	0%																					

VL H2O Screen  
 VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)  
 VL Small-Cap H2O Screen

**Average B.O.Y. & E.O.Y. Cash Flows**  
 Model Y  
 EPS Growth

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Average IRR	% of NPV <sub>DIV</sub>	Average 2016 - 2020 Dividend Growth Rates			Screen #			
						EOY	BOY	Average				
1	American States	Yes	Mid-Cap	7.4%	54.6%	8.1%	7.9%	8.0%	1			
2	Aqua America	Yes	Large-Cap	8.4%	46.5%	9.6%	10.0%	9.8%	3			
3	California Water	Yes	Mid-Cap	7.6%	57.0%	7.2%	8.0%	7.6%	4			
4	Connecticut Water	Merger	Merger	7.5%	54.5%	5.3%	5.3%	5.3%	5			
5	Middlesex Water	Yes	Small-Cap	8.1%	53.6%	5.4%	5.2%	5.3%	7			
6	SJW	Merger	Merger	7.2%	53.4%	6.9%	6.6%	6.8%	8			
7	York Water	Yes	Small Cap	8.3%	48.3%	9.1%	9.3%	9.2%	9			
<b>TOTALS</b>				<b>Mean</b>								
				7.98%			52.55%			7.4%		
				7.86%			53.56%			7.0%		
				8.21%			52.12%			6.6%		

VL H2O Screen  
 VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)  
 VL Small-Cap H2O Screen

UW 174 Staff ROE Summary

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical, 1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
<b>Composite</b>				100%	4.41%
BEA Nominal Historical, 1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	100.0%	4.80%

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity						
X	CBO	4.00%	Composite	4.41%	Historical	4.80%
1 Staff Screen	6.79%		7.15%		7.50%	
2 Low Cap (Small Cap & Mid Cap) Sensitivity	6.62%		6.99%		7.38%	
3 Small Cap Sensitivity	6.91%		7.27%		7.62%	

Hamada to Right →

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity (Hamada Adjusted)						
X	CBO	4.00%	Composite	4.41%	Historical	4.80%
1 Staff Screen	7.22%		7.58%		7.93%	
2 Low Cap (Small Cap & Mid Cap) Sensitivity	7.16%		7.53%		7.92%	
3 Small Cap Sensitivity	7.47%		7.83%		8.18%	

1  
2  
3

Model Y: 3 Stage DCF - Dividend Growth with Terminal Value as Sales based upon EPS Growth and Terminal Stock Sale						
Y	CBO	4.00%	Composite	4.41%	Historical	4.80%
1 Staff Screen	7.34%		7.67%		7.98%	
2 Low Cap (Small Cap & Mid Cap) Sensitivity	7.22%		7.55%		7.86%	
3 Small Cap Sensitivity	7.58%		7.90%		8.21%	

Hamada to Right →

Model Y: 3 Stage DCF - Dividend & EPS Growth with Terminal Value as Stock Sale (Hamada Adjusted)						
Y	CBO	4.00%	Composite	4.41%	Historical	4.80%
1 Staff Screen	7.77%		8.10%		8.41%	
2 Low Cap (Small Cap & Mid Cap) Sensitivity	7.76%		8.09%		8.40%	
3 Small Cap Sensitivity	8.14%		8.46%		8.77%	

1  
2  
3

- ❖ Hamada Adjustments to Right Fully Account for Differences in the Amount of Debt in Capital Structure
- ❖ Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by :
- ❖ Sensitivity Study to Account for Difference in Capitalization Size -- Maximum Upward Shift:

Above Right

Informed Range of Model 8.41% to 9.25% ROE

Point ROE Recommendation 9.25% ROE

Government Camp Water  
Peer Screen

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Water Utility</b>				<b>Screen:</b>											
<b>Government Camp Water (GCW)</b>				1 Water Utilities Followed by Value Line (VL) Passing Staff Screen 2 " that are Small & Medium Capitalization / VL See Note Below 3 " that are Small Capitalization / VL											
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	VL Corporate Name Gas Utility	NYSE NSDQ Ticker	VL Beta 4/21/2018	Yahoo Fin. Beta 4/21/2018	Yahoo Fin. Mkt Cap \$ Billions 4/21/2018	VL Mkt Cap \$ Billions 4/21/2018	Value Line Water Utility w VL Beta < 1 4/21/2018	SNL or VL No Div Declines 5 years	VL 2017 LT Debt < 56% of Capital	VL 2021-2023 LT Debt % of Capital	VL 2017 Common Equity % of Capital	VL Preferred Stock of Capital
1	American States	Yes	Yes	American States Water Company	AWR	0.65	-0.20	2.03	1.90	Yes	Pass	37.7%	46.0%	62.3%	0.0%
2	American Water	No	No	American Water Works Company, Inc.	AWK	0.65	0.05	15.09	15.50	Yes	Fail	54.6%	57.5%	45.3%	0.1%
3	Aqua America	Yes	No	Aqua America, Inc.	WTR	0.70	0.24	6.08	6.00	Yes	Pass	50.1%	53.5%	49.4%	0.5%
4	California Water	Yes	Yes	California Water Service Group	CWT	0.75	0.26	1.90	1.80	Yes	Pass	42.7%	42.0%	57.3%	0.0%
5	Connecticut Water	Merger	Merger	Connecticut Water Services, Inc.	CTWS	0.65	-0.42	0.79	0.75	Yes	Pass	46.3%	45.0%	53.7%	0.0%
6	Consolidated Water	No	No	Consolidated Water Co. Ltd.	CWCO	0.95	0.43	0.21	0.20	Yes	Pass	0.0%	0.0%	99.0%	1.0%
7	Middlesex Water	Yes	Yes	Middlesex Water Company	MSEX	0.80	0.14	0.66	0.60	Yes	Pass	37.5%	37.0%	61.8%	0.7%
8	SJW	Merger	Merger	SJW Group	SJW	0.70	-0.03	1.16	1.10	Yes	Pass	48.2%	48.0%	51.8%	0.0%
9	York Water	Yes	Yes	The York Water Company	YORW	0.80	0.34	0.42	0.40	Yes	Pass	43.0%	42.5%	57.0%	0.0%
TOTAL PEERS		7	6	Note: Staff further segregates VL Small-Cap in sensitivity modeling to test the effects of Capitalization Size on modeling results.											

**Government Camp Water  
Peer Screen**

1                      2                      3                      4                      17                      18

Screen:

1  
2  
3

**Water Utility**  
Government Camp Water  
(GCW)

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	VL Div. Growth Rate > 0%	Notes	Screen #
1	American States	Yes	Yes	Pass	Also has 11 contracts for military installations	1
2	American Water	No	No	Pass	Strategy: Growth through acquisitions and controlling expenses.	2
3	Aqua America	Yes	No	Pass	Key Focus on infrastructure upgrades	3
4	California Water	Yes	Yes	Pass	Substantial run up on Stock Price	4
5	Connecticut Water	Merger	Merger	Pass	Both Eversource Energy and SJW have bid to buy CT Water. CT Water favors SJW Likely M&A	5
6	Consolidated Water	No	No	Fail	Flat Dividend Growth, Higher Risk International Desalination Projects	6
7	Middlesex Water	Yes	Yes	Pass	Also operates water and wastewater services and upgrades under contract with cities and private clients	7
8	SJW	Merger	Merger	Pass	Both Eversource Energy and SJW have bid to buy CT Water. CT Water favors SJW Likely M&A	8
9	York Water	Yes	Yes	Pass	Oldest Water Utility in US - in continuous operation since 1816.	9
TOTAL PEERS		7	6			

Historical and Near Term  
VL Dividends, and  
VL Earnings per Share

GCW Water Peer Dividends

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2012 Yr	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2013 Yr	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Yr	2018 Yr	
1	1	American States	Yes	Mid-Cap	AWR	0.64	0.1775	0.1775	0.2025	0.2025	0.76	0.2025	0.2025	0.213	0.213	0.83	0.213	0.213	0.224	0.224	0.87	0.224	0.224	0.224	0.242	0.91	0.87	0.99	1.07
2	3	Aqua America	Yes	Large-Cap	WTR	0.54	0.14	0.14	0.152	0.152	0.58	0.152	0.152	0.165	0.165	0.63	0.165	0.165	0.178	0.178	0.69	0.178	0.178	0.1913	0.1913	0.74	0.69	0.79	0.85
3	4	California Water	Yes	Mid-Cap	CWT	0.63	0.16	0.16	0.16	0.16	0.64	0.1625	0.1625	0.1625	0.1625	0.65	0.1675	0.1675	0.1675	0.1675	0.67	0.1725	0.1725	0.1725	0.1725	0.69	0.67	0.72	0.75
4	5	Connecticut Water	Merger	Merger	CTWS	0.96	0.2425	0.2425	0.2475	0.2475	0.98	0.2475	0.2475	0.2575	0.2575	1.01	0.2575	0.2575	0.2675	0.2675	1.05	0.2675	0.2825	0.2825	0.2825	1.12	1.06	1.18	1.24
5	7	Middlesex Water	Yes	Small-Cap	MSEX	0.74	0.19	0.1875	0.1875	0.19	0.75	0.19	0.19	0.19	0.1925	0.76	0.1925	0.1925	0.1925	0.19875	0.78	0.19875	0.19875	0.19875	0.21125	0.81	0.78	0.86	0.91
6	8	SJW	Merger	Merger	SJW	0.71	0.1825	0.1825	0.1825	0.1825	0.73	0.1875	0.1875	0.1875	0.1875	0.75	0.195	0.195	0.195	0.195	0.78	0.2025	0.2025	0.2025	0.2025	0.81	0.78	1.04	1.12
7	9	York Water	Yes	Small Cap	YORW	0.54	0.14	0.138	0.138	0.138	0.55	0.1431	0.1431	0.1431	0.1431	0.57	0.1495	0.1495	0.1495	0.1555	0.60	0.1555	0.1555	0.1555	0.1602	0.63	0.60	0.65	0.70
TOTAL		7	6																										

(Low-Cap)

GCW Water Peer EPS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	Value Line Estimated EPS										Value Line Estimated Near Fu														
					2013 Yr	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 Yr	2018 Q1	2018 Q2	
1	1	American States	Yes	Mid-Cap	AWR	1.61	0.28	0.39	0.54	0.36	1.57	0.32	0.41	0.56	0.31	1.60	0.28	0.45	0.59	0.30	1.62	1.60	0.34	0.62	0.57	0.35	1.88	0.35	0.50
2	3	Aqua America	Yes	Large-Cap	WTR	1.16	0.24	0.31	0.38	0.27	1.20	0.27	0.32	0.38	0.17	1.14	0.29	0.34	0.41	0.28	1.32	1.22	0.28	0.34	0.43	0.30	1.35	0.30	0.35
3	4	California Water	Yes	Mid-Cap	CWT	1.02	(0.11)	0.36	0.70	0.24	1.19	0.03	0.21	0.52	0.18	0.94	(0.02)	0.24	0.48	0.31	1.01	1.05	0.02	0.39	0.70	0.29	1.40	0.08	0.42
4	5	Connecticut Water	Merger	Merger	CTWS	1.66	0.27	0.67	0.76	0.22	1.92	0.28	0.77	0.79	0.20	2.04	0.28	0.89	0.84	0.07	2.08	2.01	0.36	0.73	0.90	0.14	2.13	0.37	0.77
5	7	Middlesex Water	Yes	Small-Cap	MSEX	1.03	0.20	0.29	0.42	0.22	1.13	0.22	0.31	0.41	0.28	1.22	0.29	0.36	0.54	0.19	1.38	1.24	0.27	0.33	0.46	0.32	1.38	0.29	0.37
6	8	SJW	Merger	Merger	SJW	1.12	0.04	0.34	1.88	0.28	2.54	0.23	0.36	0.46	0.80	1.85	0.16	0.82	0.92	0.67	2.57	2.32	0.18	0.9	0.94	0.84	2.86	0.27	0.90
7	9	York Water	Yes	Small Cap	YORW	0.75	0.16	0.22	0.23	0.28	0.89	0.20	0.22	0.28	0.27	0.97	0.19	0.23	0.27	0.23	0.92	0.93	0.22	0.25	0.30	0.28	1.05	0.23	0.26
TOTAL		8	6																										

Historical and Near Term  
VL Dividends, and  
VL Earnings per Share

**GCW Water Peer Dividends**

1	2	3	4	5	30	31	32	33	34	35	Screen #	Screen #	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2019 Yr	2020 Yr	2021 Yr	2022 Yr	VL Avg 2020-22 / Yr	Div. Growth 2020-22 vs. 2014-16	Screen #	Screen #	
1	American States	Yes	Mid-Cap	AWR	1.16	1.25	1.35	1.45	1.35	7.5%	1	1	
2	Aqua America	Yes	Large-Cap	WTR	0.94	1.03	1.14	1.25	1.14	8.8%	3	2	
3	California Water	Yes	Mid-Cap	CWT	0.81	0.88	0.95	1.02	0.95	6.0%	4	3	
4	Connecticut Water	Merger	Merger	CTWS	1.31	1.38	1.45	1.52	1.45	5.4%	5	4	
5	Middlesex Water	Yes	Small-Cap	MSEX	0.96	1.01	1.06	1.11	1.06	5.2%	7	5	
6	SJW	Merger	Merger	SJW	1.19	1.27	1.36	1.45	1.36	9.7%	8	6	
7	York Water	Yes	Small Cap	YORW	0.77	0.84	0.92	1.00	0.92	7.4%	9	7	
TOTAL		7	6							VL H2O Screen	7.0%	Mean	
					(Low-Cap = Small- & Mid-Cap)					VL (Low Cap) H2O Screen	6.5%		
										VL Small-Cap) H2O Screen	6.3%		

**GCW Water Peer EPS**

1	2	3	4	5	30	31	32	33	34	35	36	37	38	Screen #	Screen #
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2018 Q3	2018 Q4	2018 Yr	2019 Yr	2020 Yr	2021 Yr	2022 Yr	VL Avg 2020-22 / Yr	EPS Growth 2020-22 vs. 2014-16	Screen #	Screen #
1	American States	Yes	Mid-Cap	AWR	0.60	0.40	1.85	1.99	2.13	2.29	2.45	2.29	6.2%	1	1
2	Aqua America	Yes	Large-Cap	WTR	0.44	0.31	1.40	1.52	1.66	1.81	1.95	1.81	6.7%	3	2
3	California Water	Yes	Mid-Cap	CWT	0.72	0.33	1.55	1.63	1.72	1.81	1.90	1.81	9.6%	4	3
4	Connecticut Water	Merger	Merger	CTWS	0.92	0.24	2.30	2.44	2.58	2.74	2.90	2.74	5.3%	5	4
5	Middlesex Water	Yes	Small-Cap	MSEX	0.55	0.34	1.55	1.67	1.81	1.96	2.10	1.96	7.8%	7	5
6	SJW	Merger	Merger	SJW	1.00	0.68	2.85	2.99	3.14	3.30	3.45	3.30	6.0%	8	6
7	York Water	Yes	Small Cap	YORW	0.32	0.29	1.10	1.19	1.29	1.40	1.51	1.40	7.1%	9	7
TOTAL		8	6							VL H2O Screen	7.5%	Mean			
					(Low-Cap = Small- & Mid-Cap)					VL (Low-Cap) H2O Screen	7.7%				

GCW GRC Staff Hamada Adjustments		Yahoo Finance			\$ Stock Closing Price 1st Trading Day of Month			3-Day Avg \$ Stock Price	Div Yield at Recent Price	VL 2017 Return on Common Equity	VL 2017 Cap Structure		VL Beta	2018 VL Tax Rate	Hamada Unlevered Beta	Relevered Beta Equity at 50.0%	Equity Risk Premium	Hamada Adjustment Equity At 50.0%	Screen #			
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	Jan. 1/1/2018	Feb. 2/1/2018	Mar. 3/1/2018				% Long Term Debt	% Common Equity										
1	1	American States	Yes	Mid-Cap	AWR	55.22	53.12	53.06	53.80	1.7%	13.1%		37.7	62.3	0.75	23.0%	0.51	0.91	4.20%	0.65%	1	1
2	3	Aqua America	Yes	Large-Cap	WTR	36.21	34.19	34.06	34.82	2.1%	12.2%		50.6	49.4	0.70	9.0%	0.36	0.69	4.20%	-0.03%	3	2
3	4	California Water	Yes	Mid-Cap	CWT	40.70	37.95	37.25	38.63	1.8%	9.7%		42.7	57.3	0.75	21.0%	0.47	0.85	4.20%	0.40%	4	3
4	5	Connecticut Water	Merger	Merger	CTWS	53.05	51.63	60.53	55.07	2.0%	8.8%		46.3	53.7	0.65	21.0%	0.39	0.69	4.20%	0.18%	5	4
5	7	Middlesex Water	Yes	Small-Cap	MSEX	37.66	35.44	36.70	36.60	2.2%	9.8%		37.5	61.8	0.80	21.0%	0.54	0.97	4.20%	0.71%	7	5
6	8	SJW	Merger	Merger	SJW	59.84	52.94	52.71	55.16	1.5%	12.8%		48.2	51.8	0.70	21.0%	0.40	0.72	4.20%	0.09%	8	6
7	9	York Water	Yes	Small Cap	YORW	31.65	28.10	27.45	29.07	2.2%	10.9%		43.0	57.0	0.80	21.0%	0.50	0.90	4.20%	0.41%	9	7
TOTAL		7	6																			

Dividend Yield = (Annual Dividends per Share) / Price per Share  
 (Low-Cap = Small- & Mid-Cap) VL H2O Screen 0.43% Mean  
 VL (Low Cap) H2O Screen 0.54%  
 VL Small-Cap) H2O Screen 0.56%

When Value Line (VL) Beta ratio exceeds 99.9 or earnings are negative, VL shows "NMF" for 'no meaningful figure'.



4.80% Annual Growth Rate - Stage 3

Dividend Growth with Terminal Value as Perpetuity

E.O.Y. Cash Flows

Staff

Model X

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	Terminal Value as % of NPV <sub>div</sub>	NPV @ IRR	Recent Price	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2045 Terminal Value	2046 Div	2046 Perpetuity	Screen #	
1	American States	Yes	Mid-Cap	7.1%	54.1%	0.00	(53.80)	0.99	1.07	1.16	1.25	1.35	1.45	1.61	1.74	1.86	1.95	2.05	2.14	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	3.59	3.76	3.94	4.13	4.33	4.54	4.76	229.49	4.98	224.50	1	
2	Aqua America	Yes	Large-Cap	7.9%	44.6%	0.00	(34.82)	0.79	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.88	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	151.89	4.36	147.53	3	
3	California Water	Yes	Mid-Cap	7.0%	55.1%	0.00	(38.63)	0.72	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	3.44	164.07	3.44	160.64	4
4	Connecticut Water	Merger	Merger	7.1%	53.3%	(0.00)	(55.07)	1.18	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	232.49	5.08	227.41	5	
5	Middlesex Water	Yes	Small-Cap	7.4%	50.2%	0.00	(36.60)	0.86	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	154.91	3.70	151.21	7	
6	SJW	Merger	Merger	7.1%	54.1%	0.00	(55.16)	1.04	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	235.41	5.12	230.30	8	
7	York Water	Yes	Small Cap	7.7%	46.3%	0.00	(29.07)	0.65	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	125.78	3.43	122.35	9
TOTALS				7	4	Mean																																			
					7.43%	50.05%	0%	VL H2O Screen																																	
					7.32%	51.41%	0%	VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)																																	
					7.55%	48.23%	0%	VL Small-Cap) H2O Screen																																	

B.O.Y. Cash Flows

Staff

Model X

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	Terminal Value as % of NPV <sub>div</sub>	NPV @ IRR	Recent Price	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2045 Terminal Value	2046 Div	2046 Perpetuity	Screen #
1	American States	Yes	Mid-Cap	7.25%	52.1%	(0.00)	(53.80)	1.07	1.16	1.25	1.35	1.45	1.61	1.74	1.86	1.95	2.05	2.14	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	3.59	3.76	3.94	4.13	4.33	4.54	4.76	4.98	228.87	5.22	223.65	1
2	Aqua America	Yes	Large-Cap	8.07%	42.3%	0.00	(34.82)	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.88	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	4.36	151.16	4.57	146.59	3
3	California Water	Yes	Mid-Cap	7.16%	52.4%	0.00	(38.63)	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	3.44	163.78	3.60	160.18	4
4	Connecticut Water	Merger	Merger	7.26%	51.6%	0.00	(55.07)	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	5.08	232.42	5.32	227.09	5
5	Middlesex Water	Yes	Small-Cap	7.49%	48.4%	0.00	(36.60)	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	3.70	154.85	3.88	150.97	7
6	SJW	Merger	Merger	7.25%	52.2%	0.00	(55.16)	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	5.12	234.91	5.36	229.55	8
7	York Water	Yes	Small Cap	7.89%	44.1%	0.00	(29.07)	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	125.28	3.59	121.69	9
TOTALS				7	6	Mean																																		
					7.57%	47.88%	0%	VL H2O Screen																																
					7.45%	48.50%	0%	VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)																																
					7.69%	46.26%	0%	VL Small-Cap) H2O Screen																																

Average B.O.Y. & E.O.Y. Cash Flows

Model X

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Average IRR	Terminal Value as % of NPV <sub>div</sub>	Average 2017 - 2021 Dividend Growth Rates			Screen #
						EOY	BOY	Average	
1	American States	Yes	Mid-Cap	7.19%	53.1%	8.1%	7.9%	8.0%	1
2	Aqua America	Yes	Large-Cap	7.98%	43.5%	9.6%	10.0%	9.8%	3
3	California Water	Yes	Mid-Cap	7.10%	53.8%	7.2%	8.0%	7.6%	4
4	Connecticut Water	Merger	Merger	7.20%	52.4%	5.3%	5.3%	5.3%	5
5	Middlesex Water	Yes	Small-Cap	7.43%	49.3%	5.4%	5.2%	5.3%	7
6	SJW	Merger	Merger	7.19%	53.1%	6.9%	6.6%	6.8%	8
7	York Water	Yes	Small Cap	7.81%	45.2%	9.1%	9.3%	9.2%	9
TOTALS				7	6	Mean			
					7.50%	48.96%	8%	VL H2O Screen	
					7.38%	50.34%	7%	VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)	
					7.62%	47.25%	7%	VL Small-Cap) H2O Screen	

CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 203**

**Staff Synthetic Forward Curve TIPS Analysis  
Market-Implied Inflation Expectations**

**Exhibits in Support  
of Direct Testimony**

**May 3, 2018**

2028 through 2047 TIPS-Implied Average Annual Inflation Rate:

1.99%

Yr. End Mo.-Yr.	Years	Individually Implied Price Levels					Implied Forward Curve/Price Level					Implied Price Level	Check
		5-Yr	7-Yr	10-Yr	20-Yr	30-Yr	5-Yr	7-Yr	10-Yr	20-Yr	30-Yr		
Dec-17	0	100.00	100.00	100.00	100.00	100.00	100.00					100.00	
Dec-18	1	101.75	101.81	101.87	101.89	101.95	101.75					101.75	
Dec-19	2	103.52	103.65	103.77	103.82	103.93	103.52					103.52	
Dec-20	3	105.33	105.52	105.72	105.79	105.95	105.33					105.33	
Dec-21	4	107.17	107.42	107.69	107.79	108.02	107.17					107.17	
Dec-22	5	109.04	109.37	109.71	109.83	110.12	109.04					109.04	
Dec-23	6		111.34	111.76	111.91	112.26		111.18				111.18	
Dec-24	7		113.35	113.85	114.03	114.45		113.35				113.35	
Dec-25	8			115.98	116.19	116.68			115.64			115.64	
Dec-26	9			118.15	118.39	118.95			117.97			117.97	
Dec-27	10			120.35	120.63	121.26			120.35			120.35	
Dec-28	11				122.91	123.62				122.66		122.66	122.74
Dec-29	12				125.24	126.03				125.01		125.01	125.18
Dec-30	13				127.61	128.48				127.41		127.41	127.67
Dec-31	14				130.03	130.99				129.85		129.85	130.20
Dec-32	15				132.49	133.54				132.34		132.34	132.78
Dec-33	16				135.00	136.13				134.88		134.88	135.42
Dec-34	17				137.56	138.78				137.46		137.46	138.11
Dec-35	18				140.16	141.49				140.10		140.10	140.85
Dec-36	19				142.81	144.24				142.78		142.78	143.65
Dec-37	20				145.52	147.05				145.52		145.52	146.50
Dec-38	21					149.91					148.51	148.51	149.40
Dec-39	22					152.83					151.56	151.56	152.37
Dec-40	23					155.80					154.67	154.67	155.39
Dec-41	24					158.84					157.84	157.84	158.48
Dec-42	25					161.93					161.08	161.08	161.63
Dec-43	26					165.08					164.39	164.39	164.83
Dec-44	27					168.30					167.77	167.77	168.11
Dec-45	28					171.57					171.21	171.21	171.44
Dec-46	29					174.91					174.73	174.73	174.85
Dec-47	30					178.32					178.32	178.32	178.32

Average Quarterly Values for FRB H15 Data

See FRB H.15 Tab for Data Feed Sources.

Staff TIPS Analysis

Quarterly Aggregation

Average Monthly Inflation Indexed Rates by Quarter					
Qtr	TIPS-05m	TIPS-07m	TIPS-10m	TIPS-20m	TIPS-30m
2003-Q1	1.33	1.81	2.07		
2003-Q2	1.15	1.61	1.94		
2003-Q3	1.36	1.84	2.21		
2003-Q4	1.24	1.65	2.01		
2004-Q1	0.82	1.26	1.71		
2004-Q2	1.26	1.69	2.05		
2004-Q3	1.17	1.55	1.89	2.28	
2004-Q4	0.93	1.30	1.69	2.08	
2005-Q1	1.17	1.41	1.71	1.93	
2005-Q2	1.30	1.44	1.68	1.83	
2005-Q3	1.59	1.70	1.82	1.98	
2005-Q4	1.92	1.98	2.04	2.13	
2006-Q1	2.00	2.05	2.09	2.08	
2006-Q2	2.34	2.39	2.46	2.48	
2006-Q3	2.37	2.37	2.37	2.38	
2006-Q4	2.40	2.36	2.32	2.29	
2007-Q1	2.28	2.33	2.33	2.36	
2007-Q2	2.35	2.40	2.44	2.49	
2007-Q3	2.38	2.44	2.45	2.46	
2007-Q4	1.54	1.81	1.92	2.11	
2008-Q1	0.58	1.02	1.32	1.81	
2008-Q2	0.79	1.17	1.48	2.03	
2008-Q3	1.18	1.47	1.70	2.16	
2008-Q4	2.73	2.92	2.60	2.73	
2009-Q1	1.37	1.54	1.79	2.34	
2009-Q2	1.12	1.37	1.72	2.31	
2009-Q3	1.17	1.41	1.74	2.22	
2009-Q4	0.58	0.94	1.37	1.98	
2010-Q1	0.47	0.94	1.43	2.00	2.16
2010-Q2	0.46	0.91	1.36	1.77	1.88
2010-Q3	0.20	0.57	1.06	1.68	1.76
2010-Q4	-0.11	0.28	0.75	1.48	1.65
2011-Q1	0.07	0.67	1.09	1.71	2.00
2011-Q2	-0.29	0.33	0.80	1.49	1.78
2011-Q3	-0.65	-0.22	0.28	0.95	1.25
2011-Q4	-0.75	-0.39	0.05	0.61	0.85
2012-Q1	-1.02	-0.60	-0.17	0.51	0.78
2012-Q2	-1.08	-0.75	-0.35	0.35	0.66
2012-Q3	-1.27	-1.01	-0.63	0.02	0.43
2012-Q4	-1.42	-1.15	-0.76	-0.02	0.36
2013-Q1	-1.40	-0.98	-0.59	0.19	0.56
2013-Q2	-1.04	-0.62	-0.25	0.47	0.80
2013-Q3	-0.32	0.17	0.56	1.16	1.43
2013-Q4	-0.29	0.25	0.57	1.19	1.50
2014-Q1	-0.16	0.37	0.58	1.11	1.39
2014-Q2	-0.25	0.27	0.43	0.88	1.14
2014-Q3	-0.13	0.24	0.32	0.72	0.98
2014-Q4	0.19	0.39	0.45	0.75	0.95
2015-Q1	0.11	0.23	0.27	0.52	0.71
2015-Q2	-0.10	0.22	0.30	0.67	0.91
2015-Q3	0.26	0.48	0.57	0.92	1.14
2015-Q4	0.36	0.51	0.66	1.02	1.24
2016-Q1	0.15	0.32	0.49	0.88	1.11
2016-Q2	-0.24	-0.05	0.19	0.62	0.85
2016-Q3	-0.22	-0.09	0.08	0.44	0.62
2016-Q4	-0.06	0.12	0.33	0.69	0.86
2017-Q1	0.07	0.33	0.44	0.75	0.95
2017-Q2	0.10	0.30	0.44	0.76	0.94
2017-Q3	0.17	0.36	0.45	0.75	0.94
2017-Q4	0.32	0.44	0.50	0.72	0.87

Average Monthly Nominal UST Rates by Quarter					
Qtr	UST-05m	UST-07m	UST-10m	UST-20m	UST-30m
2003-Q1	2.91	3.46	3.92	4.90	
2003-Q2	2.57	3.13	3.62	4.59	
2003-Q3	3.14	3.72	4.23	5.17	
2003-Q4	3.25	3.78	4.29	5.16	
2004-Q1	2.99	3.52	4.02	4.89	
2004-Q2	3.72	4.18	4.60	5.36	
2004-Q3	3.51	3.92	4.30	5.07	
2004-Q4	3.49	3.85	4.17	4.87	
2005-Q1	3.88	4.09	4.30	4.76	
2005-Q2	3.87	3.99	4.16	4.55	
2005-Q3	4.04	4.11	4.21	4.51	
2005-Q4	4.39	4.42	4.49	4.77	
2006-Q1	4.55	4.55	4.57	4.76	4.64
2006-Q2	4.99	5.02	5.07	5.29	5.14
2006-Q3	4.84	4.85	4.90	5.09	4.99
2006-Q4	4.60	4.60	4.63	4.83	4.74
2007-Q1	4.65	4.65	4.68	4.90	4.80
2007-Q2	4.76	4.79	4.85	5.07	4.99
2007-Q3	4.50	4.60	4.73	5.01	4.94
2007-Q4	3.79	3.98	4.26	4.65	4.61
2008-Q1	2.75	3.15	3.66	4.40	4.41
2008-Q2	3.16	3.46	3.89	4.59	4.58
2008-Q3	3.11	3.44	3.86	4.49	4.45
2008-Q4	2.18	2.63	3.25	3.97	3.68
2009-Q1	1.76	2.23	2.74	3.69	3.45
2009-Q2	2.23	2.88	3.31	4.19	4.17
2009-Q3	2.47	3.12	3.52	4.28	4.32
2009-Q4	2.30	2.98	3.46	4.27	4.33
2010-Q1	2.42	3.16	3.72	4.49	4.62
2010-Q2	2.25	2.93	3.49	4.20	4.37
2010-Q3	1.55	2.19	2.79	3.60	3.85
2010-Q4	1.49	2.18	2.86	3.84	4.16
2011-Q1	2.12	2.83	3.46	4.32	4.56
2011-Q2	1.86	2.55	3.21	4.07	4.34
2011-Q3	1.15	1.78	2.43	3.34	3.70
2011-Q4	0.95	1.50	2.05	2.75	3.04
2012-Q1	0.90	1.44	2.04	2.80	3.14
2012-Q2	0.79	1.24	1.82	2.55	2.94
2012-Q3	0.67	1.08	1.64	2.37	2.75
2012-Q4	0.69	1.12	1.71	2.46	2.86
2013-Q1	0.83	1.32	1.95	2.75	3.14
2013-Q2	0.92	1.39	2.00	2.78	3.15
2013-Q3	1.51	2.12	2.71	3.44	3.72
2013-Q4	1.44	2.12	2.75	3.50	3.79
2014-Q1	1.60	2.22	2.76	3.42	3.68
2014-Q2	1.66	2.19	2.62	3.18	2.87
2014-Q3	1.70	2.16	2.50	3.01	3.26
2014-Q4	1.60	2.00	2.28	2.69	2.97
2015-Q1	1.45	1.77	1.97	2.32	2.55
2015-Q2	1.52	1.91	2.17	2.62	2.89
2015-Q3	1.55	1.94	2.22	2.65	2.96
2015-Q4	1.59	1.94	2.19	2.60	2.96
2016-Q1	1.37	1.69	1.92	2.32	2.72
2016-Q2	1.24	1.54	1.75	2.15	2.57
2016-Q3	1.13	1.40	1.56	1.91	2.28
2016-Q4	1.61	1.93	2.13	2.52	2.82
2017-Q1	1.94	2.25	2.44	2.78	3.04
2017-Q2	1.81	2.07	2.26	2.64	2.90
2017-Q3	1.82	2.06	2.24	2.58	2.82
2017-Q4	2.07	2.25	2.37	2.62	2.82

Implied Market-based Inflationary Expectations					
Qtr	5-Yr	7-Yr	10-Yr	20-Yr	30-Yr
2003-Q1	1.58	1.65	1.85		
2003-Q2	1.42	1.52	1.68		
2003-Q3	1.78	1.87	2.03		
2003-Q4	2.01	2.13	2.28		
2004-Q1	2.17	2.26	2.31		
2004-Q2	2.47	2.50	2.55		
2004-Q3	2.34	2.37	2.41	2.79	
2004-Q4	2.56	2.55	2.48	2.79	
2005-Q1	2.72	2.68	2.58	2.83	
2005-Q2	2.57	2.55	2.48	2.72	
2005-Q3	2.44	2.41	2.39	2.52	
2005-Q4	2.47	2.44	2.45	2.64	
2006-Q1	2.55	2.50	2.48	2.69	
2006-Q2	2.65	2.62	2.61	2.80	
2006-Q3	2.47	2.48	2.52	2.71	
2006-Q4	2.20	2.24	2.31	2.54	
2007-Q1	2.36	2.32	2.35	2.54	
2007-Q2	2.41	2.39	2.41	2.58	
2007-Q3	2.13	2.16	2.28	2.55	
2007-Q4	2.24	2.17	2.34	2.54	
2008-Q1	2.17	2.13	2.34	2.59	
2008-Q2	2.37	2.29	2.40	2.56	
2008-Q3	1.93	1.96	2.16	2.33	
2008-Q4	-0.55	-0.29	0.65	1.24	
2009-Q1	0.39	0.69	0.95	1.35	
2009-Q2	1.11	1.51	1.60	1.88	
2009-Q3	1.30	1.72	1.77	2.06	
2009-Q4	1.72	2.04	2.09	2.29	
2010-Q1	1.96	2.22	2.28	2.49	2.47
2010-Q2	1.80	2.03	2.13	2.43	2.49
2010-Q3	1.35	1.63	1.73	1.92	2.09
2010-Q4	1.59	1.90	2.12	2.36	2.51
2011-Q1	2.05	2.16	2.37	2.61	2.56
2011-Q2	2.15	2.22	2.41	2.57	2.56
2011-Q3	1.81	2.00	2.15	2.39	2.45
2011-Q4	1.71	1.89	1.99	2.14	2.19
2012-Q1	1.92	2.04	2.20	2.29	2.36
2012-Q2	1.86	1.99	2.17	2.21	2.28
2012-Q3	1.94	2.09	2.28	2.35	2.31
2012-Q4	2.11	2.27	2.47	2.48	2.50
2013-Q1	2.23	2.31	2.54	2.55	2.58
2013-Q2	1.95	2.01	2.25	2.32	2.34
2013-Q3	1.82	1.95	2.15	2.29	2.29
2013-Q4	1.73	1.86	2.17	2.31	2.29
2014-Q1	1.77	1.85	2.18	2.30	2.29
2014-Q2	1.90	1.92	2.20	2.30	1.73
2014-Q3	1.83	1.92	2.18	2.28	2.29
2014-Q4	1.41	1.61	1.83	1.95	2.02
2015-Q1	1.35	1.54	1.70	1.79	1.85
2015-Q2	1.63	1.69	1.86	1.95	1.97
2015-Q3	1.29	1.47	1.65	1.73	1.82
2015-Q4	1.23	1.43	1.53	1.58	1.72
2016-Q1	1.23	1.37	1.43	1.45	1.61
2016-Q2	1.48	1.58	1.56	1.53	1.72
2016-Q3	1.35	1.49	1.48	1.47	1.66
2016-Q4	1.67	1.80	1.80	1.83	1.96
2017-Q1	1.87	1.92	2.01	2.03	2.10
2017-Q2	1.71	1.78	1.82	1.88	1.96
2017-Q3	1.65	1.70	1.79	1.83	1.88
2017-Q4	1.75	1.81	1.87	1.89	1.95

FRB H.15 Market Yield on U.S. Treasury (UST) Securities at Constant Maturity, Quoted on an Investment Basis in Percent per Year

Staff Accessed, Mar. 8, 2018 at: <http://federalreserve.gov/releases/h15/data.htm>

Monthly					Annual															
TIPS-05m	TIPS-07m	TIPS-10m	TIPS-20m	TIPS-30m	UST-05m	UST-07m	UST-10m	UST-20m	UST-30m	TIPS-05a	TIPS-07a	TIPS-10a	TIPS-20a	TIPS-30a	UST-05a	UST-07a	UST-10a	UST-20a	UST-30a	
Year	Inflation Indexed	H.15 ID			Year	Inflation Indexed	H.15 ID			Year	Inflation Indexed	H.15 ID			Year	Inflation Indexed	H.15 ID			
2003-01	1.65	2.10	2.29		2003-01	3.05	3.60	4.05	5.02	2003	1.27	1.73	2.06		2003	2.97	3.52	4.01	4.96	
2003-02	1.24	1.74	1.99		2003-02	2.90	3.45	3.90	4.87	2004	1.04	1.45	1.83	2.14	2004	3.43	3.87	4.27	5.04	
2003-03	1.09	1.60	1.94		2003-03	2.78	3.34	3.81	4.82	2005	1.50	1.83	1.81	1.97	2005	4.05	4.15	4.29	4.64	
2003-04	1.36	1.85	2.18		2003-04	2.93	3.47	3.96	4.91	2006	2.28	2.29	2.31	2.31	2006	4.75	4.76	4.80	5.00	4.91
2003-05	1.18	1.61	1.91		2003-05	2.52	3.07	3.57	4.52	2007	2.15	2.25	2.29	2.36	2007	4.43	4.51	4.63	4.91	4.84
2003-06	0.91	1.37	1.72		2003-06	2.27	2.84	3.33	4.34	2008	1.30	1.63	1.77	2.18	2008	2.80	3.17	3.66	4.36	4.28
2003-07	1.30	1.76	2.11		2003-07	2.87	3.45	3.98	4.92	2009	1.06	1.32	1.66	2.21	2009	2.20	2.82	3.26	4.11	4.08
2003-08	1.48	1.97	2.32		2003-08	3.37	3.96	4.45	5.39	2010	0.26	0.68	1.15	1.73	2010	1.93	2.62	3.22	4.03	4.25
2003-09	1.29	1.80	2.19		2003-09	3.19	3.74	4.27	5.21	2011	-0.41	0.09	0.55	1.19	2011	1.52	2.16	2.78	3.62	3.91
2003-10	1.21	1.68	2.08		2003-10	3.37	3.95	4.28	5.21	2012	-1.19	-0.87	-0.48	0.22	2012	0.76	1.22	1.80	2.54	2.92
2003-11	1.27	1.64	1.96		2003-11	3.28	3.81	4.30	5.17	2013	0.76	-0.29	0.07	0.75	2013	1.17	1.74	2.35	3.12	3.45
2003-12	1.23	1.64	1.98		2003-12	3.27	3.79	4.27	5.11	2014	-0.09	0.32	0.44	0.86	2014	1.64	2.14	2.54	3.07	3.34
2004-01	1.09	1.48	1.89		2004-01	3.12	3.65	4.15	5.01	2015	0.15	0.36	0.45	0.78	2015	1.53	1.89	2.14	2.55	2.84
2004-02	0.86	1.31	1.76		2004-02	3.07	3.59	4.08	4.94	2016	-0.01	0.07	0.27	0.65	2016	1.33	1.63	1.84	2.22	2.59
2004-03	0.52	0.98	1.47		2004-03	2.79	3.31	3.83	4.72	2017	0.17	0.36	0.46	0.75	2017	1.91	2.16	2.33	2.65	2.89
2004-04	1.02	1.49	1.90		2004-04	3.39	3.89	4.35	5.16											
2004-05	1.34	1.77	2.09		2004-05	3.85	4.31	4.72	5.46											
2004-06	1.41	1.80	2.15		2004-06	3.93	4.35	4.73	5.45											
2004-07	1.29	1.68	2.02	2.44	2004-07	3.89	4.11	4.50	5.24											
2004-08	1.12	1.51	1.85	2.23	2004-08	3.47	3.90	4.28	5.07											
2004-09	1.10	1.46	1.80	2.18	2004-09	3.36	3.75	4.13	4.89											
2004-10	0.97	1.35	1.73	2.13	2004-10	3.35	3.75	4.10	4.85											
2004-11	0.90	1.27	1.68	2.09	2004-11	3.53	3.88	4.19	4.89											
2004-12	0.92	1.28	1.67	2.02	2004-12	3.60	3.93	4.23	4.88											
2005-01	1.13	1.40	1.72	1.98	2005-01	3.71	3.97	4.22	4.77											
2005-02	1.08	1.33	1.63	1.85	2005-02	3.77	3.97	4.17	4.61											
2005-03	1.29	1.49	1.79	1.95	2005-03	4.17	4.33	4.50	4.89											
2005-04	1.23	1.42	1.71	1.87	2005-04	4.00	4.16	4.34	4.75											
2005-05	1.28	1.41	1.65	1.82	2005-05	3.85	3.94	4.14	4.56											
2005-06	1.39	1.49	1.67	1.80	2005-06	3.77	3.86	4.00	4.35											
2005-07	1.67	1.75	1.88	2.00	2005-07	3.92	4.08	4.18	4.48											
2005-08	1.71	1.79	1.89	2.02	2005-08	4.12	4.16	4.26	4.53											
2005-09	1.40	1.56	1.70	1.93	2005-09	4.01	4.08	4.20	4.51											
2005-10	1.70	1.82	1.94	2.09	2005-10	4.33	4.38	4.46	4.74											
2005-11	1.97	2.03	2.06	2.16	2005-11	4.45	4.48	4.54	4.83											
2005-12	2.09	2.10	2.12	2.14	2005-12	4.39	4.41	4.47	4.73											
2006-01	1.93	1.98	2.01	2.05	2006-01	4.35	4.37	4.42	4.65											
2006-02	1.98	2.02	2.05	2.01	2006-02	4.57	4.56	4.57	4.73											
2006-03	2.09	2.15	2.20	2.17	2006-03	4.72	4.71	4.72	4.91											
2006-04	2.26	2.34	2.41	2.43	2006-04	4.90	4.94	4.99	5.22											
2006-05	2.30	2.36	2.45	2.48	2006-05	5.00	5.03	5.11	5.35											
2006-06	2.45	2.48	2.53	2.54	2006-06	5.07	5.08	5.11	5.29											
2006-07	2.46	2.48	2.51	2.52	2006-07	5.14	5.05	5.09	5.25											
2006-08	2.27	2.29	2.29	2.31	2006-08	4.82	4.83	4.88	5.08											
2006-09	2.38	2.35	2.32	2.31	2006-09	4.67	4.68	4.72	4.93											
2006-10	2.51	2.45	2.41	2.38	2006-10	4.69	4.69	4.73	4.94											
2006-11	2.41	2.35	2.29	2.23	2006-11	4.58	4.58	4.60	4.78											
2006-12	2.28	2.28	2.25	2.28	2006-12	4.53	4.54	4.56	4.78											
2007-01	2.47	2.47	2.44	2.42	2007-01	4.75	4.75	4.76	4.95											
2007-02	2.34	2.38	2.36	2.38	2007-02	4.71	4.71	4.72	4.93											
2007-03	2.04	2.14	2.18	2.27	2007-03	4.48	4.50	4.56	4.81											
2007-04	2.12	2.20	2.26	2.35	2007-04	4.59	4.62	4.69	4.95											
2007-05	2.29	2.32	2.37	2.45	2007-05	4.67	4.69	4.75	4.98											
2007-06	2.67	2.67	2.69	2.67	2007-06	5.03	5.05	5.10	5.29											
2007-07	2.60	2.63	2.64	2.62	2007-07	4.88	4.93	5.00	5.19											
2007-08	2.39	2.45	2.44	2.47	2007-08	4.43	4.53	4.67	5.00											
2007-09	2.14	2.24	2.28	2.30	2007-09	4.20	4.33	4.52	4.84											
2007-10	2.01	2.15	2.20	2.26	2007-10	4.20	4.33	4.53	4.83											
2007-11	1.35	1.65	1.77	1.99	2007-11	3.67	3.87	4.15	4.56											
2007-12	1.27	1.62	1.79	2.08	2007-12	3.49	3.74	4.10	4.57											
2008-01	0.86	1.24	1.47	1.81	2008-01	2.98	3.31	3.74	4.35											
2008-02	0.65	1.09	1.41	1.87	2008-02	2.78	3.21	3.74	4.49											
2008-03	0.23	0.73	1.09	1.76	2008-03	2.48	2.93	3.51	4.36											
2008-04	0.62	1.00	1.36	1.91	2008-04	2.84	3.19	3.68	4.44											
2008-05	1.16	1.48	1.85	2.35	2008-05	3.15	3.46	3.88	4.60											
2008-06	0.97	1.35	1.83	2.19	2008-06	3.49	3.73	4.10	4.74											
2008-07	0.84	1.24	1.57	2.09	2008-07	3.30	3.60	4.01	4.62											
2008-08	1.15	1.47	1.88	2.15	2008-08	3.14	3.46	3.89	4.53											
2008-09	1.55	1.71	1.85	2.25	2008-09	2.88	3.25	3.69	4.32											
2008-10	2.75	2.96	2.75	2.87	2008-10	2.73	3.19	3.81	4.45											
2008-11	3.69	3.84	2.89	3.00	2008-11	2.29	2.82	3.53	4.27											
2008-12	1.76	1.96	2.17	2.32	2008-12	1.52	1.89	2.42	3.18											
2009-01	1.59	1.72	1.91	2.46	2009-01	1.60	1.98	2.52	3.46											
2009-02	1.29	1.48	1.75	2.31	2009-02	1.87	2.30	2.87	3.83											
2009-03	1.23	1.43	1.71	2.26	2009-03	1.82	2.42	2.82	3.78											
2009-04	1.11	1.29	1.57	2.22	2009-04	1.86	2.47	2.												

CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 204**

**Staff GDP Analysis with BEA Historical Data**

**Exhibits in Support  
of Direct Testimony**

**May 3, 2018**

Bureau of Economic Analysis (BEA)  
Current-Dollar and "Real" Gross Domestic Product (GDP)

Staff Accessed  
March 6, 2018

Data Recompiled by BEA on Feb. 28, 2018

Annual			Quarterly				1980 through 2017 Q4		
http://www.bea.gov/national/index.htm			(Seasonally adjusted annual rates)						
Yr	GDP in billions of current dollars	GDP in billions of chained 2009 dollars	Quarter	GDP in billions of current dollars	GDP in billions of chained 2009 dollars	Qtr#	Average	2.67%	Real
1929	104.6	1,056.6	1947Q1	243.1	1,934.5	1	1	8.783381	1980
1930	92.2	966.7	1947Q2	246.3	1,932.3	2	2	8.762896	
1931	77.4	904.8	1947Q3	250.1	1,930.3	3	3	8.761378	
1932	59.5	788.2	1947Q4	260.3	1,960.7	4	4	8.779742	
1933	57.2	778.3	1948Q1	266.2	1,989.5	5	5	8.800219	1981
1934	66.8	862.2	1948Q2	272.9	2,021.9	6	6	8.792899	
1935	74.3	939.0	1948Q3	279.5	2,033.2	7	7	8.804310	
1936	84.9	1,060.5	1948Q4	280.7	2,035.3	8	8	8.792565	
1937	93.0	1,114.6	1949Q1	275.4	2,007.5	9	9	8.775704	1982
1938	87.4	1,077.7	1949Q2	271.7	2,000.8	10	10	8.781125	
1939	93.5	1,163.6	1949Q3	273.3	2,022.8	11	11	8.777525	
1940	102.9	1,266.1	1949Q4	271.0	2,004.7	12	12	8.778495	
1941	129.4	1,490.3	1950Q1	281.2	2,084.6	13	13	8.791516	1983
1942	166.0	1,771.8	1950Q2	290.7	2,147.6	14	14	8.814078	
1943	203.1	2,073.7	1950Q3	308.5	2,230.4	15	15	8.833463	
1944	224.6	2,239.4	1950Q4	320.3	2,273.4	16	16	8.853880	
1945	228.2	2,217.8	1951Q1	336.4	2,304.5	17	17	8.873552	1984
1946	227.8	1,960.9	1951Q2	344.5	2,344.5	18	18	8.890991	
1947	249.9	1,939.4	1951Q3	351.8	2,392.8	19	19	8.900753	
1948	274.8	2,020.0	1951Q4	356.6	2,398.1	20	20	8.908695	
1949	272.8	2,008.9	1952Q1	360.2	2,423.5	21	21	8.918583	1985
1950	300.2	2,184.0	1952Q2	361.4	2,428.5	22	22	8.927699	
1951	347.3	2,360.0	1952Q3	368.1	2,446.1	23	23	8.943140	
1952	367.7	2,456.1	1952Q4	381.2	2,526.4	24	24	8.950611	
1953	389.7	2,571.4	1953Q1	388.5	2,573.4	25	25	8.959838	1986
1954	391.1	2,556.9	1953Q2	392.3	2,593.5	26	26	8.964414	
1955	426.2	2,739.0	1953Q3	391.7	2,578.9	27	27	8.974441	
1956	450.1	2,797.4	1953Q4	386.5	2,539.8	28	28	8.979606	
1957	474.9	2,856.3	1954Q1	385.9	2,528.0	29	29	8.986572	1987
1958	482.0	2,835.3	1954Q2	386.7	2,530.7	30	30	8.997729	
1959	522.5	3,031.0	1954Q3	391.6	2,559.4	31	31	9.006754	
1960	543.3	3,108.7	1954Q4	400.3	2,609.3	32	32	9.023191	
1961	563.3	3,188.1	1955Q1	413.8	2,683.8	33	33	9.028735	1988
1962	605.1	3,383.1	1955Q2	422.2	2,727.5	34	34	9.041863	
1963	638.6	3,530.4	1955Q3	430.9	2,764.1	35	35	9.047621	
1964	685.8	3,734.0	1955Q4	437.8	2,780.8	36	36	9.060784	
1965	743.7	3,976.7	1956Q1	440.5	2,770.0	37	37	9.070814	1989
1966	815.0	4,238.9	1956Q2	446.8	2,792.9	38	38	9.078647	
1967	861.7	4,355.2	1956Q3	452.0	2,790.6	39	39	9.086080	
1968	942.5	4,569.0	1956Q4	461.3	2,836.2	40	40	9.088195	
1969	1,019.9	4,712.5	1957Q1	470.6	2,854.5	41	41	9.099085	1990
1970	1,075.9	4,722.0	1957Q2	472.8	2,848.2	42	42	9.102944	
1971	1,167.8	4,877.6	1957Q3	480.3	2,875.9	43	43	9.103189	
1972	1,282.4	5,134.3	1957Q4	475.7	2,846.4	44	44	9.094638	
1973	1,428.5	5,424.1	1958Q1	468.4	2,772.7	45	45	9.089934	1991
1974	1,548.8	5,396.0	1958Q2	472.8	2,790.9	46	46	9.097664	
1975	1,688.9	5,385.4	1958Q3	486.7	2,855.5	47	47	9.102454	
1976	1,877.6	5,675.4	1958Q4	500.4	2,922.3	48	48	9.106800	
1977	2,086.0	5,937.0	1959Q1	511.1	2,976.6	49	49	9.118554	1992
1978	2,356.6	6,267.2	1959Q2	524.2	3,049.0	50	50	9.129510	
1979	2,632.1	6,466.2	1959Q3	525.2	3,043.1	51	51	9.139188	
1980	2,862.5	6,450.4	1959Q4	529.3	3,055.1	52	52	9.149156	
1981	3,211.0	6,617.7	1960Q1	543.3	3,123.2	53	53	9.151026	1993
1982	3,345.0	6,491.3	1960Q2	542.7	3,111.3	54	54	9.156950	
1983	3,638.1	6,792.0	1960Q3	546.0	3,119.1	55	55	9.161812	
1984	4,040.7	7,285.0	1960Q4	541.1	3,081.3	56	56	9.175076	
1985	4,346.7	7,593.8	1961Q1	545.9	3,102.3	57	57	9.184838	1994
1986	4,590.2	7,860.5	1961Q2	557.4	3,159.9	58	58	9.198409	
1987	4,870.2	8,132.6	1961Q3	568.2	3,212.6	59	59	9.204292	
1988	5,252.6	8,474.5	1961Q4	581.6	3,277.7	60	60	9.215577	
1989	5,657.7	8,786.4	1962Q1	595.2	3,336.8	61	61	9.218993	1995
1990	5,979.6	8,955.0	1962Q2	602.6	3,372.7	62	62	9.222476	
1991	6,174.0	8,948.4	1962Q3	609.6	3,404.8	63	63	9.231005	
1992	6,539.3	9,266.6	1962Q4	613.1	3,418.0	64	64	9.238072	
1993	6,878.7	9,521.0	1963Q1	622.7	3,456.1	65	65	9.244616	1996
1994	7,308.8	9,905.4	1963Q2	631.8	3,501.1	66	66	9.261927	
1995	7,664.1	10,174.8	1963Q3	645.0	3,569.5	67	67	9.271134	
1996	8,100.2	10,561.0	1963Q4	654.8	3,595.0	68	68	9.281647	
1997	8,608.5	11,034.9	1964Q1	671.1	3,672.7	69	69	9.289235	1997
1998	9,089.2	11,525.9	1964Q2	680.8	3,716.4	70	70	9.304213	
1999	9,660.6	12,065.9	1964Q3	692.8	3,766.9	71	71	9.316860	
2000	10,284.8	12,559.7	1964Q4	698.4	3,780.2	72	72	9.324588	
2001	10,621.8	12,682.2	1965Q1	719.2	3,873.5	73	73	9.334432	1998
2002	10,977.5	12,908.8	1965Q2	732.4	3,926.4	74	74	9.344084	
2003	11,510.7	13,271.1	1965Q3	750.2	4,006.2	75	75	9.357087	
2004	12,274.9	13,773.5	1965Q4	773.1	4,100.6	76	76	9.373369	
2005	13,093.7	14,234.2	1966Q1	797.3	4,201.9	77	77	9.381323	1999
2006	13,855.9	14,613.8	1966Q2	807.2	4,219.1	78	78	9.389532	
2007	14,477.6	14,873.7	1966Q3	820.8	4,249.2	79	79	9.402043	
2008	14,718.6	14,830.4	1966Q4	834.9	4,285.6	80	80	9.419247	
2009	14,418.7	14,418.7	1967Q1	846.0	4,324.9	81	81	9.422148	2000
2010	14,964.4	14,783.8	1967Q2	851.1	4,328.7	82	82	9.440857	
2011	15,517.9	15,020.6	1967Q3	866.6	4,366.1	83	83	9.442063	
2012	16,155.3	15,354.6	1967Q4	883.2	4,401.2	84	84	9.447726	
2013	16,691.5	15,612.2	1968Q1	911.1	4,490.6	85	85	9.444883	2001
2014	17,427.6	16,013.3	1968Q2	936.3	4,566.4	86	86	9.450168	
2015	18,120.7	16,471.5	1968Q3	952.3	4,599.3	87	87	9.447000	
2016	18,624.5	16,716.2	1968Q4	970.1	4,619.8	88	88	9.449775	
2017	19,386.2	17,092.5	1969Q1	995.4	4,691.6	89	89	9.458941	2002
			1969Q2	1,011.4	4,706.7	90	90	9.464440	
			1969Q3	1,032.0	4,736.1	91	91	9.469299	
			1969Q4	1,040.7	4,715.5	92	92	9.469932	
			1970Q1	1,053.5	4,707.1	93	93	9.475102	2003
			1970Q2	1,070.1	4,715.4	94	94	9.484337	
			1970Q3	1,088.5	4,757.2	95	95	9.500948	
			1970Q4	1,091.5	4,708.3	96	96	9.512569	
			1971Q1	1,137.8	4,834.3	97	97	9.518303	2004
			1971Q2	1,159.4	4,861.9	98	98	9.525604	
			1971Q3	1,180.3	4,900.0	99	99	9.534653	
			1971Q4	1,193.6	4,914.3	100	100	9.543263	
			1972Q1	1,233.8	5,002.4	101	101	9.553866	2005
			1972Q2	1,270.1	5,118.3	102	102	9.559073	
			1972Q3	1,293.8	5,165.4	103	103	9.567441	
			1972Q4	1,332.0	5,251.2	104	104	9.573135	
			1973Q1	1,380.7	5,380.5	105	105	9.585078	2006
			1973Q2	1,417.6	5,441.5	106	106	9.588064	
			1973Q3	1,436.8	5,411.9	107	107	9.588955	
			1973Q4	1,479.1	5,462.4	108	108	9.596752	
			1974Q1	1,494.7	5,417.0	109	109	9.597370	2007
			1974Q2	1,534.2	5,431.3	110	110	9.604994	
			1974Q3	1,563.4	5,378.7	111	111	9.611597	
			1974Q4	1,603.0	5,357.2	112	112	9.615259	
			1975Q1	1,619.6	5,292.4	113	113	9.608412	2008
			1975Q2	1,656.4	5,333.2	114	114	9.613362	
			1975Q3	1,713.8	5,421.4	115	115	9.608553	
			1975Q4	1,765.9	5,494.4	116	116	9.587200	
			1976Q1	1,824.5	5,618.5	117	117	9.573246	2009
			1976Q2	1,856.9	5,661.0	118	118	9.571895	
			1976Q3	1,890.5	5,689.8	119	119	9.575157	
			1976Q4	1,938.4	5,732.5	120	120	9.584789	
			1977Q1	1,992.5	5,799.2	121	121	9.58	

1985Q1	4,237.0	7,469.5	153
1985Q2	4,302.3	7,537.9	154
1985Q3	4,394.6	7,655.2	155
1985Q4	4,453.1	7,712.6	156
1986Q1	4,516.3	7,784.1	157
1986Q2	4,555.2	7,819.8	158
1986Q3	4,619.6	7,898.6	159
1986Q4	4,669.4	7,939.5	160
1987Q1	4,736.2	7,995.0	161
1987Q2	4,821.5	8,084.7	162
1987Q3	4,900.5	8,158.0	163
1987Q4	5,022.7	8,292.7	164
1988Q1	5,090.6	8,339.3	165
1988Q2	5,207.7	8,449.5	166
1988Q3	5,299.5	8,498.3	167
1988Q4	5,412.7	8,610.9	168
1989Q1	5,527.4	8,697.7	169
1989Q2	5,628.4	8,766.1	170
1989Q3	5,711.6	8,831.5	171
1989Q4	5,763.4	8,850.2	172
1990Q1	5,890.8	8,947.1	173
1990Q2	5,974.7	8,981.7	174
1990Q3	6,029.5	8,983.9	175
1990Q4	6,023.3	8,907.4	176
1991Q1	6,054.9	8,865.6	177
1991Q2	6,143.6	8,934.4	178
1991Q3	6,218.4	8,977.3	179
1991Q4	6,279.3	9,016.4	180
1992Q1	6,380.8	9,123.0	181
1992Q2	6,492.3	9,223.5	182
1992Q3	6,586.5	9,313.2	183
1992Q4	6,697.6	9,406.5	184
1993Q1	6,748.2	9,424.1	185
1993Q2	6,829.6	9,480.1	186
1993Q3	6,904.2	9,526.3	187
1993Q4	7,032.8	9,653.5	188
1994Q1	7,136.3	9,748.2	189
1994Q2	7,269.8	9,881.4	190
1994Q3	7,352.3	9,939.7	191
1994Q4	7,476.7	10,052.5	192
1995Q1	7,545.3	10,086.9	193
1995Q2	7,604.9	10,122.1	194
1995Q3	7,706.5	10,208.8	195
1995Q4	7,799.5	10,281.2	196
1996Q1	7,893.1	10,348.7	197
1996Q2	8,061.5	10,529.4	198
1996Q3	8,159.0	10,626.8	199
1996Q4	8,287.1	10,739.1	200
1997Q1	8,402.1	10,820.9	201
1997Q2	8,551.9	10,984.2	202
1997Q3	8,691.8	11,124.0	203
1997Q4	8,788.3	11,210.3	204
1998Q1	8,889.7	11,321.2	205
1998Q2	8,994.7	11,431.0	206
1998Q3	9,146.5	11,580.6	207
1998Q4	9,325.7	11,770.7	208
1999Q1	9,447.1	11,864.7	209
1999Q2	9,557.0	11,962.5	210
1999Q3	9,712.3	12,113.1	211
1999Q4	9,926.1	12,323.3	212
2000Q1	#####	12,359.1	213
2000Q2	#####	12,592.5	214
2000Q3	#####	12,607.7	215
2000Q4	#####	12,679.3	216
2001Q1	#####	12,643.3	217
2001Q2	#####	12,710.3	218
2001Q3	#####	12,670.1	219
2001Q4	#####	12,705.3	220
2002Q1	#####	12,822.3	221
2002Q2	#####	12,893.0	222
2002Q3	#####	12,955.8	223
2002Q4	#####	12,964.0	224
2003Q1	#####	13,031.2	225
2003Q2	#####	13,152.1	226
2003Q3	#####	13,372.4	227
2003Q4	#####	13,528.7	228
2004Q1	#####	13,606.5	229
2004Q2	#####	13,706.2	230
2004Q3	#####	13,830.8	231
2004Q4	#####	13,950.4	232
2005Q1	#####	14,099.1	233
2005Q2	#####	14,172.7	234
2005Q3	#####	14,291.8	235
2005Q4	#####	14,373.4	236
2006Q1	#####	14,546.1	237
2006Q2	#####	14,589.6	238
2006Q3	#####	14,602.6	239
2006Q4	#####	14,716.9	240
2007Q1	#####	14,726.0	241
2007Q2	#####	14,838.7	242
2007Q3	#####	14,938.5	243
2007Q4	#####	14,991.8	244
2008Q1	#####	14,889.5	245
2008Q2	#####	14,963.4	246
2008Q3	#####	14,891.6	247
2008Q4	#####	14,577.0	248
2009Q1	#####	14,375.0	249
2009Q2	#####	14,355.6	250
2009Q3	#####	14,402.5	251
2009Q4	#####	14,541.9	252
2010Q1	#####	14,604.8	253
2010Q2	#####	14,745.9	254
2010Q3	#####	14,845.5	255
2010Q4	#####	14,939.0	256
2011Q1	#####	14,881.3	257
2011Q2	#####	14,989.6	258
2011Q3	#####	15,021.1	259
2011Q4	#####	15,190.3	260
2012Q1	#####	15,291.0	261
2012Q2	#####	15,362.4	262
2012Q3	#####	15,380.8	263
2012Q4	#####	15,384.3	264
2013Q1	#####	15,491.9	265
2013Q2	#####	15,521.6	266
2013Q3	#####	15,641.3	267
2013Q4	#####	15,793.9	268
2014Q1	#####	15,767.6	269
2014Q2	#####	15,935.8	270
2014Q3	#####	16,139.5	271
2014Q4	#####	16,220.2	272
2015Q1	#####	16,350.0	273
2015Q2	#####	16,460.9	274
2015Q3	#####	16,527.6	275
2015Q4	#####	16,547.6	276
2016Q1	#####	16,571.6	276
2016Q2	#####	16,663.5	276
2016Q3	#####	16,778.1	276
2016Q4	#####	16,851.4	277
2017Q1	#####	16,903.2	278
2017Q2	#####	17,031.1	279
2017Q3	#####	17,163.9	280
2017Q4	#####	17,271.7	281



CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 205**

**Simple-Single-Stage – Gordon Growth  
Discounted Cash Flow (DCF)  
Check on ROE Modeling**

**Exhibits in Support  
of Direct Testimony**

**May 3, 2018**

Simple Discounted Cash Flow (DCF) Model

AKA: Gordon Growth Model

This simple model presumes that whatever is happening next quarter will happen forever.

		A	B	C	D	E	F	G	H	I	J (1+L) <sup>1/4</sup> -1	K	L (O/F) <sup>*(1+N)</sup>	M	N (1+L+J) <sup>4</sup> -1	O	P
		Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	Recent Stock Price	VL EPS 2017	VL EPS 2020-2022	Company "Combined LT Growth Rate"	Quarterly Co. Growth Rate	2017 VL "Last" Q-4 \$ Quarterly Dividend	t+1 Dividend Yield Co. Growth Rate	SIMPLE DCF ROE			Utility		
		Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	Recent Stock Price	VL EPS 2017	VL EPS 2020-2022	Company "Combined LT Growth Rate"	Quarterly Co. Growth Rate	2017 VL "Last" Q-4 \$ Quarterly Dividend	t+1 Dividend Yield Co. Growth Rate	Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	Utility		
1	American States	AWR	Yes	Yes	No	53.80	1.88	2.29	6.2%	1.5%	0.2475	0.47%	8.16%	8.16%		American States	
2	Aqua America	WTR	Yes	No	No	34.82	1.35	1.81	6.7%	1.6%	0.1975	0.58%	9.19%			Aqua America	
3	California Water	CWT	Yes	Yes	No	38.63	1.40	1.81	9.6%	2.3%	0.1800	0.48%	11.61%	11.61%		California Water	
4	Middlesex Water	MSEX	Yes	Yes	Yes	65.57	1.38	1.96	7.8%	1.9%	0.2150	0.33%	9.26%	9.26%	9.26%	Middlesex Water	
5	York Water	YORW	Yes	Yes	Yes	75.19	1.05	1.40	7.1%	1.7%	0.1625	0.22%	8.05%	8.05%	8.05%	York Water	
												Average:	9.25%	9.27%	8.65%		

In General, Staff Disagrees with this Simple Gordon Growth DCF Model

However, this model may provide a check on Staff's Three Stage DCF Modeling.

This is a tool used to introduce students to certain elementary concepts in finance.  
**If dividends were to grow at a steady rate forever, regardless of everything known otherwise,**

then:

$$P_0 = D_1 / (r - g)$$

**P<sub>0</sub>** The current stock price  
**D<sub>1</sub>** The quarterly dividend expected in the next quarter  
**r** The cost of equity capital  
**g** The perpetual growth rate

- ❖ Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by : **12.5** bps
  - ❖ Sensitivity Study to Account for Difference in Capitalization Size -- Maximum Upward Shift: **1.6** bps
- Informed Range of Modeled Results **8.79%** to **9.41%** ROE
- Point ROE Recommendation **9.27%** ROE
- Top of Range for Commission Consideration **9.41%** ROE

CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 206**

**Value Line (VL)  
Water Utility Profiles**

**Exhibits in Support  
of Direct Testimony**

**May 3, 2018**

April 13, 2018

## WATER UTILITY INDUSTRY

1783

The Water Utility Industry consists of eight companies that provide water and wastewater services to specific service areas. The ninth member of the group is a hybrid that has regulated water businesses, but also constructs and operates desalination plants.

*SJW Group* and *Connecticut Water* have agreed to a merger. We think the deal makes sense, and maybe a few similar acquisitions are possible.

Stocks in this industry have historically been purchased because they are not volatile, and have well-defined earnings and dividend streams.

Just about every water utility is involved in a large construction program.

The regulatory climate remains constructive. Once again, we cannot underestimate how important relations are between utilities and state regulators.

The new Tax Cuts and Jobs Act will really not have a major impact on the earnings of the companies followed here.

A spike in short end of the treasury note yield curve is providing investors with alternatives to higher yielding stocks.

### A Merger

The recent agreement by *SJW Group* to combine with *Connecticut Water* took the market by surprise. It's not that mergers and acquisitions are rare in the water utility industry, what's unusual is that the transaction was between two publicly traded companies. There are over 50,000 small water authorities operating in the United States. Almost all of them are municipally run, however. Thus, while they issue debt, there is no equity involved because the districts are owned by a local- or state-run agency. Also, making the marriage of *SJW* and *Connecticut Water* atypical is that the companies have no overlapping jurisdictions. One of the main reasons for the merger is that the size of the utility will increase significantly. This is important because smaller concerns, such as *Connecticut Water* have been having difficulty getting the attention of institutional accounts. Large investors have trouble buying stocks with small market capitalizations because they don't want to own more than 3%-5% of the outstanding stock of any one company. For example, if a \$25 billion pension fund took a 5% interest in an equity with a \$500 million market cap, the position would only be \$25 million, or .1% of the total portfolio. This is too small a holding to be worth the trouble. In any case, the only remaining small cap stocks are *York Water* and *Middlesex*, which have market caps of only \$400 and \$600 million respectively. Not including the two largest utilities *American Water Works* and *Aqua America*, there are several companies that have market caps of close to \$2 billion, and they could possibly become buyers or sellers.

Size in this sector is important for another reason. There was a period when the industry did not reinvest in its infrastructure. As a result, the nation's pipeline systems became antiquated. The problem has been addressed over the past 10 years, but the American Society of Civil Engineers (ASCE) estimates that \$1 trillion will be needed to fix the problem over the next 25 years. Also, by 2020, the percentage of pipes classified as poor, or worse, will rise from 10% to over 40%. (Keep in mind, however, this means more work for engineers.) More-

### INDUSTRY TIMELINESS: 50 (of 97)

over, many of these small local water authorities do not have the financial wherewithal required to make the necessary improvements.

### Tax Reform

For the most part, the Tax Cuts and Jobs Act will not have a major impact on water utilities. True, deferred taxes on balance sheets had to be reevaluated, leading to write downs. In the future, however, utilities will almost definitely not be allowed to keep profits resulting from lower taxes, as all of the proceeds will be passed through to ratepayers. Nevertheless, lower taxes are a positive for utilities in that their customers' bills will decline. Hence, there may be less resistance to raising rates to recoup costs in the future.

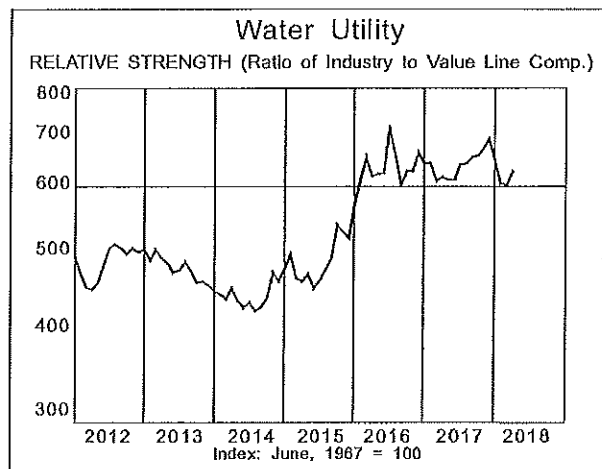
### Competition From Bonds

For those seeking income-generating securities, there is typically a choice to be made between a high-yielding equity or a bond. Due to massive intervention by monetary authorities, rates on short term government debt had declined to historic lows. The Federal Reserve has allowed interest rates to increase by over 100 basis points for short term treasuries. This makes the notes much more competitive with the 2.0% yield on the typical stock. For example, the one- and two-year treasury notes are now yielding 2.05% and 2.30%, respectively. Thus, investors can get the same current income for a lot less risk.

### Conclusion

Stocks from this sector have historically been sought after by income-oriented investors, with a low tolerance for risk. The group's strong performance in the past few years resulted in the average yield on a water utility stock only being slightly higher than the medium of all stocks in the *Value Line* universe. As always, we recommend that subscribers read each individual report to understand the specific risk associated with each stock, before making commitments.

James A. Flood



# AMER. STATES WATER NYSE-AWR

<b>TIMELINESS</b> 3 Raised 3/19/18	High: 23.1	21.0	19.4	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	60.0		Target Price	Range
<b>SAFETY</b> 2 Raised 7/28/12	Low: 16.8	13.5	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1		2021	2022
<b>TECHNICAL</b> 2 Raised 4/13/18	<b>LEGENDS:</b> --- 13x Dividends p sh divided by Interest Rate .... Relative Price Strength 2-for-1 split 9/13 Options: Yes Shaded area indicates recession														
<b>BETA</b> .75 (1.00=Market)	REGENT PRICE <b>52.01</b> P/E RATIO <b>28.9</b> (Trailing: 27.7 Median: 20.0) RELATIVE P/E RATIO <b>1.56</b> DIV'D YLD <b>2.1%</b> <b>VALUE LINE</b>														
<b>2021-23 PROJECTIONS</b> Price 60 Gala (+15%) Ann'l Total Return 0% High Low 45 (-15%) 0% -7%															
<b>Insider Decisions</b> J A S O N D J F to Buy 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Options 2 0 3 4 0 2 1 1 1 1 to Sell 3 2 4 3 2 4 0 1 0															
<b>Institutional Decisions</b> 2021 2020 2019 2018 2017 to Buy 96 104 104 104 104 to Sell 84 79 77 77 77 Hd's/100 28355 27880 24143															
Percent shares traded 24 16 8															
% TOT. RETURN 3/18 THIS STOCK VS. ARITH. INDEX 1 yr. 22.2 0.7 3 yr. 41.9 24.3 5 yr. 107.3 68.8															

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	20-23	
6.89	6.59	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	12.65	12.45	Revenues per sh	15.35
1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.61	2.70	2.98	3.05	3.25	"Cash Flow" per sh	4.00
.87	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.85	2.00	Earnings per sh A	2.45
.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.07	1.15	Div'd Decl'd per sh B	1.45
1.34	1.38	2.51	2.42	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.09	3.40	3.40	Cap'l Spending per sh	3.25
7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.20	15.85	Book Value per sh D	17.35
30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.80	37.00	Common Shs Outst'g C	37.50
18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	25.7	25.7	Avg Ann'l P/E Ratio	22.0
1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.25	1.25	1.25	Relative P/E Ratio	1.20
3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	2.0%	2.0%	Avg Ann'l Div'd Yield	2.8%
<b>CAPITAL STRUCTURE as of 12/31/17</b> Total Debt \$360.3 mill. Due in 5 Yrs \$100.7 mill. LT Debt \$321.0 mill. LT Interest \$21.3 mill. (38% of Cap'l)																			
<b>Leases, Uncapitalized: Annual rentals \$2.3 mill.</b> <b>Pension Assets-12/17 \$173.6 mill.</b> <b>Pfd Stock None.</b> Oblig. \$207.7 mill.																			
Common Stock 30,715,525 shs. as of 2/22/18																			
<b>MARKET CAP: \$1.9 billion (Mid Cap)</b>																			
<b>CURRENT POSITION (\$ MILL.)</b> 2015 2016 12/31/17 Cash Assets 4.4 4 2.1 Accts Receivable 18.9 20.0 26.2 Other 109.4 146.5 129.2 Current Assets 132.7 166.9 155.5 Accts Payable 50.6 43.7 51.0 Debt Due 28.3 90.3 59.3 Other 44.6 43.9 46.4 Current Liab. 123.5 177.9 156.7																			

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '21-'23
Revenues	5.5%	3.0%	4.5%
"Cash Flow"	7.5%	6.5%	6.0%
Earnings	10.0%	9.5%	6.5%
Dividends	7.0%	10.5%	7.5%
Book Value	5.5%	5.0%	4.0%

Cal-endar	QUARTERLY REVENUES (\$ MILL.)	Full Year
	Mar.31 Jun.30 Sep.30 Dec.31	
2015	100.9 114.6 133.0 110.1	458.6
2016	93.5 112.0 123.8 106.8	436.1
2017	98.8 113.2 124.4 104.2	440.6
2018	100 115 130 105	450
2019	102 118 133 107	460

Cal-endar	EARNINGS PER SHARE A	Full Year
	Mar.31 Jun.30 Sep.30 Dec.31	
2015	.32 .41 .56 .31	1.60
2016	.28 .45 .59 .30	1.62
2017	.34 .62 .57 .35	1.88
2018	.35 .50 .60 .40	1.85
2019	.37 .58 .63 .42	2.00

Cal-endar	QUARTERLY DIVIDENDS PAID B	Full Year
	Mar.31 Jun.30 Sep.30 Dec.31	
2014	.2025 .213 .213	.83
2015	.213 .213 .224	.87
2016	.224 .224 .224	.91
2017	.242 .242 .255	.99
2018	.255	

**BUSINESS:** American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 258,949 customers in 70 cities in 10 counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,274 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS sub. Sold Chaparral City Wtr. of AZ. (8/11). Employs 758. BlackRock, Inc. owns 11.7% of out. shares; Vanguard, 9.5%; & off. & dir. 1.5%. (4/17 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprows, Inc. CA. Addr.: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3000, internet: www.aswater.com.

**California regulators recently granted American States Water a better return than it originally proposed.** In February, the California Public Utility Commission (CPUC) recommended an allowed return on equity (ROE) of 8.23% for the Golden State Water subsidiary, compared to the previous permitted rate of 9.43%. In the final ruling in March, however, the CPUC raised the level to 8.9%. Management believes that the top line will only be impacted by \$3.6 million with this new decision, as compared to the \$9.5 million in revenues it thought would be lost with a ROE of 8.23%.

**Share earnings should be better than they appear this year.** We expect the company's share net to fall 2%, to \$1.85 in 2018. Last year's figures include a \$0.13-a-share gain resulting from the forced sale of its Ojai operations. Without this asset sale, however, the rise in estimated earnings per share would be a healthy 6%.

**The momentum should continue into 2019.** We are introducing our share-earnings estimate for next year at \$2.00, reflecting a solid 8% increase over 2018. Our numbers are based upon the assumption

of reasonable regulatory treatment. In 2017, American States filed a petition seeking higher revenues for 2019-2021. A final decision should be made by yearend. **Lower taxes should not have an impact on the company.** In 2017, the new tax legislation was basically a wash for American States. The savings generated from the reduced taxes in the years ahead will most certainly be passed on to customers.

**The nonutility segment continues to grow in importance.** Last year, the ASUS business, which provides water services to 11 military installations, posted an 11% gain in earnings per share, to \$0.37. As the U.S. military privatizes more bases, we expect ASUS to win its fair share of these 50-year contracts.

**The stock does not stand out at this juncture.** AWR's positives include low volatility, strong finances, and well-defined earnings and dividend growth prospects. Nevertheless, despite raising our 3-to-5-year total return projections, we think investors can find stocks with similar risk profiles at better prices.

*James A. Flood*  
*April 13, 2018*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due early May.  
 (B) Dividends historically paid in early March, June, September, and December. \* Div'd reinvestment plan available.  
 (C) In millions, adjusted for split.  
 (D) Includes intangibles. As of 12/31/17; \$7.9 million/\$0.22 a share.

Company's Financial Strength	A
Stock's Price Stability	80
Price Growth Persistence	75
Earnings Predictability	90

**To subscribe call 1-800-VALUELINE**

# AMERICAN WATER NYSE-AWK

RECENT PRICE **81.16** P/E RATIO **25.3** (Trailing: 26.4 Median: NMF) RELATIVE P/E RATIO **1.37** DIV'D YLD **2.3%** VALUE LINE

<b>TIMELINESS</b> 2 Raised 11/17/17	High: 23.7	23.0	25.8	32.8	39.4	45.1	56.2	61.2	85.2	92.4	91.5		Target Price 2021	Range 2023																														
<b>SAFETY</b> 3 New 7/25/08	Low: 16.6	16.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0		2021	2022																														
<b>TECHNICAL</b> 3 Lowered 3/2/18	<p>LEGENDS: --- 10x Dividends p sh divided by Interest Rate                  .... Relative Price Strength                  Options: Yes                  Shaded area indicates recession</p>																																											
<b>BETA</b> .55 (1.00=Market)	<p>2021-23 PROJECTIONS</p> <table border="1"> <tr> <th>Price</th> <th>Gain</th> <th>Ann'l Total Return</th> </tr> <tr> <td>High 115</td> <td>+40%</td> <td>17%</td> </tr> <tr> <td>Low 75</td> <td>-10%</td> <td>1%</td> </tr> </table>												Price	Gain	Ann'l Total Return	High 115	+40%	17%	Low 75	-10%	1%																							
Price	Gain	Ann'l Total Return																																										
High 115	+40%	17%																																										
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<b>Insider Decisions</b>	<table border="1"> <tr> <th>J</th> <th>A</th> <th>S</th> <th>O</th> <th>N</th> <th>D</th> <th>J</th> <th>F</th> </tr> <tr> <td>to Buy</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Options</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>2</td> <td>0</td> <td>7</td> </tr> <tr> <td>to Sell</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>3</td> <td>0</td> <td>0</td> </tr> </table>												J	A	S	O	N	D	J	F	to Buy	0	0	0	0	0	0	0	Options	0	0	1	0	2	0	7	to Sell	0	0	1	0	3	0	0
J	A	S	O	N	D	J	F																																					
to Buy	0	0	0	0	0	0	0																																					
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to Sell	0	0	1	0	3	0	0																																					
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2002	2003	2004	2005	2006	2007	2008 <sup>e</sup>	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	% TOT. RETURN 3/18	VALUE LINE PUB. LLC	21-23
13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.05	19.85	19.85	19.85	19.85	19.85	128	128	128
.85	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.80	5.75	6.30	6.30	6.30	6.30	6.30	96	96	96
d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	3.03	3.25	3.50	3.50	3.50	3.50	3.50	80	80	80
.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.95	1.95	2.60	2.60	2.60	2.60	2.60	64	64	64
4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.05	9.60	9.55	9.55	9.55	9.55	9.55	48	48	48
23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.16	31.75	33.90	33.90	33.90	33.90	33.90	40	40	40
160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	179.00	180.00	180.00	180.00	180.00	180.00	24	24	24
18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	16	16	16
1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	12	12	12
1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%			
2336.9	2440.7	2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3410	3575	3575	3575	3575	3575	3575	3575			
187.2	209.9	267.8	304.9	374.3	369.3	429.8	476.0	468.0	542.4	580	630	630	630	630	630	630	630			
37.4%	37.9%	40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	40.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%			
53.1%	56.9%	56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.6%	56.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%			
46.9%	43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.5%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%			
8750.2	9289.0	9561.3	9580.3	9635.5	9940.7	10364	10911	10967	11883	13085	14400	14400	14400	14400	14400	14400	14400			
9991.8	10524	11059	11021	11739	12391	12900	13933	14992	16246	17400	18800	18800	18800	18800	18800	18800	18800			
3.7%	3.6%	4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	6.0%	5.0%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%			
4.6%	5.2%	6.5%	7.2%	6.4%	7.8%	8.7%	9.4%	9.0%	10.1%	10.0%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%			
4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	10.1%	10.0%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%			
3.0%	1.8%	2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	4.7%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%			
34%	65%	58%	52%	57%	40%	50%	50%	56%	53%	55%	56%	56%	56%	56%	56%	56%	56%			

<b>CAPITAL STRUCTURE</b> as of 12/31/17			
Total Debt \$7717.0 mil.	Due in 5 Yrs \$2192.0 mil.	LT Debt \$6490.0 mil.	LT Interest \$320.0 mil. (55% of Cap'l)
<b>Loans, Uncapitalized:</b> (Annual rentals \$15.0 mil.)			
<b>Pension Assets 12/16</b> \$1649.0 mil.			
<b>Pfd Stock</b> \$8.0 mil.			
<b>Common Stock</b> 178,551,923 shs. as of 2/15/17			
<b>MARKET CAP:</b> \$14.5 billion (Large Cap)			
<b>CURRENT POSITION</b>			
	2015	2016	12/31/17
<b>Cash Assets</b>	45.0	75.0	82.0
<b>Accts Receivable</b>	255.0	269.0	272.0
<b>Other</b>	357.0	440.0	366.0
<b>Current Assets</b>	657.0	784.0	720.0
<b>Accts Payable</b>	126.0	154.0	195.0
<b>Debt Due</b>	682.0	1423.0	1227.0
<b>Other</b>	725.0	815.0	903.0
<b>Current Liab.</b>	1533.0	2392.0	2325.0

**BUSINESS:** American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in 46 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 88% of 2017 revenues.

**American Water Works' earnings and dividend growth prospects remain the most attractive in the water utility sector.** Over the next five-year period, management expects both the bottom line, and the distribution paid to shareholders to increase 7%-10% annually. This easily surpasses the market consensus for the other members of the group. How does the company achieve such success? Much can be attributed to its aggressive policy of acquiring small, inefficient water districts and reducing their expenses substantially. **The capital budget is very large.** American Water estimates that outlays to refurbish and modernize its infrastructure will average as much as \$1.7 billion per year through 2022. Financing these expenditures will require a fair amount of external financing. Management has stated that no major new equity offering is forthcoming. (We have shares outstanding rising only about 1% per annum.) Thus, the company's balance sheet should come under some pressure as it will probably become more leveraged. Even with the higher reliance on debt, however, American Water's finances should be adequate.

**The regulatory climate will like continue to have a significant impact on the company's performance.** The utility is so large that its operates in all but four of the 50 states. As it is a regulated entity, state authorities determine the rate of return that can be earned on investments. Most regulators realize that all of the water utilities are playing catch-up as they try to modernize pipeline and wastewater facilities. In the past, mostly to keep water bills low, both utilities and authorities ignored the disrepair of the nation's water system. As a result, regulators have taken a constructive approach in dealing with utilities. Because it is by far the largest member of the group, American Water has benefited the most from the policy. Conversely, any change in the nation's regulatory climate would have the biggest effect on the company. **These shares are timely.** Also, AWK's yield is now not too much lower than the median for a water utility. Thus, investors do not have to pay much of a premium for the equity's better-than-average dividend growth potential.

*James A. Flood* April 13, 2018

<b>ANNUAL RATES</b> Past 10 Yrs. of change (per sh)						
Revenues	3.0%	3.5%	4.6%			
"Cash Flow"	23.0%	8.5%	7.0%			
Earnings	--	11.0%	8.5%			
Dividends	--	9.0%	10.0%			
Book Value	1.5%	4.0%	5.0%			
<b>QUARTERLY REVENUES (\$ mil.)</b>						
Cal-endar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year	
2015	698.0	782.0	896.0	783.0	3159.0	
2016	743.0	827.0	930.0	802.0	3302.0	
2017	756.0	844.0	936.0	821.0	3357	
2018	725	850	1010	825	3410	
2019	765	890	1065	855	3575	
<b>EARNINGS PER SHARE ^</b>						
Cal-endar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year	
2015	.44	.68	.96	.56	2.64	
2016	.46	.77	.83	.57	2.62	
2017	.52	.73	1.13	.65	3.03	
2018	.55	.82	1.19	.69	3.25	
2019	.60	.88	1.27	.75	3.50	
<b>QUARTERLY DIVIDENDS PAID ^w</b>						
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year	
2014	.28	.31	.31	.31	1.21	
2015	.31	.34	.34	.34	1.33	
2016	.34	.375	.375	.375	1.47	
2017	.375	.415	.415	.415	1.62	
2018	.415					

(A) Diluted earnings. Excludes nonrec. losses: '08, \$4.62; '09, \$2.83; '11, \$0.07. Disc. op. '06, (\$0.04); '11, \$0.03; '12, (\$0.10); '13, (\$0.01). GAAP used as of 2014, except for (\$0.65) loss in '17 due to change in tax law. Next earnings report due mid-May. Quarterly earnings do not sum in '16 due to rounding. (B) Dividends paid in March, June, September, and December. (C) Div. reinvestment available. (D) Includes intangibles. On 12/31/17: \$1.379 billion, \$7.72/share. (E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	90

AQUA AMERICA NYSE-WTR		RECENT PRICE	P/E RATIO	Trailing: 24.9 Median: 22.0	RELATIVE P/E RATIO	DIVD YLD	VALUE LINE	
TIMELINESS	2 Raised 3/30/18	High: 21.3	33.63	24.2	1.31	2.6%		
SAFETY	2 Raised 4/20/12	Low: 15.1						
TECHNICAL	3 Lowered 3/30/18	17.2	18.4	19.0	21.5	28.1	28.2	
BETA	.70 (1.00 = Market)	12.3	13.2	15.4	16.8	20.6	22.4	
2021-23 PROJECTIONS		31.1	35.8	39.6	39.4			
Price	Gain	Retain	LEGENDS					Target Price Range
High	50 (+50%)	72%	1.00 x Dividends p sh					2021
Low	40 (+20%)	7%	divided by Interest Rate					2022
Insider Decisions		to Buy		to Sell		Options		2023
Institutional Decisions		to Buy		to Sell		Hd's/100		
CAPITAL STRUCTURE as of 12/31/17		Total Debt \$2125.2 mill. Due in 5 Yrs \$368.4 mill.		LT Debt \$2007.8 mill. LT Interest \$83.0 mill. (51% of Cap'l)		Pension Assets-12/16 \$270.4 mill. Oblig. \$321.0 mill.		
Pfd Stock None		Common Stock 177,750,505 shares as of 2/13/18		MARKET CAP: \$6.0 billion (Large Cap)		CURRENT POSITION		
ANNUAL RATES		Past 10 Yrs.		Past 5 Yrs.		Est'd '14-'16 to '21-'23		
QUARTERLY REVENUES (\$ mill.)		Full Year		Full Year		Full Year		
EARNINGS PER SHARE		Full Year		Full Year		Full Year		
QUARTERLY DIVIDENDS PAID		Full Year		Full Year		Full Year		
BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Has 1,530 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues '2017: residential, 60%; commercial, 16%; industrial, wastewater & other, 24%. Off. & dir. own less than 1% of the common stock; Vanguard Group, 10.0%; Blackrock, Inc, 8.8%; State Street Capital, 5.0% (3/18 Proxy). President & Chief Executive Officer: Christopher Franklin. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel.: 610-525-1400. Internet: www.aquaamerica.com.		Aqua America is being more aggressive on the acquisition front. Each year, the largest members of the highly fragmented water industry typically purchase dozens of the small, local water districts located throughout the U.S. Since there are such a high number of overlapping costs involved in operating a water system, savings resulting from synergies can be quite meaningful. In 2017, Aqua only made four small purchases, which is why customer growth was only 1.1%, compared to 1.6% and 1.9% in the previous two years. Net proceeds used for these purchases totaled only \$5 million (net of divestitures). This number may well spike to \$150 million this year as six deals are currently well along in the pipeline. Acquisitions ought to remain part of the company's growth strategy, and continue to provide a boost to earnings.		The bottom line probably will not show much progress this year. Management's guidance for 2018 was less than we anticipated as share earnings were targeted at the \$1.40 midpoint. One headwind is that the company's profitability level is higher than allowed by authorities		in Pennsylvania. We expect earnings to gain some traction in 2019. We think Aqua's returns on equity will no longer exceed the permitted rate, and that all costs associated with exiting nonutility operations will be eliminated. All told, we estimate that share earnings could rise a healthy 7%. The capital budget is substantial. About \$480 million was used to upgrade old pipelines and other facilities in 2017. Through 2020, another \$1.4 billion is scheduled to be spent. Finances are sound. Of the eight members of this industry, only Aqua and one other member merit an A Financial Strength rating. This provides the company with plenty of options because external funds will be required to finance the construction program. Barely any new equity has been issued in five years. So, this source can be tapped to raise funds. Or, Aqua can take on more debt without becoming overleveraged. These shares are timely. Also, total return prospects out to 2021-2023 are worthwhile on a risk-adjusted basis.		

(A) Diluted eqs. Excl. nonrec. gains; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations; '12, 7¢; '13, 9¢; '14, 11¢. May not sum due to rounding. Next earnings report due mid-May. (B) Dividends historically paid in early March, June, Sept. & Dec. \* Div'd. reinvestment plan available (5% discount). (C) In millions, adjusted for stock splits.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	65
Earnings Predictability	90

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CALIFORNIA WATER NYSE-CWT										RECENT PRICE	P/E RATIO	Trailing: 26.1 Median: 20.0	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE				
<b>TIMELINESS</b> 4 Lowered 3/31/18 <b>SAFETY</b> 3 Lowered 7/27/17 <b>TECHNICAL</b> 3 Lowered 3/30/18 <b>BETA</b> .75 (1.00 = Market)										36.50	24.2	1.31	2.1%						
<b>2021-23 PROJECTIONS</b> High 50 22.7 23.3 24.1 19.8 19.4 19.3 23.4 26.4 28.0 36.8 46.2 45.8 Low 35 17.1 13.8 16.7 16.9 16.7 16.8 18.4 20.3 19.5 22.5 32.4 35.3										<b>LEGENDS</b> 1.33 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 6/11 Options: Yes Shaded area indicates recession					<b>Target Price Range</b> 2021 2022 2023 64 48 40 32 24 20 16 12 8 6				
<b>Insider Decisions</b> J A S O N D J F to Buy 1 1 1 1 1 1 1 1 1 1 Options 0 0 0 0 0 0 0 0 0 0 to Sell 1 0 0 1 0 0 0 0 0 0										<b>Institutional Decisions</b> 2020/17 3020/17 4020/17 to Buy 88 80 74 to Sell 77 71 70 Hrs (000) 38422 36931 33803					<b>Percent shares traded</b> 18 12 6				
<b>MARKET CAP: \$1.8 billion (Mid Cap)</b>										<b>© VALUE LINE PUB. LLC 21-23</b>									
<b>CAPITAL STRUCTURE as of 12/31/17</b> Total Debt \$806.8 mil. Due in 5 Yrs \$291.0 mil. LT Debt \$515.8 mil. LT Interest \$36.0 mil. (43% of Cap'l)										<b>Revenues per sh</b> 15.20 <b>"Cash Flow" per sh</b> 3.30 <b>Earnings per sh <sup>A</sup></b> 1.90 <b>Div'd Decl'd per sh <sup>B</sup></b> 1.02 <b>Cap'l Spending per sh</b> 3.85 <b>Book Value per sh <sup>C</sup></b> 16.70 <b>Common Shs Outst'g <sup>D</sup></b> 50.00									
<b>Pension Assets-12/17 \$400.9 mil.</b> <b>Pfd Stock None</b> <b>Common Stock 48,012,000 shs.</b>										<b>Avg Ann'l P/E Ratio</b> 23.0 <b>Relative P/E Ratio</b> 1.25 <b>Avg Ann'l Div'd Yield</b> 2.4%									
<b>MARKET CAP: \$1.8 billion (Mid Cap)</b>										<b>Revenues (\$mil) <sup>E</sup></b> 760 <b>Net Profit (\$mil)</b> 95.0 <b>Income Tax Rate</b> 21.0% <b>AFUDC % to Net Profit</b> 5.0% <b>Long-Term Debt Ratio</b> 42.0% <b>Common Equity Ratio</b> 58.0% <b>Total Capital (\$mil)</b> 1435 <b>Net Plant (\$mil)</b> 2200 <b>Return on Total Cap'l</b> 7.5% <b>Return on Shr. Equity</b> 11.5% <b>Return on Com Equity</b> 11.5% <b>Retained to Com Eq</b> 5.5% <b>All Div'ds to Net Prof</b> 54%									
<b>ANNUAL RATES Past</b> of change (per sh) 10 Yrs. 5 Yrs. Past Est'd '15-'17 to '21-'23 <b>Revenues</b> 4.0% 1.5% 2.5% <b>"Cash Flow"</b> 5.5% 3.6% 4.5% <b>Earnings</b> 4.5% 4.0% 9.5% <b>Dividends</b> 2.0% 2.5% 6.5% <b>Book Value</b> 4.5% 5.0% 3.0%										<b>Business:</b> California Water Service Group provides regulated and nonregulated water service to 484,800 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '17: residential, 72%; business, 19%; industrial, 4%; public authorities, 4%; other 1%. Off. and dir. own 1% of common stock (4/17 proxy). Has 1,163 employees. Pres. and CEO: Martin A. Kropelnicki Inc.; DE. Addr.: 1720 North First St., San Jose, CA 95112-4596. Tel.: 408-367-8200. Internet: www.calwatergroup.com.									
<b>QUARTERLY REVENUES (\$ mil) <sup>F</sup></b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2015 122.0 144.4 183.5 138.5 588.4 2016 121.7 152.4 184.3 151.0 609.4 2017 122.1 171.1 211.7 162.0 666.9 2018 130 175 215 165 665 2019 135 180 220 170 705										<b>Shares of California Water Service Group have struggled to maintain their elevated price point.</b> Indeed, investors bid up CWT stock over the past two years, seemingly applauding the company's financial progress. The equity approached its all-time high in January of this year (just about \$46 per share), but has subsequently lost steam, slipping almost 15% in value since our last review. A combination of general selling pressure from broader market indices, plus a relatively stretched valuation (forward-looking P/E ratio jumped above 30.0x over the March interim), likely fueled the pullback. This issue no longer stands out for the year ahead. CWT shares have been lowered two notches for Timeliness, to 4 (Below Average). Top- and bottom-line growth is expected to moderate in 2018. No doubt, rate increases stemming from the recent rate case decision ought to support revenues; however, increasing administrative, water production, and interest costs could be a drag on the bottom line. We are reiterating our \$685 million revenue call and \$1.55 share-net forecast. Still, this									
<b>EARNINGS PER SHARE <sup>A</sup></b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2015 .03 .21 .52 .18 .94 2016 d.02 .24 .48 .31 1.01 2017 .02 .39 .70 .29 1.40 2018 .08 .42 .72 .33 1.55 2019 .11 .45 .74 .35 1.65										<b>On a positive note, the company boosted its quarterly dividend payout by 4%, to \$0.1875 per share.</b> At present, the annual yield is about even with that of all the dividend-paying stocks in <i>The Value Line Investment Survey</i> . We recommend turning the page, for now. The abovementioned risks in regard to the Cost of Capital filing are rather disuading. Too, even with the recent price decline, California Water stock offers subpar capital appreciation potential over the pull to 2021-2023.									
<b>QUARTERLY DIVIDENDS PAID <sup>B</sup></b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .1625 .1625 .1625 .1625 .65 2015 .1675 .1675 .1675 .1675 .67 2016 .1725 .1725 .1725 .1725 .69 2017 .18 .18 .18 .18 .72 2018 .1875										<b>Nicholas P. Patrikis April 13, 2018</b>									
<b>(A) Basic EPS. Excl. nonrecurring gain (loss): '02, 4¢; '11, 4¢. Next earnings report due late May.</b> <b>(B) Dividends historically paid in late Feb.</b> <b>(C) Incl. intangible assets. In '17: \$24.8 mil., \$0.52/sh.</b> <b>(D) In millions, adjusted for splits.</b> <b>(E) Excludes non-reg. rev.</b>										<b>Company's Financial Strength</b> B++ <b>Stock's Price Stability</b> 80 <b>Price Growth Persistence</b> 35 <b>Earnings Predictability</b> 65									
<b>(A) Basic EPS. Excl. nonrecurring gain (loss): '02, 4¢; '11, 4¢. Next earnings report due late May.</b> <b>(B) Dividends historically paid in late Feb.</b> <b>(C) Incl. intangible assets. In '17: \$24.8 mil., \$0.52/sh.</b> <b>(D) In millions, adjusted for splits.</b> <b>(E) Excludes non-reg. rev.</b>										<b>To subscribe call 1-800-VALUELINE</b>									



CONNECTICUT WATER NDQ-CTWS										RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE				
<b>TIMELINESS</b> -- Suspended 3/23/18 <b>SAFETY</b> 3 Nov 11/9/13 <b>TECHNICAL</b> -- Suspended 3/23/18 <b>BETA</b> .65 (1.00 = Market)										61.21	27.8	(Trailing: 28.7; Median: 20.0)	1.50	1.9%					
<b>2021-23 PROJECTIONS</b> High: 25.6, Low: 22.4, 29.0, 19.3, 26.4, 17.3, 27.9, 20.0, 29.1, 23.3, 32.8, 26.2, 36.4, 27.8, 37.5, 31.0, 39.9, 33.2, 58.3, 37.5, 65.0, 50.8, 62.3, 48.9										Target Price Range 2021 2022 2023									
<b>LEGENDS</b> 1.30 x Dividends p sh divided by Interest Rate .... Relative Price Strength Options: Yes Shaded area indicates recession																			
<b>Insider Decisions</b> J A S O N D J F to Buy 0 0 0 0 0 0 0 0 0 0 0 0 Options 0 0 0 0 1 0 0 0 0 0 0 0 to Sell 0 0 1 0 0 0 0 0 0 0 0 0										<b>Institutional Decisions</b> 202017 3Q2017 4Q2017 to Buy 55 54 53 to Sell 44 45 33 Hlds/100k 6299 6356 5642 Percent shares traded 12 8 4									
<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>										<b>2020</b> 2021 2022 2023		<b>REVENUES PER SH</b> 12.80 <b>"Cash Flow" per sh</b> 4.50 <b>Earnings per sh</b> 2.90 <b>Div'd Decl'd per sh</b> 1.52 <b>Cap'l Spending per sh</b> 3.35 <b>Book Value per sh</b> 26.80 <b>Common Shs Outst'g</b> 12.50 <b>Avg Ann'l P/E Ratio</b> 19.0 <b>Relative P/E Ratio</b> 1.05 <b>Avg Ann'l Div'd Yield</b> 2.9%							
<b>CAPITAL STRUCTURE as of 12/31/17</b> Total Debt \$259.6 mill. Due in 5 Yrs \$6.2 mill. LT Debt \$253.4 mill. LT Interest \$9.0 mill. (46% of Cap'l)										61.3 59.4 66.4 69.4 83.8 91.5 94.0 96.0 98.7 107.1 115 122 9.4 10.2 9.8 9.9 13.6 18.3 21.3 22.8 23.4 25.7 28.0 29.5		Revenues (\$mill) 160 Net Profit (\$mill) 36.0 Income Tax Rate 21.0% % to Net Profit 2.5% Long-Term Debt Ratio 45.0% Common Equity Ratio 55.0% Total Capital (\$mill) 670 Net Plant (\$mill) 750 Return on Total Cap'l 6.5% Return on Shr. Equity 11.0% Return on Com Equity 11.0% Retained to Com Eq 5.8% All Div'ds to Net Prof 52%							
<b>Leases, Uncapitalized: Annual rentals \$3 mill.</b> <b>Pension Assets-12/16 \$73.1 mill.</b> Oblig. \$88.6 mill. <b>Pfd Stock \$0.8 mill. Pfd Divd NMF</b> <b>Common Stock 12,065,016 shs.</b> <b>MARKET CAP: \$750 million (Small Cap)</b>										46.9% 50.6% 49.5% 53.2% 49.0% 46.9% 45.7% 44.1% 45.4% 46.3% 46.5% 45.5% 52.7% 49.1% 50.2% 46.5% 50.8% 52.9% 54.1% 55.7% 54.4% 53.7% 53.5% 54.5% 196.5 221.3 225.6 254.2 364.6 373.6 386.8 402.4 433.8 547.0 560 580 302.3 325.2 344.2 362.4 447.9 471.9 506.9 546.3 601.4 697.7 700 715 5.9% 5.5% 5.4% 4.9% 4.8% 5.9% 6.4% 6.5% 6.3% 5.5% 5.5% 6.0% 9.0% 9.3% 8.6% 8.3% 7.3% 9.2% 10.1% 10.1% 9.9% 8.8% 9.5% 9.5% 9.1% 9.4% 8.7% 8.3% 7.3% 9.2% 10.2% 10.1% 9.9% 8.8% 9.5% 9.5% 1.9% 2.3% 1.6% 1.4% 2.8% 3.8% 4.8% 4.9% 4.6% 3.9% 4.5% 4.5% 79% 76% 81% 83% 82% 59% 53% 52% 54% 55% 54% 54%		27.2% 18.5% 35.2% 41.3% 32.0% 28.0% 14.4% 3.5% 9.9% 18.0% 20.0% 21.0% 1.7% -- -- -- 1.7% 2.0% 2.4% 2.3% 5.1% 3.0% 3.0% 2.5%							
<b>CURRENT POSITION</b> 2015 2016 12/31/17 (\$MILL.) Cash Assets .7 1.6 3.6 Accounts Receivable 11.0 13.0 15.0 Other 15.3 14.8 17.1 Current Assets 27.0 29.4 35.7 Accts Payable 11.9 13.1 11.3 Debt Due 2.6 4.9 6.2 Other 22.2 37.1 24.0 Current Liab. 36.9 55.1 41.5										<b>BUSINESS:</b> Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). In 2017, 95% of net income was derived from these activities. Provides water services to 450,000 people in 80 municipalities throughout Connecticut and Maine. Acquired The Maine Water Company, January, 2012; Bliddesford and Saco Water, December, 2012; Heritage Village, February, 2017, Inc. Conn. Has 294 employees. Chairman/President/Chief Executive Officer: Eric W. Thornburg. Officers and directors own 2.5% of the common stock; BlackRock, Inc., 7.2% (4/17 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.									
<b>ANNUAL RATES of change (per sh)</b> Past 10 Yrs. Past 5 Yrs. Est'd '14-'16 to '21-'23 Revenues 4.0% 3.0% 6.0% "Cash Flow" 6.5% 9.5% 5.0% Earnings 8.0% 12.0% 5.5% Dividends 2.5% 3.0% 4.5% Book Value 6.0% 9.0% 4.5%										<b>CONNECTICUT WATER SERVICE HAS AGREED TO A DEFINITIVE MERGER WITH SJW GROUP.</b> Specifically, the all-stock deal, carrying an enterprise value of \$2.6 billion, entitles CTWS shareholders to receive 1.1375 shares of SJW Group common stock (valued at \$59.62) for each share of CTWS held. Effectively, SJW Group will own 60% of the business, with Connecticut owning the remaining 40%. However, Eric W. Thornburg, current chairman, president, and CEO of the latter, will be at the helm. Once completed, the newly formed company will serve approximately 1.5 million customers across California, Texas, Connecticut, and Maine. Annual revenues are expected to be in the realm of \$500 million. In addition, the two utilities have assured customers that they would not implement an immediate rate increase. This is a nonissue for Connecticut, as its most recent rate approval took effect last December (adding \$1.5 million per year to its top line). Further down the road, we think periodic rate hikes, as per usual, are in the cards for the combined entity. Finally, the transaction is slated to close by the end of this year, and is subject to regulatory and shareholder approval.									
<b>QUARTERLY REVENUES (\$ mill.)</b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2015 20.0 26.6 28.4 21.0 96.0 2016 21.6 26.1 29.5 21.5 98.7 2017 22.5 27.9 31.8 24.9 107.1 2018 25.5 30.0 33.5 26.0 115 2019 27.0 32.0 35.0 28.0 122										<b>CONNECTICUT WATER SERVICE HAS AGREED TO A DEFINITIVE MERGER WITH SJW GROUP.</b> In the meantime, Connecticut delivered impressive revenue growth to conclude 2017. Its fourth-quarter top-line haul of nearly \$25 million bested our \$23.8 million call, and rose more than 15% from the previous-year tally. The jump in revenues can be attributed to relatively recent acquisitions of Heritage Village Water and the Avon Water Company, as well as cost recovery for completed infrastructure projects and general rate increases. For 2018, our model forecasts modest top-line growth, to \$115 million, while our introductory revenue estimate for next year (exclusive of the above-mentioned merger) comes in at \$122 million. Aggressive capital investment ought to persist on its normal schedule. CTWS is on track to mirror 2017's spending budget of \$66 million. The company's primary objectives remain upgrading outdated water pipes and mains, and general improvements at water treatment plants. Shares of Connecticut Water are unranked for Timeliness due to the pending merger.									
<b>EARNINGS PER SHARE</b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2015 .28 .77 .79 .20 2.04 2016 .28 .89 .84 .07 2.08 2017 .36 .73 .80 .14 2.13 2018 .37 .77 .92 .24 2.30 2019 .38 .80 .96 .27 2.40										<b>CONNECTICUT WATER SERVICE HAS AGREED TO A DEFINITIVE MERGER WITH SJW GROUP.</b> In the meantime, Connecticut delivered impressive revenue growth to conclude 2017. Its fourth-quarter top-line haul of nearly \$25 million bested our \$23.8 million call, and rose more than 15% from the previous-year tally. The jump in revenues can be attributed to relatively recent acquisitions of Heritage Village Water and the Avon Water Company, as well as cost recovery for completed infrastructure projects and general rate increases. For 2018, our model forecasts modest top-line growth, to \$115 million, while our introductory revenue estimate for next year (exclusive of the above-mentioned merger) comes in at \$122 million. Aggressive capital investment ought to persist on its normal schedule. CTWS is on track to mirror 2017's spending budget of \$66 million. The company's primary objectives remain upgrading outdated water pipes and mains, and general improvements at water treatment plants. Shares of Connecticut Water are unranked for Timeliness due to the pending merger.									
<b>QUARTERLY DIVIDENDS PAID</b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2014 .2475 .2475 .2675 .2575 1.01 2015 .2575 .2575 .2875 .2875 1.05 2016 .2675 .2825 .2825 .2825 1.12 2017 .2825 .2975 .2975 .2975 1.18 2018 .2975										<b>CONNECTICUT WATER SERVICE HAS AGREED TO A DEFINITIVE MERGER WITH SJW GROUP.</b> In the meantime, Connecticut delivered impressive revenue growth to conclude 2017. Its fourth-quarter top-line haul of nearly \$25 million bested our \$23.8 million call, and rose more than 15% from the previous-year tally. The jump in revenues can be attributed to relatively recent acquisitions of Heritage Village Water and the Avon Water Company, as well as cost recovery for completed infrastructure projects and general rate increases. For 2018, our model forecasts modest top-line growth, to \$115 million, while our introductory revenue estimate for next year (exclusive of the above-mentioned merger) comes in at \$122 million. Aggressive capital investment ought to persist on its normal schedule. CTWS is on track to mirror 2017's spending budget of \$66 million. The company's primary objectives remain upgrading outdated water pipes and mains, and general improvements at water treatment plants. Shares of Connecticut Water are unranked for Timeliness due to the pending merger.									

(A) Diluted earnings. Next earnings report due late May.  
 (B) Dividends historically paid in mid-March, June, September, and December. \* Div'd reinvestment plan available.  
 (C) In millions  
 (D) Includes Intangibles. In 2017: \$67.0 million/\$5.55 a share.  
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 Company's Financial Strength B+  
 Stock's Price Stability 90  
 Price Growth Persistence 50  
 Earnings Predictability 85  
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 Nicholas P. Patrikis April 13, 2018





SJW GROUP NYSE-SJW				RECENT PRICE	P/E RATIO	TRAILING P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE		
<b>TIMELINESS</b> 3 Raised 6/30/17 <b>SAFETY</b> 3 New 4/22/11 <b>TECHNICAL</b> 3 Lowered 3/30/18 <b>BETA</b> .70 (1.00 = Market)				52.41	17.4	(Trailing: 18.3 Median: 21.0)	0.94	2.1%			
<b>2021-23 PROJECTIONS</b> High: 43.0 35.1 30.4 28.2 26.8 26.0 30.1 33.7 35.7 56.9 69.3 64.6 Low: 27.7 20.0 10.2 21.6 20.9 22.6 24.5 25.5 27.5 28.6 45.4 51.3										Target Price	Range
<b>Insider Decisions</b> J A S O N D J F to Buy 0 0 0 0 0 0 0 0 0 0 0 0 0 Options 0 0 0 0 0 1 0 0 0 0 0 0 0 to Sell 0 0 1 0 0 0 0 0 0 0 0 0 0				<b>Institutional Decisions</b> 2Q2017 3Q2017 4Q2017 to Buy 67 74 69 to Sell 73 56 67 Mkt% (000) 10969 12340 11290						% TOT. RETURN 3/18	
<b>MARKET CAP: \$1.1 billion (Mid Cap)</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						© VALUE LINE PUB. LLC	21-23
<b>CAPITAL STRUCTURE as of 12/31/17</b> Total Debt \$431.1 mill. Due in 5 Yrs \$14.3 mill. LT Debt \$431.1 mill. LT Interest \$20.0 mill. (LT Interest Coverage: 6.5x)				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Revenues per sh	21.10
<b>Leases, Uncapitalized: Annual rentals \$6.7 mill.</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						"Cash Flow" per sh	5.65
<b>Penelon Assets-12/17 \$133.4 mill.</b> Oblig. \$196.2 mill.				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Earnings per sh ^	3.45
<b>Pfd Stock None.</b> <b>Common Stock 20,521,000 shs.</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Div'd Decl'd per sh B=	1.45
<b>MARKET CAP: \$1.1 billion (Mid Cap)</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Cap'l Spending per sh	5.00
<b>CURRENT POSITION (\$MILL.)</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Book Value per sh	24.55
<b>ANNUAL RATES</b> Past 10 Yrs. Past 5 Yrs. Est'd '15-'17 to '21-'23				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Common Shs Outst'g C	23.00
<b>Revenues</b> 5.0% 5.5% 4.0%				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Avg Ann'l P/E Ratio	22.0
<b>"Cash Flow"</b> 7.0% 11.0% 3.5%				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Relative P/E Ratio	1.20
<b>Earnings</b> 9.0% 18.5% 6.0%				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Avg Ann'l Div'd Yield	1.9%
<b>Dividends</b> 4.5% 5.0% 6.5%				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Revenues (\$mill)	485
<b>Book Value</b> 5.5% 6.0% 3.0%				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Net Profit (\$mill)	80.0
<b>Quarterly Revenues (\$ mill)</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Income Tax Rate	21.0%
<b>Earnings per share ^</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						AFUDC % to Net Profit	1.5%
<b>Dividends per share B=</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Long-Term Debt Ratio	46.0%
<b>Book Value per share</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Common Equity Ratio	52.0%
<b>Quarterly Dividends Paid C=</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Total Capital (\$mill)	1050
<b>Business Description:</b> SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 230,000 connections with a total population of roughly one million people in the San Jose area and 14,000 connections that reaches about 42,000 residents in the region between San Antonio and Austin, Texas. The company also offers nonregulated water-related services and owns and operates commercial real estate investments. Has about 411 employees. Officers and directors (including Nancy O. Moss) own 22.9% of outstanding shares (3/18 proxy). Chairman & C.E.O.: Richard Roth, Inc.: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Net Plant (\$mill)	1350
<b>Merger Announcement:</b> SJW Group announced a definitive merger agreement (all-stock transaction) with Connecticut Water Service Inc. As per terms of the deal, which holds an enterprise value of about \$2.6 billion, Connecticut Water shareholders will receive 1.1375 shares of SJW Group common stock for each share of CTWS held. The ownership breakdown would be a 60%-40% split in favor of SJW Group. All in all, the deal, already unanimously approved by both companies' boards of directors, is expected to close by the end of 2018 (still subject to customary regulatory and shareholder approvals). Upon completion, the combined entity would be the third-largest publicly owned water and waste water utility in the United States. Indeed, its operational footprint across select domestic regions (Connecticut, California, Texas, and Maine) ought to be significantly bolstered. This includes all subsidiaries, such as Heritage Village, Maine Water Company, Avon Water, San Jose Water, and SJWTX Inc., to name a few. On balance, the merged entity is expected to generate annual sales of nearly \$500 million, and should be immediately accretive to earnings. Moreover, greater scalability and investment spending on infrastructure upgrades are likely to drive efficiency, especially on the expense front. Meanwhile, no further rate increases are expected in the near term (SJW has benefited from cumulative rate hikes of late). Lastly, Eric W. Thornburg, current chairman, president, and CEO of CTWS, will spearhead the newly combined company. SJW Group has substantially boosted its quarterly dividend payout. The utility raised its per-share distribution from \$0.2175, to \$0.28, almost a 30% jump (this excludes the special dividend paid last November). Assuming the merger goes off without a hitch, the newly formed company's annual dividend payment is likely to be equivalent to SJW Group's recently ramped figure. This issue is ranked to mirror the year-ahead broader market averages. SJW shares have slid more than 15% in price over the past three months. Thus, investors with a long-term holding period may find the current entry point enticing.				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Return on Total Cap'l	8.5%
<b>Financial Ratios:</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Return on Shr. Equity	14.0%
<b>Revenue Growth:</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Return on Com Equity	14.0%
<b>Profitability:</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						Retained to Com Eq	8.0%
<b>Dividend Yield:</b>				<b>2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</b>						All Div'ds to Net Prof	42%

(A) Diluted earnings. Excludes nonrecurring losses: '03, \$1.97; '04, \$3.78; '05, \$1.09; '06, \$16.36; '08, \$1.22; '10, \$0.46. GAAP accounting as of 2013. Next earnings report due late May. Quarterly earnings may not add due to rounding.  
 (B) Dividends historically paid in early March, June, September, and December. = Div'd reinvestment plan available.  
 (C) In millions, adjusted for stock splits.  
 (D) Paid special dividend of \$0.17 per share on 11/17  
 Company's Financial Strength B+  
 Stock's Price Stability 65  
 Price Growth Persistence 30  
 Earnings Predictability 45  
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YORK WATER NDQ:YORW		RECENT PRICE	P/E RATIO	Trailing: 38.5 Median: 24.0	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE
TIMELINESS	3 Raised 11/17/17	30.80	29.6		1.60	2.2%	
SAFETY	3 Lowered 7/17/15	High: 18.5, 16.5, 18.0, 18.0, 18.1, 18.5, 22.0, 24.3, 26.7, 39.8, 39.9, 34.2					Target Price 2021 2022 2023
TECHNICAL	5 Lowered 4/13/18	Low: 15.5, 6.2, 9.7, 12.8, 15.8, 16.8, 17.6, 18.8, 19.7					
BEYA	.80 (1.00 = Market)	LEGENDS					
2021-23 PROJECTIONS		Price Gain Ann'l Total High 45 (+45%) 122% Low 30 (-5%) 2%					
Insider Decisions		J A S O N D J F to Buy 2 13 2 2 13 2 2 15 2 Options 0 0 0 0 0 0 0 0 0 to Sell 0 0 0 0 0 0 0 0 0					
Institutional Decisions		202017 3Q2017 4Q2017 to Buy 42 40 29 to Sell 33 30 35 Hd's (000) 5206 5125 4588		Percent shares traded 12 0 4			
						% TOT. RETURN 3/18 THIS STOCK VL ARITH' INDEX 1 yr. -9.8 9.7 3 yr. 36.0 24.3 5 yr. 84.2 68.8	
						© VALUE LINE PUB. LLC 21-23	
						Revenues per sh 5.40 "Cash Flow" per sh 2.25 Earnings per sh A 1.60 Div'd Decl'd per sh B 1.00 Cap'l Spending per sh 1.05 Book Value per sh 11.60 Common Shs Outst'g C 12.50 Avg Ann'l P/E Ratio 22.5 Relative P/E Ratio 1.25 Avg Ann'l Div'd Yield 2.7%	
CAPITAL STRUCTURE as of 12/31/17							
Total Debt \$90.1 mill. Due in 5 Yrs \$42.5 mill.							
LT Debt \$80.1 mill. LT Interest \$5.3 mill.							
Pension Assets 12/17 \$41.4 mill. Oblig. \$44.6 mill.							
Pfd Stock None							
Common Stock 12,872,742 shs.							
MARKET CAP: \$400 million (Small Cap)							
CURRENT POSITION (\$MILL.)							
Cash Assets 2.9 4.2 --							
Accounts Receivable 3.5 4.3 4.9							
Inventory (Avg. Cost) .8 .7 .5							
Other 4.6 3.4 3.2							
Current Assets 11.8 12.6 8.6							
Accts Payable 1.8 3.7 3.1							
Debt Due 1.1 -- 3.1							
Other 4.4 4.5 6.0							
Current Liab. 6.2 8.2 9.1							
ANNUAL RATES of change (per sh)							
Past 10 Yrs. Past 5 Yrs. Est'd '15-'17 to '21-'23							
Revenues 3.5% 3.5% 8.5%							
"Cash Flow" 6.0% 6.0% 7.5%							
Earnings 5.5% 6.5% 9.0%							
Dividends 3.5% 3.5% 8.0%							
Book Value 5.0% 3.5% 4.5%							
QUARTERLY REVENUES (\$ mill.)							
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year							
2015 11.2 11.9 12.4 11.6 47.1							
2016 11.3 11.8 12.6 11.9 47.6							
2017 11.3 12.3 12.7 12.3 48.6							
2018 11.5 12.5 13.0 12.5 49.5							
2019 12.0 12.8 13.3 12.9 51.0							
EARNINGS PER SHARE A							
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year							
2015 .20 .22 .28 .27 .97							
2016 .19 .23 .27 .23 .92							
2017 .20 .23 .31 .27 1.01							
2018 .22 .24 .31 .28 1.05							
2019 .24 .27 .33 .31 1.15							
QUARTERLY DIVIDENDS PAID B							
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year							
2014 .1431 .1431 .1431 .1431 .572							
2015 .1495 .1495 .1495 .1555 .604							
2016 .1555 .1555 .1555 .1602 .627							
2017 .1602 .1602 .1602 .1666 .647							
2018 .1666							

(A) Diluted earnings. Next earnings report due late May.  
(B) Dividends historically paid in late February, June, September, and December.

(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	B
Price Growth Persistence	B
Earnings Predictability	B

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**We are modestly scaling back our profit outlook for York Water.** The utility posted net income of \$1.01 a share for 2017, \$0.04 shy of our call, but up nicely on an annual basis. Operation and maintenance expenses, plus general and administrative costs, were nearly 38% of total revenues last year. And we suspect that rising water production costs and higher salaries ought to persist in 2018. While a lower effective tax rate is undoubtedly a positive, we think the above-noted factors are apt to be offsetting. Thus, we are trimming a dime from our 2018 earnings estimate, to \$1.05 a share. Bottom-line growth may be more apparent in 2019, though, as our model forecasts share net of \$1.15. York stock is off to a rocky start to the year. Shares of the regulated water utility are down almost 10% in value since the beginning of the year. We think this is due partly to selling pressure from broader market indices, as well as York's relatively stretched valuation. Shares hit an all-time high of just under \$40 per share midway through 2017. Capital spending ought to continue in

full force. York nearly doubled its expenditures last year (\$24.6 million) when compared to 2016. We expect similar (albeit slightly less aggressive) spending over the pull to next decade, as the company looks to rapidly improve its aging infrastructure, namely raw water pumping stations and pipe replacements. In fact, management guided capital spending of about \$23 million and \$20 million for 2018 and 2019, respectively. Furthermore, in our view, hardware upgrades ought to translate into more-efficient service and operations over the long haul. Lastly, we would not be surprised to see a rate-hike filing sometime this year, which helps recoup some of the projected spending. We think investors can find more-attractive options elsewhere, at this juncture. York Water shares are ranked to move in line with the year-ahead broader market averages (Timeliness: 3). Meanwhile, capital appreciation potential over the 3- to 5-year stretch is subpar. What's more, the dividend yield is just about level with the Value Line median and the majority of its utility peers. *Nicholas P. Patrikis* April 13, 2018

**BUSINESS:** The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2017, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 198,000. Has more than 69,000 customers. Residential customers accounted for 64% of 2017 revenues; commercial and industrial (28%); other (8%). It also provides sewer billing services, incorporated. PA. York had 102 full-time employees at 12/31/17. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (3/18 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

CASE: UW 174  
WITNESS: MATT MULDOON

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 207**

**Security Market News  
(News Investors Are Seeing)**

**Exhibits in Support  
of Direct Testimony**

**May 3, 2018**

## Merger News Water Utility Investors Are Seeing

### American Water Works' Acquisition of Pivotal Home Solutions is Credit Negative

by Nana Hamilton, Analyst; Ryan Wobbrock, VP and Senior Analyst; and Dexter East, Associate Analyst – Moody's – Apr. 16, 2018

Last Wednesday, **American Water Works Company, Inc. (AWK, A3 negative)** announced an **agreement** with The **Southern Company (Baa2 negative)** to **acquire Southern's home warranty business, Pivotal Home Solutions**, for a total consideration of **\$365 million**, including approximately \$7 million of working capital. AWK plans to finance the acquisition with an equal mix of debt and equity. The acquisition is credit negative for AWK because it **increases its unregulated business exposure**, particularly to services **unrelated to the water business**.

Although the transaction is slightly positive to AWK's ratio of funds from operations (FFO) to net debt, we **expect** the company's **credit metrics to weaken** over the next two years owing to **continued debt-funded growth**, an **increasing dividend and tax leakage** resulting from US federal tax reform.

AWK plans to permanently finance half of the acquisition with debt issued through its non-operating financing subsidiary American Water Capital Corp (AWCC, A3 negative). **We expect** that this **debt**, which is about 3.75x of estimated Pivotal EBITDA, **will be pushed down to American Water Enterprises Inc.**, which holds the company's market-based businesses, and will be supported by Pivotal's EBITDA. However, we estimate that the percentage of **debt** at AWCC **not recovered in utility rates will increase** to approximately 25% following the transaction from 23% at the end of 2017, a credit negative.

The acquisition purchase price implies an EBITDA multiple of 7.5x based on Pivotal's 2017 full-year EBITDA. We see an uplift to AWK's FFO/net debt ratio of 20-30 basis points with the additional cash flow from Pivotal and the associated debt financing. However, with our expectation that AWK's financial metrics will weaken, we continue to expect its FFO/net debt ratio over the next several years to hover near our previously indicated 15% quantitative downgrade guidance for an A3 rating.

We generally view AWK's unregulated businesses as neutral to the company's overall credit because they constitute less than 15% of operations and are largely within AWK's core competencies of water system operations. At the end of 2017, unregulated operations were about 5% of AWK's EBITDA and approximately 9% of net income. With the addition of Pivotal to AWK's existing homeowner services business, we expect that unregulated operations will increase to approximately 8% of consolidated EBITDA and approximately 14% of net income over the next few years. Although the contribution of unregulated operations remains below 15%, **Pivotal adds to AWK operations** that are **higher risk relative** to the **utility operations** because they **depend on market prices for cost recovery** and are **subject to greater competition**.

**Pivotal also adds services such as gas line and HVAC operations**, as shown in the exhibit below, that are **not related to AWK's core business**.

–

## Connecticut Water Service's Board

### Rebuffs Eversource Energy's Acquisition Bid

by Selene Balasta – S&P Global Market Intelligence – Apr. 19, 2018

**Eversource** Energy said **April 19** that it has made a **non-binding proposal to acquire** all outstanding shares of **Connecticut Water** Service Inc. at \$63.50 per share, in cash or in Eversource common shares. **Connecticut Water** confirmed receiving the proposal, but its **board of directors maintained** that **SJW Group's bid** is **still** the **best** option for their shareholders.

**SJW** Group also **affirmed** its **commitment to** the **merger**.

In a bid made during the election of Connecticut Water shareholders on April 5, Eversource said it is offering a "superior alternative" to the all-stock transaction announced by SJW Group on March 15. Eversource first expressed interest in buying the water utility in the second half of 2017.

**Eversource said** its bid represents a **21% premium to Connecticut Water's closing share price on March 14**. Connecticut Water shareholders who opted to receive Eversource shares would also be eligible to receive the **equivalent of an 81% dividend uplift** based on the closing price of Eversource's shares on April 4, **as well as** an **annualized quarterly dividend** of 29.75 cents per share declared **by Connecticut Water** on January 18.

**Eversource** is the **parent** company of **Aquarion** Water Co. Inc., a Connecticut-based water utility which serves nearly 230,000 customers in Connecticut, Massachusetts and New Hampshire, and is near Connecticut Water's service territory.

"Eversource's acquisition of Connecticut Water would be a compelling, superior alternative to the SJW transaction for Connecticut Water's customers, employees, suppliers, communities and shareholders," said **Eversource Chairman, President and CEO James Judge** in the proposal. The **geographical proximity** of the Connecticut Water and Aquarion systems would **"enable cost-effective infrastructure investment and support regional economic growth,"** Judge added.

**Meanwhile**, under the **SJW Group's "merger of equals," Connecticut Water shareholders** would **receive 1.1375 shares** of **SJW** Group common **stock for each share** of **Connecticut Water**. This is the **equivalent of \$63.70 per share**, based on SJW Group's closing share price on **April 19**. **At deal close**, the combined company would be **40% owned** by **Connecticut Water** shareholders and **60%** by **SJW** Group shareholders, on a fully diluted basis.

"Having carefully reviewed the unsolicited acquisition proposal, we continue to believe that Connecticut Water's merger with **SJW** Group is in the **best interest** of our **shareholders**, particularly given the **significant growth opportunity** that the combined



organization will have **as a leading pure-play water company**," said **Carol Wallace, Chairman** of the **Connecticut Water** board of directors.

**Connecticut Water's board unanimously recommended** that **Connecticut Water shareholders vote** in favor of the company's merger with the **SJW** Group. The **merger is expected to close** by the **end of 2018, subject to** certain conditions and **approvals from the shareholders** of SJW Group stockholders and Connecticut Water, as well as **approval from regulatory** bodies. The transaction is not subject to any financing condition.

**Eversource** Energy has **retained Goldman Sachs** as its financial adviser and Ropes & Gray as its legal adviser on the matter. **Wells Fargo Securities LLC serves** as **Connecticut Water's** financial adviser and Sullivan & Cromwell LLP as its legal counsel.

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## **Eversource Energy Discloses Proposal to Acquire Connecticut Water Service, Inc. for \$63.50 per Share**

Eversource Press Release— S&P Global Market Intelligence – Apr. 18, 2018

Acquisition would combine two local Connecticut businesses with highly complementary footprints in the Northeast

Proposal represents superior alternative to generate value for shareholders, employees, customers, and local communities

**Eversource** Energy (NYSE: ES) today **announced** that on April 5, 2018 it made a **proposal to acquire** all the outstanding shares of **Connecticut Water Service, Inc.** (Nasdaq: CTWS) **for \$63.50 per share in cash and/or in Eversource common shares** at the election of Connecticut Water shareholders.

**Eversource believes its proposal** is a **superior alternative to the all-stock transaction proposed** in **SJW** Group's (NYSE: SJW) agreement announced March 15, 2018 **to acquire Connecticut Water**. Eversource's proposal represents a 21% premium to Connecticut Water's closing share price on March 14, 2018, the day prior to the SJW announcement. Eversource's proposal also represents a premium of 22% to Connecticut Water's 20-day volume-weighted average price as of March 14, 2018. In addition, those Connecticut Water shareholders who elect to receive Eversource shares would realize the equivalent of an 81% dividend uplift based on the closing price of Eversource's shares on April 4, 2018 and the annualized quarterly dividend of \$0.2975 per share declared by Connecticut Water on January 18, 2018.

Eversource has attempted to engage privately with Connecticut Water for some time. The company expressed its interest in pursuing an acquisition of Connecticut Water in 2017. On April 5, 2018, Eversource verbally communicated its intent to submit a proposal to David C. Benoit, the Chief Executive Officer of Connecticut Water, and delivered a written proposal the same day. On April 17, 2018, Eversource sent a follow-up communication to Connecticut Water expressing its continued interest in pursuing an acquisition.

We believe that our proposal represents a unique opportunity to deliver significant and immediate value to Connecticut Water's shareholders, customers, employees, and local communities," said Eversource Chairman, President and Chief Executive Officer Jim Judge. "As such, we were surprised and disappointed that Connecticut Water's Board of Directors has been unwilling to engage in discussions with us. We urge the Board of Connecticut Water to act in the best interests of its shareholders by meeting with us to seriously discuss our compelling proposal."

Eversource has a best-in-class financial profile, including a market capitalization of approximately \$19 billion, a long-track record of consistent and robust earnings and dividend growth, an industry best S&P credit rating, and a strong and growing dividend. There would be no financing contingency as part of the transaction.

The proposed transaction would combine two highly complementary local businesses, and would enable cost-effective regional investment and support economic growth. **Eversource** is the **parent** company of **Aquarion Water** Company, a Connecticut based water utility whose service territory is in close proximity to Connecticut Water's service territory. Aquarion Water serves nearly 230,000 customers in Connecticut, Massachusetts, and New Hampshire, with approximately 90% located in Connecticut. Connecticut Water serves approximately 125,000 customers in Connecticut and Maine with approximately 85% located in Connecticut.

"The proposed transaction would provide Connecticut Water customers with the benefit of premier service quality and a highly reliable water supply into the future," said Aquarion President and Chief Executive Officer Charles Firlotte. "The combined company would have a complementary service territory and would allow for an expansion of the superior customer service our employees proudly provide."

Eversource has retained Goldman Sachs as its financial advisor and Ropes & Gray as its legal advisor on this matter.

The full text of Eversource's April 5, 2018 non-binding proposal to acquire Connecticut Water appears below:

April 5, 2018

—

Mr. **David C. Benoit**

President and Chief Executive Officer  
**Connecticut Water** Service, Inc.  
93 West Main Street  
Clinton, CT 06413

Dear David:

On behalf of Eversource Energy ("Eversource"), I am hereby submitting a proposal to acquire Connecticut Water Service, Inc. ("Connecticut Water"). As you are likely aware, we expressed interest in pursuing an acquisition of Connecticut Water in the second half of 2017. At this time, we are proposing terms for an acquisition that we firmly view as superior to the terms of the proposed transaction with San Jose Water

("SJW"), reasonably likely to lead to a Superior CTWS Proposal (as defined in the merger agreement with SJW) and in the best interest of the customers, employees, suppliers, local communities and shareholders of Connecticut Water due to the greater benefits achievable through an Eversource transaction.

Eversource proposes to acquire all of the outstanding shares of Connecticut Water common stock for \$63.50 per share in cash and/or in Eversource common stock at the election of Connecticut Water shareholders. Connecticut Water shareholders electing to receive Eversource stock as consideration would realize the equivalent of an 81% dividend uplift based on the closing price of Eversource's common stock on April 4, 2018 and the annualized quarterly cash dividend of \$0.2975 per share declared by Connecticut Water on January 18, 2018. The \$63.50 consideration payable to Connecticut Water shareholders would not be reduced by the termination fee payable to SJW.

The \$63.50 price represents a 21% premium to Connecticut Water's undisturbed share price on March 14, 2018 and a 22% premium to the 20-day VWAP for the period ending March 14, 2018.

Eversource has a market capitalization of approximately \$19 billion and is an A+ rated company by Standard & Poor's, making Eversource a strong financial partner for the transaction. There would be no financing contingency as part of the transaction.

Eversource has consistently demonstrated credibility, expertise, and responsiveness in its proceedings before the Connecticut Public Utilities Regulatory Authority ("CT PURA") and has a strong track record for successful regulatory outcomes. In particular, **Eversource** has considerable experience in obtaining regulatory approvals required for utility mergers and acquisitions. This is evidenced through our **recent acquisition of Aquarion Water** Company ("Aquarion"), for which we **obtained regulatory approvals in four states** and completed the transaction within five months from the regulatory filing date and within six months from the announcement of the transaction.

In the final decision issued by **CT PURA approving the Aquarion acquisition**, attributes of the transaction that were cited as particularly beneficial to customers and employees included local ownership, financial stability, employee benefits and community support. In fact, Eversource is uniquely positioned to create substantial benefits for customers served by Connecticut Water, while preserving local ownership and accountability. As part of the approvals required to complete the Aquarion acquisition, Eversource obtained regulatory approval in Maine with a positive outcome for the company and a minimum of administrative process. In summation, Eversource's acquisition of Connecticut Water would be a compelling, superior alternative to the SJW transaction for Connecticut Water's customers, employees, suppliers, communities and shareholders. An Eversource transaction would also leverage the geographical proximity of the Connecticut Water and Aquarion systems to enable cost-effective infrastructure investment and support regional economic growth.

I have reviewed this opportunity with Eversource's Board of Trustees, which supports the submission of this proposal. We are prepared to engage with you immediately and to reach a definitive agreement as expeditiously as possible. For the avoidance of doubt, this proposal is a non-binding indication of interest, subject to confirmatory due diligence. A binding obligation with respect to this transaction will result only from the execution of a definitive agreement containing terms and conditions that are mutually acceptable to the parties.

We look forward to your prompt response.

Sincerely,

James J. Judge  
Chairman, President and Chief Executive Officer  
Eversource Energy

About Eversource:

Eversource (NYSE: ES) transmits and delivers electricity and natural gas and supplies water to approximately 4 million customers in Connecticut, Massachusetts and New Hampshire. Recognized as the top U.S. utility for its energy efficiency programs by the sustainability advocacy organization Ceres, Eversource harnesses the commitment of about 8,000 employees across three states to build a single, united company around the mission of safely delivering reliable energy and water with superior customer service. For more information, please visit our website ([www.eversource.com](http://www.eversource.com)) and follow us on Twitter (@EversourceCorp) and Facebook ([facebook.com/EversourceEnergy](https://facebook.com/EversourceEnergy)). For more information on our water services, visit [www.aquarionwater.com](http://www.aquarionwater.com).

Forward Looking Statement:

This news release includes statements concerning Eversource Energy's expectations, beliefs, plans, objectives, goals, strategies, assumptions of future events, future financial performance or growth and other statements that are not historical facts. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. In some cases, readers can identify these forward-looking statements through the use of words or phrases such as "estimate," "expect," "anticipate," "intend," "plan," "project," "believe," "forecast," "should," "could" and other similar expressions. Forward-looking statements are based on current expectations, estimates, assumptions or projections and are not guarantees of future performance.

These expectations, estimates, assumptions or projections may vary materially from actual results. Accordingly, any such statements are qualified in their entirety by reference to, and are accompanied by important factors that could cause our actual results to differ materially from those contained in our forward-looking statements, including, but not limited to, in the case of Eversource's proposal to acquire Connecticut Water, the failure to complete the subject transaction upon the terms set forth in Eversource's proposal; cyber-attacks or breaches, including those resulting in the compromise of the confidentiality of our proprietary

information and the personal information of our customers; acts of war or terrorism or grid disturbances that may disrupt our transmission and distribution systems; ability or inability to commence and complete our major strategic development projects and opportunities; actions or inactions of local, state and federal regulatory, public policy and taxing bodies; substandard performance of suppliers; climate change; disruption to our transmission and distribution systems; new technology and conservation of energy; contamination or failure of our water supplies; unauthorized access to confidential and proprietary information; changes in laws, regulations or regulatory policy; changes in economic conditions, including impact on interest rates, tax policies, and customer demand and payment ability; changes in business conditions, which could include disruptive technology related to our current or future business model; changes in weather patterns, including extreme weather and other effects of climate change; reputational risk; changes in levels or timing of capital expenditures; technological developments and alternative energy sources; disruptions in the capital markets or other events that make Eversource Energy's access to necessary capital more difficult or costly; developments in legal or public policy doctrines; changes in accounting standards and financial reporting regulations; actions of rating agencies; and other presently unknown or unforeseen factors. minimum of administrative process.

Other risk factors are detailed in Eversource's reports filed with the Securities and Exchange Commission (SEC) and updated as necessary, and are available on the SEC's website at [www.sec.gov](http://www.sec.gov). All such factors are difficult to predict and contain uncertainties that may materially affect Eversource Energy's actual results many of which are beyond our control. You should not place undue reliance on the forward-looking statements; each speaks only as of the date on which such statement is made, and, except as required by federal securities laws, Eversource Energy undertakes no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events.

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Brunswick Group: Jonathan Doorley, 917-231-6201  
or Darren McDermott, 917-345-3621



Cost of Capital

	Amount	Cap Struct	Cost	Wtd. Cost
Charlont Hill LLC (water tank)	204,020	41.45%	7.50%	3.11%
		0.00%		0.00%
		0.00%		0.00%
<b>Total Debt</b>	<b>204,020</b>	<b>41.45%</b>		<b>3.11%</b>
Equity	288,166	58.55%	9.25%	5.42%
		0.00%		0.00%
		0.00%		0.00%
<b>Total Equity</b>	<b>288,166</b>	<b>58.55%</b>		<b>5.42%</b> ROE
<b>Total Debt + Equity</b>	<b>492,186</b>	<b>100.00%</b>		<b>8.52%</b> ROR

**Rate Base**

**PUC Fee (necessary for Working Cash calculation)**

Revenue Requirement (Calculated below)	173,386	
x PUC Fee Rate	0.30%	
= PUC Fee	520	<i>Circular -- PUC Fee is a component of Revenue Requirement, which is used to calculate PUC Fee.</i>

**Working Cash (1/12 of Operating Expenses, including PUC Fee)**

Total Operating Expenses (Excluding PUC Fee)	86,712
+ PUC Fee	520
= Total Oper. Expense	87,232
÷ Months Per Year	12
= Working Cash	7,269

**Rate Base**

Net Invested Plant	474,722
+ Working Cash	7,269
+ Material/Supplies Inventory	10,195
= Rate Base	492,186

**Required Net Income**

Rate Base	492,186
x Rate of Return	8.52%
= Required Net Income	41,957

**State & Federal Taxes**

**Net-to-Gross Factor**

Gross Income	100.00%
- Effective State Tax Rate	6.60%
= % of Gross Remaining After State Tax	93.40%
x Effective Federal Tax Rate	21.00%
= % of Gross to Federal Tax	19.61%
% of Gross Remaining After State Tax	93.40%
- % of Gross to Federal Tax	19.61%
= % Remaining After State & Federal Tax	73.79%
Gross Income	100.00%
÷ % Remaining After State & Federal Tax	73.79%
= NTG Factor	1.35527

*Circular -- NTG Factor requires Effective Tax Rates, which requires Taxable Income, which requires NTG Factor.*

**Taxable Income**

Rate Base	492,186
x Return on Equity	5.42%
= After-Tax Profit	26,655
x NTG Factor	1.3553
= Pretax Profit (Taxable Income)	36,125

**State Tax Brackets**

Lower Bound	Rate
\$ -	6.6%
\$ 1,000,000	7.6%

**State Tax**

Taxable Income	36,125
x Effective State Tax Rate	6.60%
= State Tax	2,384

**Federal Tax Brackets**

Lower Bound	Rate
\$ -	15%
\$ 50,000	25%
\$ 75,000	34%
\$ 100,000	39%
\$ 335,000	34%
\$ 10,000,000	35%
\$ 15,000,000	38%
\$ 18,333,333	35%

**Federal Tax**

Taxable Income	36,125
- State Tax	2,384
= Federal Taxable Income	33,741
x Effective Federal Tax Rate	21.00%
= Federal Tax	7,086

**Non-Revenue-Sensitive Deductions**

Total Operating Expenses (Non-revenue-sensitive)	86,712	<i>All Operating Expenses, except PUC Fee</i>
+ Total Other Deductions (Non-revenue-sensitive)	34,727	<i>All 'Other Revenue Deductions' except State &amp; Federal Taxes</i>
= Total Non-Revenue-Sensitive Deductions	121,439	

**Revenue Requirement**

Non-Revenue-Sensitive Deductions	121,439
+ Required Net Income	41,957
+ Taxes	9,470
+ PUC Fee	520
= Revenue Requirement	173,386



Account	Test Year	Adjustments	Total
<b>OPERATING EXPENSES</b>			
<b>601 Salaries and Wages - Employees</b>			
Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -
<b>603 Salaries and Wages - Officers</b>			
Company Proposed	\$ 28,258	\$ 28,524	\$ 56,782
Staff Adjustments:			
Comparable OWWA salary for Office Mgr (\$43,962) based on described duties, level of contractor involvement, and other duties as real estate broker.		(47,182)	
In UW 145, Lesli's salary was \$9,600 and Maryanne's was \$30,000 for a combined total of \$39,600. Minus AI or approval, allow only the amt approved in UW 145 like other AI's.			
Staff Proposed	\$ 28,258	\$ (18,658)	\$ 9,600
Total Staff Adjustment	\$ -	\$ (47,182)	\$ (47,182)
<b>604 Employee Pension &amp; Benefits</b>			
Company Proposed	\$ -	\$ 24,000	\$ 24,000
Staff Adjustments:			
No current benefit to water customers; retroactive ratemaking.		(24,000)	
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ (24,000)	\$ (24,000)
<b>610 Purchased Water</b>			
Company Proposed	\$ -	\$ -	\$ -
Staff Adjustments:			
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -
<b>611 Telephone/Communications</b>			
Company Proposed	\$ 3,171	\$ (1,748)	\$ 1,423
Staff Adjustments:			
DR 14-Double entry of (\$419.60) per Company response.		(420)	
Staff Proposed	\$ 3,171	\$ (2,168)	\$ 1,003
Total Staff Adjustment	\$ -	\$ (420)	\$ (420)
<b>615 Purchased Power</b>			
Company Proposed	\$ 197	\$ -	\$ 197
Staff Proposed	\$ 197	\$ -	\$ 197
Total Staff Adjustment	\$ -	\$ -	\$ -
<b>616 Fuel for Power Production</b>			
Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -
<b>617 Other Utilities</b>			
Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -
<b>618 Chemical / Treatment Expense</b>			
Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -
<b>619 Office Supplies</b>			
Company Proposed	\$ 767	\$ -	\$ 767
Staff Proposed	\$ 767	\$ -	\$ 767
Total Staff Adjustment	\$ -	\$ -	\$ -

**619.1 Postage**

Company Proposed	\$ 462	\$ -	\$ 462
Staff Proposed	\$ 462	\$ -	\$ 462
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**620 O&M Materials/Supplies**

Company Proposed	\$ 6,583	\$ -	\$ 6,583
Staff Adjustments:			
Staff Proposed	\$ 6,583	\$ -	\$ 6,583
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**621 Repairs to Water Plant**

Company Proposed	\$ 6,171	\$ -	\$ 6,171
Staff Proposed	\$ 6,171	\$ -	\$ 6,171
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**631 Contract Svcs - Engineering**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**632 Contract Svcs - Accounting**

Company Proposed	\$ 3,279	\$ -	\$ 3,279
Staff Proposed	\$ 3,279	\$ -	\$ 3,279
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**633 Contract Svcs - Legal**

Company Proposed	\$ -	\$ 1,782	\$ 1,782
Staff Proposed	\$ -	\$ 1,782	\$ 1,782
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**634 Contract Svcs - Management Fees**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**635 Contract Svcs - Testing**

Company Proposed	\$ 2,310	\$ (1,055)	\$ 1,255
Staff Proposed	\$ 2,310	\$ (1,055)	\$ 1,255
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**636 Contract Svcs - Labor**

Company Proposed	\$ 10,133	\$ (9,319)	\$ 814
Staff Proposed	\$ 10,133	\$ (9,319)	\$ 814
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**637 Contract Svcs - Billing/Collection**

Company Proposed	\$ 8,198	\$ 1,640	\$ 9,838
Staff Proposed	\$ 8,198	\$ 1,640	\$ 9,838
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**638 Contract Svcs - Meter Reading**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**639 Contract Svcs - Other**

Company Proposed	\$ 48,640	\$ 1,319	\$ 49,959
Staff Adjustments:			
DR 42--Subtract the three year average of the Capitalized Labor costs		(25,869)	
Average of 2014-2016 years is \$25,869.20			
New water operator contract is \$49,959.			
In UW 145, labor costs were proposed at \$11,000, and adjstd to a combined total of repairs, O&M, and labor total of \$8,581 (not including capitalized labor). By Comparison, in UW 174, Company proposes \$49,959 for contract, minus \$25,869 cap labr.			
Staff Proposed	\$ 48,640	\$ (24,550)	\$ 24,090
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ (25,869)</b>	<b>\$ (25,869)</b>

**641 Rental of Building/Real Property**

Company Proposed	\$ 7,000	\$ 15,000	\$ 22,000
Staff Adjustments:			
DR 9--No AI agreements, AI's newly filed, pending outcome AI review		(15,000)	
Justification for AI costs used comparables to Clackamas--			
Welches storage units would provide more accurate comparable.			

Staff Proposed	\$ 7,000	\$ -	\$ 7,000
Total Staff Adjustment	\$ -	\$ (15,000)	\$ (15,000)

**642 Rental of Equipment**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -

**643 Small Tools**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -

**648 Computer/Electronic Expenses**

Company Proposed	\$ 107	\$ -	\$ 107
Staff Proposed	\$ 107	\$ -	\$ 107
Total Staff Adjustment	\$ -	\$ -	\$ -

**650 Transportation**

Company Proposed	\$ 2,742	\$ (90)	\$ 2,652
Staff Adjustments:			
All contract labor, justification of meter reading and checking water lines is also in the water Operator contract. Cost out of porportion-to use. \$211 in cc for gas=\$2.50 per gal, approx 84 gal, or 1351 miles at 16 mpg @ .545 fed mileage tax, allow \$736 for mileage of Buick and all the WHO and Cunningham invoices @ 1043 for a total of \$1779. Company total 2,652-1779=(873) adjustment		(873)	
DR 28, 29, & 70			
Staff Proposed	\$ 2,742	\$ (963)	\$ 1,779
Total Staff Adjustment	\$ -	\$ (873)	\$ (873)

**656 Vehicle Insurance**

Company Proposed	\$ 1,322	\$ -	\$ 1,322
DR 28, 29, 70 & 71 See comments above relating to vehicle--remove insurance expense based on mileage reimbursement above. No vehicle insurance allowance in UW 145.		(1,322)	
Staff Proposed	\$ 1,322	\$ (1,322)	\$ -
Total Staff Adjustment	\$ -	\$ (1,322)	\$ (1,322)

**657 General Liability Insurance**

Company Proposed	\$ 4,044	\$ (978)	\$ 3,066
Staff Proposed	\$ 4,044	\$ (978)	\$ 3,066
Total Staff Adjustment	\$ -	\$ -	\$ -

**658 Workers' Comp Insurance**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -

**659 Insurance - Other**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -

**666 Amortz. of Rate Case**

Company Proposed	\$ -	\$ 6,333	\$ 6,333
Staff Proposed	\$ -	\$ 6,333	\$ 6,333
Total Staff Adjustment	\$ -	\$ -	\$ -

**667 Gross Revenue Fee (PUC)**

Company Proposed	\$ 479	\$ 40	\$ 519
Staff Proposed	\$ 479	\$ 41	\$ 520
Total Staff Adjustment	\$ -	\$ 1	\$ 1

**670 Bad Debt Expense**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -

**671 Cross Connection Control Program**

Company Proposed	\$ 150	\$ (75)	\$ 75
Staff Proposed	\$ 150	\$ (75)	\$ 75
Total Staff Adjustment	\$ -	\$ -	\$ -

**673 Training and Certification**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
Total Staff Adjustment	\$ -	\$ -	\$ -

**674 Consumer Confidence Report**

Company Proposed	\$ 157	\$ -	\$ 157
Staff Proposed	\$ 157	\$ -	\$ 157
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**675 Miscellaneous Expense**

Company Proposed	\$ 2,759	\$ (215)	\$ 2,544
Staff Adjustments:			
Finance charge (Exhibit 2)		(1)	
Tax extension (Exhibit 2)		(150)	
Bank charge (Exhibit 2)		(33)	
Bank charge (Exhibit 2)		(6)	
Staff Proposed	\$ 2,759	\$ (405)	\$ 2,354
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ (190)</b>	<b>\$ (190)</b>

**OE1 Other Expense 1**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**OE2 Other Expense 2**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**OE3 Other Expense 3**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**OE4 Other Expense 4**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**OE5 Other Expense 5**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**OTHER REVENUE DEDUCTIONS**

**403 Depreciation Expense**

Company Proposed	\$ 23,498	\$ -	\$ 23,498
Staff Proposed	\$ 23,498	\$ (2,262)	\$ 21,236
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ (2,262)</b>	<b>\$ (2,262)</b>

**406 Amort of Plant Acquisition Adjustment**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**407 Amortization Expense**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**408.11 Property Tax**

Company Proposed	\$ 9,334	\$ 78	\$ 9,412
Staff Adjustments:			
DR 2-Remove property taxes for barn lot owned by trustee/Lesli Bekins that is leased to water company pending outcome of AI review		(1,201)	
Staff Proposed	\$ 9,334	\$ (1,123)	\$ 8,211
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ (1,201)</b>	<b>\$ (1,201)</b>

**408.12 Payroll Tax**

Company Proposed	\$ 7,742	\$ (2,462)	\$ 5,280
Staff Proposed	\$ 7,742	\$ (2,462)	\$ 5,280
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**408.13 Other**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**409.1 Federal Income Tax**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ 7,086	\$ 7,086
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ 7,086</b>	<b>\$ 7,086</b>

**409.11 Oregon Income Tax**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ 2,384	\$ 2,384
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ 2,384</b>	<b>\$ 2,384</b>

**409.13 Extraordinary Items Income Tax**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**UTILITY RATE BASE****101 Utility Plant in Service**

Company Proposed	\$ 1,051,997	\$ -	\$ 1,051,997
Staff Adjustments:			

Adjust to match Plant schedules--look at DR relating to meter addition in last rate case, plus actual meters added, tyrolean addition, mileage, 100,000 water tower additional expense in 1980		1,019,060	
DR 38--Tyrolean Meadows Overruns True Up (\$14,419)			
DR 40--ADD: Allowance for Instaling Meters (\$49,500)			
DR 37--Correct water tower expense of \$48,475 to \$59,249.22 for a upward increase of \$10,774			

Staff Proposed	\$ 1,051,997	\$ 1,019,060	\$ 2,071,057
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ 1,019,060</b>	<b>\$ 1,019,060</b>

**105 Construction Work in Progress**

Company Proposed	\$ -	\$ -	\$ -
Staff Adjustments:			

CWIP removed from Plant		5,441	
Rmv CWIP pending outcome of DR response	(5,441)		

Staff Proposed	\$ (5,441)	\$ 5,441	\$ -
<b>Total Staff Adjustment</b>	<b>\$ (5,441)</b>	<b>\$ 5,441</b>	<b>\$ -</b>

**108 - Accumulated Depreciation of Plant**

Company Proposed	\$ 520,939	\$ -	\$ 520,939
Staff Adjustments:			

Automatic adjustment to match Plant schedules		193,622	
Note: true up of plant uses original install date.			
No 2017 depreciation included.			

Staff Proposed	\$ 520,939	\$ 193,622	\$ 714,561
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ 193,622</b>	<b>\$ 193,622</b>

**271 - Contributions in Aid of Construction**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ 1,077,641	\$ 1,077,641
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ 1,077,641</b>	<b>\$ 1,077,641</b>

**272 + Accumulated Amortization of CIAC**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ 195,867	\$ 195,867
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ 195,867</b>	<b>\$ 195,867</b>

**281 - Accumulated Deferred Income Tax**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**0 - Excess Capacity**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ -	\$ -	\$ -
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**Working Capital****151 Materials and Supplies Inventory**

Company Proposed	\$ -	\$ -	\$ -
Staff Proposed	\$ 10,195	\$ -	\$ 10,195
Staff Proposed	\$ 10,195	\$ -	\$ 10,195
<b>Total Staff Adjustment</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

**0 Working Cash (Total Op Exp /12)**

Company Proposed	\$ 11,411	\$ 5,430	\$ 16,841
Staff Adjustments:			

Automatic calculation (see 'calculations' tab)		(9,572)	


Staff Proposed	\$ 11,411	\$ (4,142)	\$ 7,269
Total Staff Adjustment	\$ -	\$ (9,572)	\$ (9,572)

**Adjustment Summary**

	Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals	Explanation of Adjustment
<b>REVENUES</b>				
Unmetered	\$ -	\$ -	\$ -	
Residential Flat Rate Water Sales	\$ 90,356	\$ (2,894)	\$ 87,462	revenue sensitive adjustment-residential and commercial flat rate combined
Commercial Flat Rate Water Sales	\$ 27,927	\$ (27,927)	\$ -	revenue sensitive adjustment-residential and commercial flat rate combined
Residential Metered Water Sales	\$ 21,019	\$ (21,019)	\$ -	revenue sensitive adjustment-combining res and commercial metered rate
Commercial Metered Water Sales	\$ 160,569	\$ (82,682)	\$ 77,887	revenue sensitive adjustment-combining res and commercial metered rate
Fire Protection Sales (Hydrant Mtc.)	\$ 2,188	\$ (658)	\$ 1,490	DR 36-3 year avg of expenses is \$1263 per year/2016 test yr expense was \$1,530
Hydrant Water Sales (Water Hauling)	\$ 4,231	\$ -	\$ 1,986	Adjusted to Staff proposed consumption rate
Water Sales for Resale	\$ -	\$ -	\$ -	
Miscellaneous Services	\$ -	\$ 4,562	\$ 4,562	Revenues added for inclusion in rate case as revenue source.
Cross Connection Control	\$ -	\$ -	\$ -	
Other	\$ -	\$ -	\$ -	
<b>Total Revenue</b>	<b>\$ 306,290</b>	<b>\$ (132,904)</b>	<b>\$ 173,386</b>	

**Acct. OPERATING EXPENSES**

601 Salaries and Wages - Employees	\$ -	\$ -	\$ -	
603 Salaries and Wages - Officers	\$ 56,782	\$ (47,182)	\$ 9,600	Adj. to same salary as UW 145 due to no AI contracts filed or approved
604 Employee Pension & Benefits	\$ 24,000	\$ (24,000)	\$ -	Remove as no current benefit to customers; imprudent expense.
610 Purchased Water	\$ -	\$ -	\$ -	
611 Telephone/Communications	\$ 1,423	\$ (420)	\$ 1,003	DR 14--Double entry per Company
615 Purchased Power	\$ 197	\$ -	\$ 197	
616 Fuel for Power Production	\$ -	\$ -	\$ -	
617 Other Utilities	\$ -	\$ -	\$ -	
618 Chemical / Treatment Expense	\$ -	\$ -	\$ -	
619 Office Supplies	\$ 767	\$ -	\$ 767	
619.1 Postage	\$ 462	\$ -	\$ 462	
620 O&M Materials/Supplies	\$ 6,583	\$ -	\$ 6,583	
621 Repairs to Water Plant	\$ 6,171	\$ -	\$ 6,171	
631 Contract Svcs - Engineering	\$ -	\$ -	\$ -	
632 Contract Svcs - Accounting	\$ 3,279	\$ -	\$ 3,279	
633 Contract Svcs - Legal	\$ 1,782	\$ -	\$ 1,782	
634 Contract Svcs - Management Fees	\$ -	\$ -	\$ -	
635 Contract Svcs - Testing	\$ 1,255	\$ -	\$ 1,255	
636 Contract Svcs - Labor	\$ 814	\$ -	\$ 814	
637 Contract Svcs - Billing/Collection	\$ 9,838	\$ -	\$ 9,838	
638 Contract Svcs - Meter Reading	\$ -	\$ -	\$ -	
639 Contract Svcs - Other	\$ 49,959	\$ (25,869)	\$ 24,090	DR 42--Removed 3 year avg. (2014-2016) of Capitalized Labor
641 Rental of Building/Real Property	\$ 22,000	\$ (15,000)	\$ 7,000	Removed addnt! AI costs pending review of newly filed AI contracts by Staff.
642 Rental of Equipment	\$ -	\$ -	\$ -	
643 Small Tools	\$ -	\$ -	\$ -	
648 Computer/Electronic Expenses	\$ 107	\$ -	\$ 107	
650 Transportation	\$ 2,652	\$ (873)	\$ 1,779	Adj Buick to mileage using credit card receipts for gas; cost out of porportion to use.
656 Vehicle Insurance	\$ 1,322	\$ (1,322)	\$ -	DR 28, 29, 69, 70, 71--Buick reimbursed as mileage, rmv insurance, not in UW 145
657 General Liability Insurance	\$ 3,066	\$ -	\$ 3,066	
658 Workers' Comp Insurance	\$ -	\$ -	\$ -	
659 Insurance - Other	\$ -	\$ -	\$ -	
666 Amortz. of Rate Case	\$ 6,333	\$ -	\$ 6,333	
667 Gross Revenue Fee (PUC)	\$ 519	\$ 1	\$ 520	
670 Bad Debt Expense	\$ -	\$ -	\$ -	
671 Cross Connection Control Program	\$ 75	\$ -	\$ 75	
673 Training and Certification	\$ -	\$ -	\$ -	
674 Consumer Confidence Report	\$ 157	\$ -	\$ 157	
675 Miscellaneous Expense	\$ 2,544	\$ (190)	\$ 2,354	Removed finance charges on bills.
OE1 Other Expense 1	\$ -	\$ -	\$ -	
OE2 Other Expense 2	\$ -	\$ -	\$ -	
OE3 Other Expense 3	\$ -	\$ -	\$ -	
OE4 Other Expense 4	\$ -	\$ -	\$ -	
OE5 Other Expense 5	\$ -	\$ -	\$ -	
<b>TOTAL OPERATING EXPENSE</b>	<b>\$ 202,087</b>	<b>\$ (114,855)</b>	<b>\$ 87,232</b>	

**OTHER REVENUE DEDUCTIONS**

403 Depreciation Expense	\$ 23,498	\$ (2,262)	\$ 21,236	Reflects Plant adj; ratemodel re-calculation
406 Amort of Plant Acquisition Adjustment	\$ -	\$ -	\$ -	
407 Amortization Expense	\$ -	\$ -	\$ -	
408.11 Property Tax	\$ 9,412	\$ (1,201)	\$ 8,211	Rmvd Property Tax for property belonging to trustee/Lesli Ann Bekins pending AI rvw
408.12 Payroll Tax	\$ 5,280	\$ -	\$ 5,280	
408.13 Other	\$ -	\$ -	\$ -	
409.10 Federal Income Tax	\$ -	\$ 7,086	\$ 7,086	
409.11 Oregon Income Tax	\$ -	\$ 2,384	\$ 2,384	
409.13 Extraordinary Items Income Tax	\$ -	\$ -	\$ -	
<b>TOTAL REVENUE DEDUCTIONS</b>	<b>\$ 240,277</b>	<b>\$ (108,847)</b>	<b>\$ 131,430</b>	
<b>Net Operating Income</b>	<b>\$ 66,013</b>	<b>\$ (24,056)</b>	<b>\$ 41,957</b>	

**UTILITY RATE BASE**

101 Utility Plant in Service	\$ 1,051,997	\$ 1,019,060	\$ 2,071,057	Rmvd meter allwnc, dble Tyrolean Meadows entry/CWIP/corrected Tank expense
105 Construction Work in Progress	\$ -	\$ -	\$ -	
108 - Accumulated Depreciation of Plant	\$ 520,939	\$ 193,622	\$ 714,561	Automatic Rate Model adj. per other Plant adjustments.
271 - Contributions in Aid of Construction	\$ -	\$ 1,077,641	\$ 1,077,641	
272 + Accumulated Amortization of CIAC	\$ -	\$ 195,867	\$ 195,867	
281 - Accumulated Deferred Income Tax	\$ -	\$ -	\$ -	
- Excess Capacity	\$ -	\$ -	\$ -	
<b>= NET RATE BASE INVESTMENT</b>	<b>\$ 531,058</b>	<b>\$ (56,336)</b>	<b>\$ 474,722</b>	
Plus: (working capital)				
151 Materials and Supplies Inventory	\$ 10,195	\$ -	\$ 10,195	
Working Cash (Total Op Exp /12)	\$ 16,841	\$ (9,572)	\$ 7,269	
<b>TOTAL RATE BASE</b>	<b>\$ 558,094</b>	<b>\$ (65,908)</b>	<b>\$ 492,186</b>	
<b>Rate of Return</b>	<b>11.83%</b>	<b>0.00%</b>	<b>8.52%</b>	

## Rate Spread

<b>TOTAL REVENUE REQUIREMENT</b>	173,386	
<b>REVENUE FROM WATER SALES</b>	165,348	<i>Allocation Factor</i>
<b>REVENUE FROM WATER SALES</b>		
Residential and Commercial Flat Rate	87462	52.90%
Residential and Commercial Metered Rate	77887	47.10%
<b>REVENUE FROM SOURCES OTHER THAN WATER SALES</b>		
Miscellaneous Service Charges	4,562	
Fire Protection Sales (Hydrant Mtc)	1,490	
Commercial Water Haulers	1,986	
<b>TOTAL REVENUE (Must equal Total Revenue Requirement)</b>	<b>173,386</b>	



Line Type & Size	Test Year Customers	Test Year Consumption (cf)	New Customers	Estimated New Consumption	Total Projected Customers	Total Projected Consumption	BASE RATES			COMMODITY RATES			AVERAGE BILLS			REVENUE PROOF (Staff Checker)		
							Current Rate	Staff Proposed Rate	Difference %	Current Rate	Staff Proposed Rate	Difference (%)	Current Rate	Staff Proposed Rate	Difference (%)	Base Rate	Commodity Rate	Total
<b>Water -METERED-- Residential/Commercial</b>																		
5/8" or 3/4"	73	453,414	0	0	73	453414	\$15.86	\$17.28	8.92%	\$1.12	\$ 0.93	-16.80%	\$21.66	\$ 22.10	2.04%	\$15,133.08	\$4,224.96	\$19,358.04
1"	16	219,267	0	0	16	219267	\$19.82	\$23.03	16.21%	\$1.12	\$ 0.93	-16.80%	\$32.61	\$ 33.68	3.26%	\$4,422.45	\$2,043.15	\$6,465.61
1 1/2"	31	679,979			31	679979	\$24.10	\$34.55	43.36%	\$1.12	\$ 0.93	-16.80%	\$44.57	\$ 51.58	15.73%	\$12,852.75	\$6,336.12	\$19,188.87
2"	20	839,453			20	839453	\$29.81	\$57.58	93.17%	\$1.12	\$ 0.93	-16.80%	\$68.98	\$ 90.18	30.72%	\$13,820.17	\$7,822.11	\$21,642.28
3"	3	0			3	0	\$33.93	\$80.62	137.60%	\$1.12	\$ -	-100.00%	\$33.93	\$ 80.62	137.60%	\$2,902.23		\$2,902.23
4"	3	314,733			3	314733	\$34.88	\$92.13	164.15%	\$1.12	\$ 0.93	-16.80%	\$132.80	\$ 173.60	30.72%	\$3,316.84	\$2,932.72	\$6,249.56
6"	1	739	0	0	1	739	\$40.43	\$172.75	327.29%	\$1.12	\$ 0.93	-16.80%	\$41.12	\$ 173.33	321.52%	\$2,073.02	\$6.89	\$2,079.91
<b>TOTAL</b>	<b>147</b>	<b>2,507,585</b>	<b>0</b>	<b>0</b>	<b>147</b>	<b>2507585</b>										<b>\$54,520.55</b>	<b>\$23,365.95</b>	<b>\$77,886.50</b>
<b>Water - FLAT-- Residential/Commercial</b>																		
5/8" or 3/4"	256	flat		#VALUE!	256		\$20.75	\$24.68	18.93%	N/A	N/A	N/A	\$20.75	\$ 24.68	18.93%	\$75,813.48	\$0.00	\$75,813.48
1"	2	flat		#VALUE!	2		\$24.17	\$41.13	70.18%	N/A	N/A	N/A	\$24.17	\$ 41.13	70.18%	\$987.15	\$0.00	\$987.15
2"	9	flat			9		\$34.53	\$98.72	185.88%	N/A	N/A	N/A	\$34.53	\$ 98.72	185.88%	\$10,661.27	\$0.00	\$10,661.27
<b>TOTAL</b>	<b>267</b>	<b>flat</b>	<b>0</b>	<b>#VALUE!</b>	<b>267</b>											<b>\$10,661.27</b>	<b>\$0.00</b>	<b>\$87,461.90</b>
<b>Water -Water Haulers</b>																		
\$1.12 each/Per 100 units	2136	213,600		0		2,136	N/A	N/A	N/A	\$1.12	\$0.93	-16.98%	\$ 199.36	\$165.50	-16.98%	\$ -	\$1,986.00	\$1,986
<b>TOTAL</b>	<b>\$ 2,392.32</b>	<b>2136</b>	<b>0</b>	<b>0</b>														
<b>Fire Hydrant Maintenance</b>																		
Per Customer \$ .30	414			0	414	0	\$0.00	\$0.00		\$0.00	\$ 124.17		\$ -	0.3	100	1490.4		\$1,490
<b>TOTAL</b>	<b>414</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>414</b>	<b>0</b>												
<b>Revenue from Water Sales</b>															\$165,348.40			
<b>Misc. Revenue</b>															\$4,562			
<b>Cross Connection</b>															0			
<b>Other - Construction</b>															0			
<b>TOTAL WATER</b>	<b>414</b>	<b>0</b>	<b>#VALUE!</b>	<b>414</b>	<b>2507585</b>		<b>TOTAL WATER REVENUE</b>									<b>\$68,658.22</b>	<b>\$173,387</b>	

## Rate Design

### Residential and Commercial Metered Service

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#### Base Rates

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Meter Size	Customers	Factors	Customer Equivalency	% of Total
5/8" and/or 3/4"	73	1.5	110	27.76%
1"	16	2.0	32	8.11%
1 1/2"	31	3.0	93	23.57%
2"	20	5.0	100	25.35%
3"	3	7.0	21	5.32%
4"	3	8.0	24	6.08%
6"	1	15.0	15	3.80%
TOTAL	147		395	100.00%

#### Commodity Rate

---

Annual Consumption	2,507,585	cubic feet
Unit of Measurement	100	cubic feet
Annual Units of Consumption	25,076	Units

Commodity Rate: **\$ 0.93181** per unit

Revenue Allocation: **77,887**

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Allocated to Base Rates: **70.00%**  
Allocated to Commodity Rates: **30.00%**

Revenue Allocation: **54,521**

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Revenue Allocation	Base Rate
\$ 15,133	\$ <b>17.28</b>
\$ 4,422	\$ <b>23.03</b>
\$ 12,853	\$ <b>34.55</b>
\$ 13,820	\$ <b>57.58</b>
\$ 2,902	\$ <b>80.62</b>
\$ 3,317	\$ <b>92.13</b>
\$ 2,073	\$ <b>172.75</b>
\$ 54,521	

Factors UW 145	AWWA Factors
1.00	1
1.05	2.5
1.10	5
1.20	8
	15
1.80	25
2.25	50

Revenue Allocation: **23,366**

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Factors used in UW 145					
	Meter/Line	Present	Factors	Proposed	AWWA
	Size	rates	Used	Rate	Factors
Residential Metered					
17	5/8" / 3/4"	18	1	14.97955	1
0	1"	18	1.05	15.72853	2.5
0	1.5"	18	1.1	16.47751	5
4	2"	18	1.2	17.97546	8
0	4"	18	1.8	26.96319	25
0	6"	18	2.25	33.70399	50
Commercial Metered					
181	3/4" or 5/8"	24	1	14.97955	1
6	1"	24	1.05	15.72853	2.5
0	1.5"	24	1.1	16.47751	5
19	2"	24	1.2	17.97546	8
1	4"	24	1.8	26.96319	25
0	6"	24	2.25	33.70399	50

## Rate Design

### Residential and Commercial Flat Rate Service

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#### Base Rates

---

Line Size	Customers	Factors	Customer Equivalency	% of Total
5/8" and/or 3/4	256	1.5	384	86.68%
1"	2	2.5	5	1.13%
1 1/2"		5.0	-	0.00%
2"	9	6.0	54	12.19%
TOTAL	267	18.0	443	100.00%

#### Commodity Rate

---

Annual Consumption		Cubic Feet
Unit of Measurement	100	Cubic Feet
Annual Units of Consumption	-	Units
Commodity Rate:	\$ -	per unit

Revenue Allocation: **87,462**

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Allocated to Base Rates: **100.00%**  
Allocated to Commodity Rates: **0.00%**

Revenue Allocation: **87,462**

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Revenue Allocation	Base Rate
\$ 75,813	\$ <b>24.68</b>
\$ 987	\$ <b>41.13</b>
\$ -	\$ <b>82.26</b>
\$ 10,661	\$ <b>98.72</b>
\$ 87,462	

Factors UW 145	AWWA Factors
1.00	1
1.05	2.5
1.10	5
1.20	8

Revenue Allocation: **-**

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# Rate Design

## Water Haulers

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### Commodity Rate

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Annual Consumption	213,600	cubic feet
Unit of Measurement	100	cubic feet
Annual Units of Consumption	2,136	Units/cfs
Commodity Rate:	\$ 0.92978	per unit

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Revenue Allocation: **1,986**

Allocated to Base Rates: **0.00%**

Allocated to Commodity Rates: **100.00%**

Revenue Allocation: **1,986**

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# Rate Design

## Fire Hydrants

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### Base Rates

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Meter Size	Customers	Factors	Customer Equivalency	% of Total
ALL	414	1.0	414	100.00%
TOTAL	414		414	100.00%

### Commodity Rate

---

Annual Consumption 

	Cubic Feet
--	------------

  
Unit of Measurement 

100	Cubic Feet
-----	------------

  
Annual Units of Consumption - Units

Commodity Rate: 

\$ -	per unit
------	----------

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Revenue Allocation: **1,490**

Allocated to Base Rates: **100.00%**  
Allocated to Commodity Rates: **0.00%**

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Revenue Allocation: **1,490**

Revenue Allocation	Base Rate
\$ 1,490	\$ <b>0.30</b>
\$ 1,490	

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Revenue Allocation: **-**

Invested Plant											
Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	2016	Accum. Deprec. Ending 2016	Remaining Plant
301	Organization	Various	-	-	-	-	-	Various	-	-	-
302	Franchises	Various	-	-	-	-	-	Various	-	-	-
303	Land and Land Rights	Various	-	-	-	-	-	Various	-	-	-
304	Structures and Improvements	Various	15,038	-	15,038	35	430	Various	418	6,311	8,727
	Water Supply Structures	Jan 1961	293		293	35	8	Dec 1995	-	293	-
	Other Structures	Jan 1961	127		127	35	4	Dec 1995	-	127	-
	UW 145--FENCE	Jul 2000	5,675		5,675	35	162	Jun 2035	162	2,675	3,000
	UW 145--FENCING	Jun 2004	8,943		8,943	35	256	May 2039	256	3,215	5,728
305	Collecting and Impounding Reservoirs	Various	-	-	-	50	-	Various	-	-	-
306	Lake, River and Other Intakes	Various	-	-	-	35	-	Various	-	-	-
307	Wells and Springs	Various	-	-	-	25	-	Various	-	-	-
308	Infiltration Galleries and Tunnels	Various	-	-	-	25	-	Various	-	-	-
309	Supply Main	Various	330,691	-	330,691	50	6,614	Various	6,215	232,740	97,951
	Water Mains & Canals	Jan 1961	11,965		11,965	50	239	Dec 2010	-	11,965	-
	Water Mains & Canals	Jan 1961	509		509	50	10	Dec 2010	-	509	-
	Water Mains & Canals	Jan 1962	2,629		2,629	50	53	Jan 2012	-	2,629	-
	Water Mains & Canals	Jan 1963	2,466		2,466	50	49	Dec 2012	-	2,466	-
	Water Mains & Canals	Jan 1964	169		169	50	3	Dec 2013	-	169	-
	Water Mains & Canals	Jan 1965	323		323	50	6	Dec 2014	-	323	-
	Water Mains & Canals	Jan 1966	999		999	50	20	Dec 2015	-	999	-
	Water Mains & Canals	Jan 1967	735		735	50	15	Dec 2016	15	735	-
	Water Mains & Canals	Jan 1968	326		326	50	7	Dec 2017	7	319	7
	Water Mains & Canals	Jan 1969	6,275		6,275	50	126	Dec 2018	126	6,024	251
	Water Mains & Canals	Jan 1970	89		89	50	2	Dec 2019	2	84	5
	Water Mains & Canals	Jan 1971	10,681		10,681	50	214	Dec 2020	214	9,827	854
	Water Mains & Canals	Jan 1972	56		56	50	1	Dec 2021	1	50	6
	Water Mains & Canals	Jan 1975	3,305		3,305	50	66	Dec 2024	66	2,776	529
	Water Mains & Canals	Jan 1976	1,155		1,155	50	23	Dec 2025	23	947	208
	Water Mains & Canals	Jan 1978	27,405		27,405	50	548	Dec 2027	548	21,376	6,029
	Line Extension	Oct 1980	28,142		28,142	50	563	Oct 2030	563	20,403	7,739
	Line Extension	Dec 1980	24,071		24,071	50	481	Dec 2030	481	17,371	6,700
	Line Extension	Jan 1981	3,227		3,227	50	65	Jan 2031	65	2,323	904
	Line Extension	Jan 1982	4,931		4,931	50	99	Jan 2032	99	3,452	1,479
	Line Extension	Apr 1982	770		770	50	15	Apr 2032	15	535	235
	UW 145--Existing Line to Spring Source (Transmission line)	Jan 1981	62,965		62,965	50	1,259	Dec 2030	1,259	45,335	17,630
	UW 145--Existing Line to Spring Source (Transmission line)	Jun 1981	23,475		23,475	50	470	May 2031	470	16,706	6,769
	UW 145--Existing Line to Spring Source (Transmission line)	Jun 1981	21,467		21,467	50	429	May 2031	429	15,277	6,190
	UW 145--Existing Line to Spring Source (Transmission line)	Oct 1981	3,446		3,446	50	69	Sep 2031	69	2,429	1,017
	UW 145--Existing Line to Spring Source (Transmission line)	Jan 1983	1,006		1,006	50	20	Dec 2032	20	684	322
	UW 145--Existing Line to Spring Source (Transmission line)	Sep 1983	12,979		12,979	50	260	Aug 2033	260	8,653	4,326
	UW 145--Existing Line to Spring Source (Transmission line)	Sep 1984	6,220		6,220	50	124	Aug 2034	124	4,022	2,198
	UW 145--Existing Line to Spring Source (Transmission line)	Sep 1985	4,954		4,954	50	99	Aug 2035	99	3,105	1,849
	UW 145--Existing Line to Spring Source (Transmission line)	Jun 1990	17,183		17,183	50	344	May 2040	344	9,136	8,047
	UW 145--Water Mains and Pipe	Jun 1991	26,030		26,030	50	521	May 2041	521	13,319	12,711
	UW 145--Water Mains and Pipe	Jul 1991	1,268		1,268	50	25	Jun 2041	25	647	621
	UW 145--Water Mains and Pipe	Jun 1992	4,689		4,689	50	94	May 2042	94	2,305	2,384
	UW 145--Water Mains and Pipe	Jun 1993	1,124		1,124	50	22	May 2043	22	530	594
	UW 145--Water Mains and Pipe	Jun 1993	1,471		1,471	50	29	May 2043	29	694	777
	UW 145--Water Mains and Pipe	Jun 1994	2,586		2,586	50	52	May 2044	52	1,168	1,418
	UW 145--Water Mains and Pipe	Jun 1994	1,737		1,737	50	35	May 2044	35	785	952
	UW 145--Water Mains and Pipe	Jun 1995	1,951		1,951	50	39	May 2045	39	842	1,109
	UW 145--Water Mains and Pipe	Jun 1996	4,393		4,393	50	88	May 2046	88	1,808	2,585
	UW 145--Grand Lodge (Ferguson Supply)	Aug 2016	1,519		1,519	50	30	Jul 2066	13	13	1,506
310	Power Generation Equipment	Various	-	-	-	30	-	Various	-	-	-
311	Pumping Equipment	Various	-	-	-	20	-	Various	-	-	-
320	Water Treatment Equipment	Various	582	-	582	20	29	Various	-	582	-
	Purification System	Jan 1961	582		582	20	29	Dec 1980	-	582	-
					-	20	-		-	-	-
330	Distribution Reservoir and Standpipes	Various	367,164	-	367,164	50	7,343	Various	7,340	128,388	238,776
	Reservoir and Standpipes	Jan 1961	173		173	50	3	Dec 2010	-	173	-
	Reservoir and Standpipes	Jan 1971	1,072		1,072	50	21	Dec 2020	21	986	86
	Engineering Cost-Wood Tank-Pre SBA	Feb 1980	919		919	50	18	Feb 2030	18	679	240
	Engineering Cost-Wood Tank-Pre SBA	Mar 1980	333		333	50	7	Mar 2030	7	245	88
	Engineering Cost-Wood Tank-Pre SBA	May 1980	671		671	50	13	May 2030	13	492	179
	UW 145--100,000 Gal Wood Tank(adjstd amt in UW 174 per DR 37)	Jun 1980	59,249		59,249	50	1,185	May 2030	1,185	43,351	15,898
	Reservoir and Standpipes	Oct 1980	12,779		12,779	50	256	Oct 2030	256	9,265	3,514
	Tank	Sep 1981	1,510		1,510	50	30	Sep 2031	30	1,067	443
	250,000 Gal Water Tank	Aug 2004	278,926		278,926	50	5,579	Jul 2054	5,579	69,267	209,659
	True-Up of 250,000 Gal Water Tank	Aug 2004	11,532		11,532	50	231	Aug 2054	231	2,864	8,668
					-	50	-		-	-	-
331	Transmission and Distribution Mains	Various	116,230	-	116,230	50	2,325	Various	2,311	44,814	71,416
	Lines	Jan 1981	4,027		4,027	50	81	Jan 2031	81	2,899	1,128
	Lines	Jul 1981	4,208		4,208	50	84	Jul 2031	84	2,988	1,220
	Lines	Aug 1981	6,560		6,560	50	131	Aug 2031	131	4,647	1,913
	Lines	Jan 1982	4,931		4,931	50	99	Jan 2032	99	3,452	1,479
	UW 145--Water Mains	Jun 1995	25,211		25,211	50	504	May 2045	504	10,883	14,328
	UW 145--Water Mains	Jun 1996	21,149		21,149	50	423	May 2046	423	8,706	12,443
	UW 145--Water Mains	Jun 1998	573		573	50	11	May 2048	11	213	360
	UW 145--Water Mains	Jun 1999	21,163		21,163	50	423	May 2049	423	7,442	13,721
	UW 145--Water Mains	Jun 2002	1,935		1,935	50	39	May 2052	39	564	1,371
	UW 145-ADD: Tyrolean Mdws Paid by Co for Developer	Sep 2007	14,419		14,419	50	288	Aug 2057	288	2,692	11,727
	Wyeast 2015 taps	Jul 2015	10,042		10,042	50	201	Jun 2065	201	301	9,741
	Wyeast 2016	May 2016	1,107		1,107	50	22	May 2066	15	15	1,092
	Wyeast 2016	May 2016	905		905	50	18	May 2066	12	12	893
333	Services	Various	61,105	-	61,105	30	2,037	Various	1,763	29,465	31,640
	Services	Jan 1961	809		809	30	27	Dec 1990	-	809	-
	Services	Jan 1962	265		265	30	9	Dec 1991	-	265	-
	Services	Jan 1963	105		105	30	4	Dec 1992	-	105	-
	Services	Jan 1965	200		200	30	7	Dec 1994	-	200	-
	Services	Jan 1966	118		118	30	4	Dec 1995	-	118	-

Services	Jan 1968	49		49	30	2	Dec 1997	-	49	-
Services	Jan 1969	124		124	30	4	Dec 1998	-	124	-
Services	Jan 1970	390		390	30	13	Dec 1999	-	390	-
Services	Jan 1971	356		356	30	12	Dec 2000	-	356	-
Services	Jan 1972	105		105	30	4	Dec 2001	-	105	-
Services	Jan 1973	79		79	30	3	Dec 2002	-	79	-
Services	Jan 1974	48		48	30	2	Dec 2003	-	48	-
Services	Jan 1975	201		201	30	7	Dec 2004	-	201	-
Services	Jan 1976	592		592	30	20	Dec 2005	-	592	-
Services	Jan 1977	931		931	30	31	Dec 2006	-	931	-
Services	Jan 1978	2,312		2,312	30	77	Dec 2007	-	2,312	-
<b>UW 145--Services</b>	Jun 1998	12,184		12,184	30	406	May 2028	406	7,547	4,637
UW 145--Services	Jun 1999	3,945		3,945	30	132	May 2029	132	2,312	1,633
UW 145--Services	Jun 2000	3,046		3,046	30	102	May 2030	102	1,684	1,362
UW 145--Services	Jun 2002	6,702		6,702	30	223	May 2032	223	3,258	3,444
UW 145--Cap Impr, hot tap 12" (Little Trail)	Apr 2007	2,295		2,295	30	77	Apr 2037	77	746	1,549
UW 145--Keil & Payne	May 2007	3,190		3,190	30	106	May 2037	106	1,028	2,162
<b>UW 145--Montg Leige 8" line ext down montg to new hydrant</b>	May 2007	18,910		18,910	30	630	May 2037	630	6,093	12,817
Parry	May 2015	701		701	30	23	Apr 2045	23	39	662
Bridge	Oct 2015	1,022		1,022	30	34	Sep 2045	34	43	979
Scroggins	Oct 2015	150		150	30	5	Sep 2045	5	6	144
Rice	Jul 2016	90		90	30	3	Jun 2046	2	2	89
Law, Fritch	Aug 2016	675		675	30	23	Jul 2046	9	9	666
<b>Fritch, Slavin</b>	Sep 2016	918		918	30	31	Aug 2046	10	10	908
Parrish	Oct 2016	270		270	30	9	Sep 2046	2	2	268
Soot	Nov 2016	323		323	30	11	Oct 2046	2	2	321

<b>334 Meters and Meter Installations</b>	<b>Various</b>	<b>39,892</b>	<b>-</b>	<b>39,892</b>	<b>20</b>	<b>1,995</b>	<b>Various</b>	<b>1,942</b>	<b>23,122</b>	<b>16,770</b>
Meters	Jun 1999	7,500		7,500	20	375	May 2019	375	6,594	906
Meters	Jun 2000	11,174		11,174	20	559	May 2020	559	9,265	1,909
Meters	Jun 2002	4,125		4,125	20	206	May 2022	206	3,008	1,117
HD Waterworks-Meters	Oct 2008	1,608		1,608	20	80	Oct 2028	80	663	945
OR Earth-replace 2 meters, fence materials	Nov 2008	1,756		1,756	20	88	Nov 2028	88	717	1,039
Meters (Karkanen & Tichie)	Sep 2009	197		197	20	10	Sep 2029	10	72	125
Meter box & lid w?CIRDR	Oct 2009	964		964	20	48	Oct 2029	48	349	615
Meter install Tichie (Zuber, Mclain)(225+270)	Nov 2009	495		495	20	25	Nov 2029	25	177	318
Collins Lake Resort Meter	Dec 2009	338		338	20	17	Dec 2029	17	120	218
OR Earth-replace Meter Collins Lake Resort	Dec 2009	1,154		1,154	20	58	Dec 2029	58	409	745
Meters 2011 (mills4-berke & parrish)	Aug 2011	4,126		4,126	20	206	Jul 2031	206	1,117	3,009
Meters 2012 (Nogaire, Berman, Gaither, Mills-2)	Oct 2012	753		753	20	38	Sep 2032	38	160	593
Meters 2014 (Allen)	Jan 2014	1,310		1,310	20	66	Dec 2033	66	197	1,114
Meters 2014 (Berman & Scroggins)	Oct 2014	648		648	20	32	Sep 2034	32	73	575
Meters 2015 (Bridge)	Jan 2015	1,321		1,321	20	66	Dec 2034	66	132	1,189
Hydrant Meter 2016 (2")	Apr 2016	1,546		1,546	20	77	Mar 2036	58	58	1,488
Parrish	Sep 2016	406		406	20	20	Aug 2036	7	7	399
Parrish, Soot	Dec 2016	405		405	20	20	Nov 2036	2	2	403
Transportation of Equipment	May 2016	66		66	20	3	May 2036	2	2	64

<b>335 Hydrants</b>	<b>Various</b>	<b>13,559</b>	<b>-</b>	<b>13,559</b>	<b>40</b>	<b>339</b>	<b>Various</b>	<b>268</b>	<b>7,575</b>	<b>5,984</b>
Hydrants	Jan 1961	664		664	40	17	Dec 2000	-	664	-
Hydrants	Jan 1962	24		24	40	1	Dec 2001	-	24	-
Hydrants	Jan 1963	44		44	40	1	Dec 2002	-	44	-
Hydrants	Jan 1964	24		24	40	1	Dec 2003	-	24	-
Hydrants	Jan 1971	403		403	40	10	Dec 2010	-	403	-
Hydrants	Jan 1973	40		40	40	1	Dec 2012	-	40	-
Hydrants	Jan 1974	26		26	40	1	Dec 2013	-	26	-
Hydrants	Jan 1975	64		64	40	2	Dec 2014	-	64	-
Hydrants	Jan 1976	75		75	40	2	Dec 2015	-	75	-
Hydrants	Jan 1978	234		234	40	6	Dec 2017	6	228	6
Hydrants	Jan 1980	640		640	40	16	Dec 2019	16	592	48
Hydrants	Sep 1981	2,938		2,938	40	73	Sep 2021	73	2,595	343
<b>UW 145--Hydrants</b>	Jun 1995	1,716		1,716	40	43	May 2035	43	926	790
<b>UW 145--Hydrants</b>	Jun 1995	158		158	40	4	May 2035	4	85	73
<b>UW 145--Hydrants</b>	Jun 1999	4,000		4,000	40	100	May 2039	100	1,758	2,242
Hydrants	Aug 2016	495		495	40	12	Jul 2056	5	5	490
Hydrants	Aug 2016	2,014		2,014	40	50	Jul 2056	21	21	1,993

<b>336 Cross Connection Control</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15</b>	<b>-</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>339 Other Plant</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>30</b>	<b>-</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>340 Office Furniture and Equipment</b>	<b>Various</b>	<b>2,850</b>	<b>-</b>	<b>2,850</b>	<b>20</b>	<b>143</b>	<b>Various</b>	<b>27</b>	<b>2,570</b>	<b>280</b>
Desk	Jan 1963	35		35	20	2	Dec 1982	-	35	-
<b>UW 145--Misc.</b>	Jan 1983	1,006		1,006	20	50	Dec 2002	-	1,006	-
<b>UW 145--Fax</b>	Aug 1989	795		795	20	40	Jul 2009	-	795	-
<b>UW 145--Printer</b>	Jun 1991	477		477	20	24	Jun 2011	-	477	-
<b>UW 145--Copier</b>	Jun 2007	537		537	20	27	May 2027	27	257	280

<b>341 Transportation Equipment</b>	<b>Various</b>	<b>12,021</b>	<b>-</b>	<b>12,021</b>	<b>7</b>	<b>1,676</b>	<b>Various</b>	<b>-</b>	<b>12,021</b>	<b>-</b>
Snow Kat	Jan 1961	450		450	20	23	Dec 1980	-	450	-
<b>UW 145--Buick-auto</b>	Jan 2005	5,000		5,000	7	714	Dec 2011	-	5,000	-
Truck	Jan 1963	2,571		2,571	7	367	Dec 1969	-	2,571	-
<b>UW 145--Snow Cat</b>	Jun 1977	4,000		4,000	7	571	May 1984	-	4,000	-

<b>343 Tools, Shop, and Garage Equipment</b>	<b>Various</b>	<b>7,347</b>	<b>-</b>	<b>7,347</b>	<b>15</b>	<b>490</b>	<b>Various</b>	<b>361</b>	<b>5,893</b>	<b>1,454</b>
<b>UW 145--Pipe Detector</b>	Jun 2000	500		500	15	33	May 2015	-	500	-
<b>UW 145--Camcorder</b>	Jun 2000	1,434		1,434	15	96	May 2015	-	1,434	-
<b>UW 145--Tools</b>	Jun 2002	1,936		1,936	15	129	May 2017	129	1,882	54
<b>UW 145--Tools</b>	Jun 2006	969		969	15	65	May 2021	65	684	285
<b>UW 145--Tool/Meter used in flushing hydrants</b>	Sep 2008	2,508		2,508	15	167	Sep 2023	167	1,393	1,115

<b>344 Laboratory Equipment</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15</b>	<b>-</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>345 Power Operated Equipment</b>	<b>Various</b>	<b>174</b>	<b>-</b>	<b>174</b>	<b>10</b>	<b>17</b>	<b>Various</b>	<b>-</b>	<b>174</b>	<b>-</b>
Thawer	Jan 1973	174		174	10	17	Dec 1982	-	174	-
					10	-		-	-	-
					10	-		-	-	-
					10	-		-	-	-

<b>346 Communication Equipment</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>10</b>	<b>-</b>	<b>Various</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>347 Electronic/Computer Equipment</b>	<b>Various</b>	<b>1,246</b>	<b>-</b>	<b>1,246</b>	<b>5</b>	<b>249</b>	<b>Various</b>	<b>-</b>	<b>1,246</b>	<b>-</b>
Laptop Computer 1246.00 in 2010	Sep 2010	1,246		1,246	5	249	Aug 2015	-	1,246	-
					5	-		-	-	-
					5	-		-	-	-
					5	-		-	-	-

348	<b>Miscellaneous Equipment</b>	<b>Various</b>	<b>25,517</b>	<b>-</b>	<b>25,517</b>	<b>10</b>	<b>2,552</b>	<b>Various</b>	<b>591</b>	<b>23,792</b>	<b>1,725</b>
	General Equipment	Jan 1961	207		207	10	21	Dec 1970	-	207	-
	General Equipment	Jan 1962	9,588		9,588	10	959	Dec 1971	-	9,588	-
	General Equipment	Jan 1963	282		282	10	28	Dec 1972	-	282	-
	General Equipment	Jan 1971	522		522	10	52	Dec 1980	-	522	-
	Miscellaneous	Jan 1977	930		930	10	93	Dec 1986	-	930	-
	General Equipment	Jan 1978	804		804	10	80	Dec 1987	-	804	-
	Miscellaneous Equipment	Jun 2000	7,271		7,271	10	727	May 2010	-	7,271	-
	Mapping Project	Dec 2009	5,913		5,913	10	591	Dec 2019	591	4,188	1,725
					-	10	-		-	-	-

<b>TOTALS</b>	<b>Various</b>	<b>993,416</b>	<b>-</b>	<b>993,416</b>	<b>Various</b>	<b>26,237</b>	<b>Various</b>	<b>21,236</b>	<b>518,694</b>	<b>474,722</b>
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Original Plant In Service Cost	993,416
Less: Excess Capacity	-
"Used & Useful" Plant	993,416
Less Accum Depreciation	518,694
<b>NET PLANT</b>	<b>474,722</b>

<b>Depreciation Expense</b>	<b>21,236</b>
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Company Name: Gov't Camp  
Docket No. UW 174  
Test Year: 2016  
**CIAC Plant**

Acct

No.

Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	Before 1985	2016	Accum. Deprec. Ending 2016	Remaining Plant
Organization	Various	-	-	-	-	-	Various	-	-	-	-
Franchises	Various	-	-	-	-	-	Various	-	-	-	-
Land and Land Rights	Various	-	-	-	-	-	Various	-	-	-	-
Structures and Improvements	Various	-	-	-	35	-	Various	-	-	-	-
Collecting and Impounding Reservoirs	Various	-	-	-	50	-	Various	-	-	-	-
Lake, River and Other Intakes	Various	-	-	-	35	-	Various	-	-	-	-
Wells and Springs	Various	-	-	-	25	-	Various	-	-	-	-
Infiltration Galleries and Tunnels	Various	-	-	-	25	-	Various	-	-	-	-
Supply Main	Various	-	-	-	50	-	Various	-	-	-	-
Power Generation Equipment	Various	-	-	-	30	-	Various	-	-	-	-
Pumping Equipment	Various	-	-	-	20	-	Various	-	-	-	-
Water Treatment Equipment	Various	-	-	-	20	-	Various	-	-	-	-
Distribution Reservoir and Standpipes	Various	-	-	-	50	-	Various	-	-	-	-
<b>Transmission and Distribution Mains</b>	Various	<b>1,077,641</b>	-	<b>1,077,641</b>	<b>50</b>	<b>21,553</b>	Various	-	<b>21,553</b>	<b>195,867</b>	<b>881,774</b>
12" line Lige to Gov Camp Loop	Nov 2002	335,071	-	335,071	50	6,701	Oct 2052	-	6,701	94,937	240,134
12" line Multorpor to Skibowl	Oct 2006	198,285	-	198,285	50	3,966	Sep 2056	-	3,966	40,648	157,637
8" line WyEast to Blossom	Oct 2006	150,719	-	150,719	50	3,014	Sep 2056	-	3,014	30,897	119,822
12" Bore Line under Hwy 26 to Tyrolean	Sep 2007	85,000	-	85,000	50	1,700	Aug 2057	-	1,700	15,867	69,133
Tyrolean Overruns - TIF Portion	Jan 2008	14,419	-	14,419	50	288	Dec 2057	-	288	2,595	11,824
ODOT Project 4" line replacement	Jul 2013	50,000	-	50,000	50	1,000	Jun 2063	-	1,000	3,500	46,500
Tyrolean Overruns - Berman Portion	Nov 2013	14,419	-	14,419	50	288	Nov 2063	-	288	913	13,506
12" line from Tyrolean to SkiBowl West	Aug 2015	229,728	-	229,728	50	4,595	Jul 2065	-	4,595	6,509	223,219
				-	58	-		-	-	-	-
				-	50	-		-	-	-	-
				-	50	-		-	-	-	-
				-	50	-		-	-	-	-

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Services	Various	-	-	-	30	-	Various	-	-	-	-
Meters and Meter Installations	Various	-	-	-	20	-	Various	-	-	-	-
Hydrants	Various	-	-	-	40	-	Various	-	-	-	-
Cross Connection Control	Various	-	-	-	15	-	Various	-	-	-	-
Other Plant	Various	-	-	-	30	-	Various	-	-	-	-
Office Furniture and Equipment	Various	-	-	-	20	-	Various	-	-	-	-
Transportation Equipment	Various	-	-	-	7	-	Various	-	-	-	-
Tools, Shop, and Garage Equipment	Various	-	-	-	15	-	Various	-	-	-	-
Laboratory Equipment	Various	-	-	-	15	-	Various	-	-	-	-
Power Operated Equipment	Various	-	-	-	10	-	Various	-	-	-	-
Communication Equipment	Various	-	-	-	10	-	Various	-	-	-	-
Electronic/Computer Equipment	Various	-	-	-	5	-	Various	-	-	-	-
Miscellaneous Equipment	Various	-	-	-	10	-	Various	-	-	-	-

<b>TOTALS</b>	Various	<b>1,077,641</b>	-	<b>1,077,641</b>	Various	<b>21,553</b>	Various	-	<b>21,553</b>	<b>195,867</b>	<b>881,774</b>
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Original Plant In Service Cost	1,077,641
Less: Excess Capacity	-
"Used & Useful" Plant	1,077,641
Less Accum Amort of CIAC	195,867
<b>NET PLANT</b>	<b>881,774</b>

<b>Depreciation Expense</b>	<b>21,553</b>
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Date	Supplier	Test	Description	Total	
1/13/2016	Citi Cards	115.16	Maintenance	\$115.16	
1/25/2016	US Bank	33.45	Fuel	\$33.45	
2/19/2016	DMV	86.00	Registration	\$86.00	Ck #20
3/11/2016	AAA	51.00	Semi Annual	\$51.00	
3/22/2016	US Bank	43.17	Fuel	\$43.17	
4/11/2016	Cunningham Consulting,	231.12	Mileage	\$231.12	
5/2/2016	Weston Dealership	79.59	Buick	\$79.59	crec
5/10/2016	US Bank	31.73	Fuel	\$31.73	
5/23/2016	US Bank	22.05	Fuel	\$22.05	
5/24/2016	WHO, Ltd	66.13	Mileage	\$0.00	
6/29/2016	Weston Dealership	944.55	Buick Repair	\$944.55	crec
7/5/2016	Cunningham Consulting,	170.32	Mileage	\$170.32	
7/18/2016	WHO, Ltd	132.83	Mileage	\$132.83	
8/1/2016	US Bank	22.13	Maintenance	\$22.13	
8/14/2016	WHO Ltd	89.00	minus over	\$65.59	li
8/18/2016	WHO, Ltd	64.98	Mileage	\$64.98	
8/22/2016	US Bank	80.61	Fuel &	\$80.61	
9/19/2016	WHO, Ltd	64.98	Mileage	\$64.98	
9/23/2016	Cunningham Consulting,	96.12	Mileage	\$96.12	
10/18/2016	Citi Cards	30.70	Maintenance	\$30.70	
10/23/2016	WHO, Ltd	129.50	Mileage	\$129.50	
10/25/2016	Nordstrom Visa	24.87	Maintenance	\$24.87	
11/21/2016	WHO, Ltd	64.98	Mileage	\$64.98	
12/30/2016	Weston Dealership	67.15	Buick Repair	\$67.15	
				\$0.00	
				\$0.00	
<b>TOTAL</b>		<b>\$2,742.12</b>		<b>\$2,652.58</b>	

Check #
1038
1040
1033 Charlomont Hill Acct-written off this
1078
1082
1092
dit cd approval cd 07699P - Ck # 1065
1055
1062
1064 - Moved to Capital Plant
dit cd approval cd 950020 - Ck # 1108
1104
1110 Moved from Repairs
1116
invoice #106 - net mileage expense
1119 - Moved from Repairs
1124
1130
1134
1141
1143 Moved from Repairs
1145
1159 - Moved from Repairs
credit cd approval cd 63576Z

**Use of Buick Based on Mileage**

33.45 US Bank
43.17 US Bank
31.73 US Bank
22.05 US Bank
80.61 US Bank
<b>211.01 Total Gas Receipts</b>
\$ 84.40 gallons used @ 2.50 per gallon
1,350 Mileage based on 16 mpg
<b>\$ 736.00 Government Mileage Reimbursement</b>

231.12 Cunningham Consulting
170.32 Cunningham Consulting
132.83 WHO Ltd
22.13 WHO Ltd
65.59 WHO Ltd
64.98 WHO Ltd
64.98 WHO Ltd
96.12 Cunningham Consulting
129.5 WHO Ltd
64.98 WHO Ltd
<b>1042.55 All contractor mileage</b>



736 mileage
1043 contractor
<b>1779 total</b>

Company	2652
Staff	1779
Difference	873

Government Camp Water Co., Inc.  
Custom Transaction Detail Report  
January through December 2016

Type	Date	Num	Name	Item	Item Description	Account	Split	Qty	Debit	Credit	Staff Check	Difference
Invoice+C901:L90	10/01/2016	12-7182	Fritsch, Oliver 022	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	1.00		47.58		only one bill, no consumption
Invoice	01/01/2016	12-6224	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	10.00		475.80		no consumption
Invoice	04/01/2016	12-6593	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	10.00		475.80		no consumption
Invoice	07/01/2016	12-6960	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	10.00		475.80		no consumption
Invoice	10/01/2016	12-7333	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	10.00		475.80		no consumption
Invoice	10/01/2016	12-7375	Sandler, Scott & Janet 323	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.1 - Residential Metered	141 - Accounts Receivable	1,354.50		15.17		only one month of consumption
Invoice	01/01/2016	12-6265	Sandler, Scott & Janet 323	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	1.00		47.58		only one month of consumption
Invoice	04/01/2016	12-6634	Sandler, Scott & Janet 323	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	1.00		47.58		only one month of consumption
Invoice	07/01/2016	12-7001	Sandler, Scott & Janet 323	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	1.00		47.58		only one month of consumption
Invoice	10/01/2016	12-7375	Sandler, Scott & Janet 323	RM 3/4"	Quarterly base rate	461.1 - Residential Metered	141 - Accounts Receivable	1.00		47.58		only one month of consumption
Invoice	10/01/2016	12-7122	Best Western Mt Hood Inn 006	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.2 - Commercial Metered	141 - Accounts Receivable	219.25		2.46		Best Western billed on one quarter, usage does not appear correct
Invoice	10/01/2016	12-7251	Johnson, Peter 046	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.2 - Commercial Metered	141 - Accounts Receivable	590.25		6.61		only this consumption with 2 base rates
Invoice	07/01/2016	12-6878	Johnson, Peter 046	CM 3/4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	2.00		95.16		only this consumption with 2 base rates
Invoice	10/01/2016	12-7251	Johnson, Peter 046	CM 3/4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	2.00		95.16		only this consumption with 2 base rates
Invoice	10/01/2016	12-7318	Mt Hood Ski Patrol 057	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.2 - Commercial Metered	141 - Accounts Receivable	9,347.50		104.69		only one base rate and consumption, no other meters read when new on 10/1, please explain
Invoice	10/01/2016	12-7318	Mt Hood Ski Patrol 057	CM 1"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		59.46		only one base rate and consumption, no other meters read when new on 10/1, please explain
Invoice	01/01/2016	12-6233	Parmelee, Brandon & Melissa 171	CM 3/4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		47.58		no consumption
Invoice	04/01/2016	12-6601	Parmelee, Brandon & Melissa 171	CM 3/4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		47.58		no consumption
Invoice	07/01/2016	12-6968	Parmelee, Brandon & Melissa 171	CM 3/4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		47.58		no consumption
Invoice	10/01/2016	12-7341	Parmelee, Brandon & Melissa 171	CM 3/4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		47.58		no consumption
Invoice	03/12/2016	12-6361	Skibowl E 361	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.2 - Commercial Metered	141 - Accounts Receivable	126,985.00		1,422.23		billed for 4 qtrs of base rate, only 2 consumption rates
Invoice	03/12/2016	12-6361	Skibowl E 361	C. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.2 - Commercial Metered	141 - Accounts Receivable	126,985.00		1,422.23		billed for 4 qtrs of base rate, only 2 consumption rates
Invoice	01/01/2016	12-6279	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		104.64		billed for 4 qtrs of base rate, only 2 consumption rates
Invoice	04/01/2016	12-6649	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		104.64		billed for 4 qtrs of base rate, only 2 consumption rates
Invoice	07/01/2016	12-7016	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		104.64		billed for 4 qtrs of base rate, only 2 consumption rates
Invoice	10/01/2016	12-7390	Skibowl E 361	MH 4"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		104.64		billed for 4 qtrs of base rate, only 2 consumption rates
Credit Memo	12/31/2016	12-8224	Skibowl West 364	CM 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	-1.00	29.81			?
Invoice	01/01/2016	12-6306	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		89.43		no consumption
Invoice	04/01/2016	12-6676	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		89.43		no consumption
Invoice	07/01/2016	12-7044	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		89.43		no consumption
Invoice	10/01/2016	12-7418	Summit Ski Area 367.1	MH 2"	Quarterly base rate	461.2 - Commercial Metered	141 - Accounts Receivable	1.00		89.43		no consumption



Type	Date	Num	Name	Item
Invoice	01/01/2016	12-5997	Ackerson / Paraskeva 331	C. Cf's used
Invoice	04/01/2016	12-6365	Ackerson / Paraskeva 331	C. Cf's used
Invoice	07/01/2016	12-6732	Ackerson / Paraskeva 331	C. Cf's used
Invoice	10/01/2016	12-7102	Ackerson / Paraskeva 331	C. Cf's used
Invoice	01/01/2016	12-6003	Arp, Tom 004	C. Cf's used
Invoice	04/01/2016	12-6371	Arp, Tom 004	C. Cf's used
Invoice	07/01/2016	12-6738	Arp, Tom 004	C. Cf's used
Invoice	10/01/2016	12-7108	Arp, Tom 004	C. Cf's used
Invoice	01/01/2016	12-6007	Barlow Pass West 005	C. Cf's used
Invoice	04/01/2016	12-6375	Barlow Pass West 005	C. Cf's used
Invoice	07/01/2016	12-6742	Barlow Pass West 005	C. Cf's used
Invoice	10/01/2016	12-7112	Barlow Pass West 005	C. Cf's used
Invoice	01/01/2016	12-6008	Barton, John & Julie 177	C. Cf's used
Invoice	04/01/2016	12-6376	Barton, John & Julie 177	C. Cf's used
Invoice	07/01/2016	12-6743	Barton, John & Julie 177	C. Cf's used
Invoice	10/01/2016	12-7113	Barton, John & Julie 177	C. Cf's used
Invoice	01/01/2016	12-6018	Big Blue Capital, LLC 313	C. Cf's used
Invoice	04/01/2016	12-6386	Big Blue Capital, LLC 313	C. Cf's used
Invoice	07/01/2016	12-6753	Big Blue Capital, LLC 313	C. Cf's used
Invoice	10/01/2016	12-7124	Big Blue Capital, LLC 313	C. Cf's used
Invoice	01/01/2016	12-6024	Branson, Margaret 032	C. Cf's used
Invoice	04/01/2016	12-6392	Branson, Margaret 032	C. Cf's used
Invoice	07/01/2016	12-6759	Branson, Margaret 032	C. Cf's used
Invoice	10/01/2016	12-7130	Branson, Margaret 032	C. Cf's used
Invoice	01/01/2016	12-6036	Campbell, Jim & Laura 160	C. Cf's used
Invoice	04/01/2016	12-6405	Campbell, Jim & Laura 160	C. Cf's used
Invoice	07/01/2016	12-6772	Campbell, Jim & Laura 160	C. Cf's used
Invoice	10/01/2016	12-7143	Campbell, Jim & Laura 160	C. Cf's used
Invoice	01/01/2016	12-6040	Carrier/OR Exprnce LLC 100	C. Cf's used
Invoice	04/01/2016	12-6409	Carrier/OR Exprnce LLC 100	C. Cf's used
Invoice	07/01/2016	12-6776	Carrier/OR Exprnce LLC 100	C. Cf's used
Invoice	10/01/2016	12-7147	Carrier/OR Exprnce LLC 100	C. Cf's used
Invoice	01/01/2016	12-6053	Collins Lake Chalet 311	C. Cf's used
Invoice	04/01/2016	12-6422	Collins Lake Chalet 311	C. Cf's used
Invoice	07/01/2016	12-6789	Collins Lake Chalet 311	C. Cf's used
Invoice	10/01/2016	12-7160	Collins Lake Chalet 311	C. Cf's used
Invoice	01/01/2016	12-6055	Cordan, Robyn N. & Michael, Jeffrey 01	C. Cf's used
Invoice	04/01/2016	12-6424	Cordan, Robyn N. & Michael, Jeffrey 01	C. Cf's used
Invoice	07/01/2016	12-6791	Cordan, Robyn N. & Michael, Jeffrey 01	C. Cf's used
Invoice	10/01/2016	12-7162	Cordan, Robyn N. & Michael, Jeffrey 01	C. Cf's used
Invoice	01/01/2016	12-6068	Edelweiss HOA 258	C. Cf's used
Invoice	04/01/2016	12-6436	Edelweiss HOA 258	C. Cf's used
Invoice	07/01/2016	12-6803	Edelweiss HOA 258	C. Cf's used
Invoice	10/01/2016	12-7174	Edelweiss HOA 258	C. Cf's used
Invoice	01/01/2016	12-6098	Guettler/Zuber 097	C. Cf's used

Invoice	04/01/2016	12-6467	Guettler/Zuber 097	C. Cf's used
Invoice	07/01/2016	12-6834	Guettler/Zuber 097	C. Cf's used
Invoice	10/01/2016	12-7207	Guettler/Zuber 097	C. Cf's used
Invoice	01/01/2016	12-6113	Harris, Rod & Linda 317	C. Cf's used
Invoice	04/01/2016	12-6481	Harris, Rod & Linda 317	C. Cf's used
Invoice	07/01/2016	12-6848	Harris, Rod & Linda 317	C. Cf's used
Invoice	10/01/2016	12-7221	Harris, Rod & Linda 317	C. Cf's used
Invoice	10/01/2016	12-7251	Johnson, Peter 046	C. Cf's used
Invoice	01/01/2016	12-6145	Kamikawa, James 319	C. Cf's used
Invoice	04/01/2016	12-6514	Kamikawa, James 319	C. Cf's used
Invoice	07/01/2016	12-6881	Kamikawa, James 319	C. Cf's used
Invoice	10/01/2016	12-7254	Kamikawa, James 319	C. Cf's used
Invoice	01/01/2016	12-6160	Landauer, Larry 242	C. Cf's used
Invoice	04/01/2016	12-6529	Landauer, Larry 242	C. Cf's used
Invoice	07/01/2016	12-6896	Landauer, Larry 242	C. Cf's used
Invoice	10/01/2016	12-7269	Landauer, Larry 242	C. Cf's used
Invoice	01/01/2016	12-6165	Leitgeb, Sherman&Lark 332	C. Cf's used
Invoice	04/01/2016	12-6534	Leitgeb, Sherman&Lark 332	C. Cf's used
Invoice	07/01/2016	12-6901	Leitgeb, Sherman&Lark 332	C. Cf's used
Invoice	10/01/2016	12-7274	Leitgeb, Sherman&Lark 332	C. Cf's used
Invoice	01/01/2016	12-6167	Lettunich, Michael /24-7 280	C. Cf's used
Invoice	04/01/2016	12-6536	Lettunich, Michael /24-7 280	C. Cf's used
Invoice	07/01/2016	12-6903	Lettunich, Michael /24-7 280	C. Cf's used
Invoice	10/01/2016	12-7276	Lettunich, Michael /24-7 280	C. Cf's used
Invoice	01/01/2016	12-6169	Little Trail Lodge 024	C. Cf's used
Invoice	04/01/2016	12-6538	Little Trail Lodge 024	C. Cf's used
Invoice	07/01/2016	12-6905	Little Trail Lodge 024	C. Cf's used
Invoice	10/01/2016	12-7278	Little Trail Lodge 024	C. Cf's used
Invoice	01/01/2016	12-6171	Lloyd Scroggins Construction 156	C. Cf's used
Invoice	04/01/2016	12-6540	Lloyd Scroggins Construction 156	C. Cf's used
Invoice	07/01/2016	12-6907	Lloyd Scroggins Construction 156	C. Cf's used
Invoice	10/01/2016	12-7280	Lloyd Scroggins Construction 156	C. Cf's used
Invoice	01/01/2016	12-6176	Lynott/Parson 307	C. Cf's used
Invoice	04/01/2016	12-6545	Lynott/Parson 307	C. Cf's used
Invoice	07/01/2016	12-6912	Lynott/Parson 307	C. Cf's used
Invoice	10/01/2016	12-7285	Lynott/Parson 307	C. Cf's used
Invoice	01/01/2016	12-6185	McLean, Terry&Elizabeth 007	C. Cf's used
Invoice	04/01/2016	12-6554	McLean, Terry&Elizabeth 007	C. Cf's used
Invoice	07/01/2016	12-6921	McLean, Terry&Elizabeth 007	C. Cf's used
Invoice	10/01/2016	12-7294	McLean, Terry&Elizabeth 007	C. Cf's used
Invoice	01/01/2016	12-6199	Morse, Dorte&Greg 114	C. Cf's used
Invoice	04/01/2016	12-6568	Morse, Dorte&Greg 114	C. Cf's used
Invoice	07/01/2016	12-6935	Morse, Dorte&Greg 114	C. Cf's used
Invoice	10/01/2016	12-7308	Morse, Dorte&Greg 114	C. Cf's used
Invoice	01/01/2016	12-6201	Mt Hd LLC II/North Lodge 347.2	C. Cf's used
Invoice	04/01/2016	12-6570	Mt Hd LLC II/North Lodge 347.2	C. Cf's used
Invoice	07/01/2016	12-6937	Mt Hd LLC II/North Lodge 347.2	C. Cf's used

Invoice	10/01/2016	12-7310	Mt Hd LLC II/North Lodge 347.2	C. Cf's used
Invoice	01/01/2016	12-6202	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	04/01/2016	12-6571	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	07/01/2016	12-6938	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	10/01/2016	12-7311	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	01/01/2016	12-6203	Mt Hd LLC II/South Lodge 347.3	C. Cf's used
Invoice	04/01/2016	12-6572	Mt Hd LLC II/South Lodge 347.3	C. Cf's used
Invoice	07/01/2016	12-6939	Mt Hd LLC II/South Lodge 347.3	C. Cf's used
Invoice	10/01/2016	12-7312	Mt Hd LLC II/South Lodge 347.3	C. Cf's used
Invoice	01/01/2016	12-6208	Mt Hood Resort Lodging 250.1	C. Cf's used
Invoice	04/01/2016	12-6577	Mt Hood Resort Lodging 250.1	C. Cf's used
Invoice	07/01/2016	12-6944	Mt Hood Resort Lodging 250.1	C. Cf's used
Invoice	10/01/2016	12-7317	Mt Hood Resort Lodging 250.1	C. Cf's used
Invoice	04/01/2016	12-6586	Neth, Warren 034	C. Cf's used
Invoice	07/01/2016	12-6953	Neth, Warren 034	C. Cf's used
Invoice	10/01/2016	12-7326	Neth, Warren 034	C. Cf's used
Invoice	01/01/2016	12-6223	Nogeire, Mary F 071	C. Cf's used
Invoice	04/01/2016	12-6592	Nogeire, Mary F 071	C. Cf's used
Invoice	07/01/2016	12-6959	Nogeire, Mary F 071	C. Cf's used
Invoice	10/01/2016	12-7332	Nogeire, Mary F 071	C. Cf's used
Invoice	01/01/2016	12-6234	Parmelee, Mark 214	C. Cf's used
Invoice	04/01/2016	12-6602	Parmelee, Mark 214	C. Cf's used
Invoice	07/01/2016	12-6969	Parmelee, Mark 214	C. Cf's used
Invoice	10/01/2016	12-7342	Parmelee, Mark 214	C. Cf's used
Invoice	01/01/2016	12-6238	Payne, Brian 025	C. Cf's used
Invoice	04/01/2016	12-6607	Payne, Brian 025	C. Cf's used
Invoice	07/01/2016	12-6974	Payne, Brian 025	C. Cf's used
Invoice	10/01/2016	12-7347	Payne, Brian 025	C. Cf's used
Invoice	01/01/2016	12-6240	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	04/01/2016	12-6609	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	07/01/2016	12-6976	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	10/01/2016	12-7349	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	01/01/2016	12-6249	Ravi & Putnam 060	C. Cf's used
Invoice	04/01/2016	12-6618	Ravi & Putnam 060	C. Cf's used
Invoice	07/01/2016	12-6985	Ravi & Putnam 060	C. Cf's used
Invoice	10/01/2016	12-7358	Ravi & Putnam 060	C. Cf's used
Invoice	01/01/2016	12-6238	Payne, Brian 025	C. Cf's used
Invoice	04/01/2016	12-6607	Payne, Brian 025	C. Cf's used
Invoice	07/01/2016	12-6974	Payne, Brian 025	C. Cf's used
Invoice	10/01/2016	12-7347	Payne, Brian 025	C. Cf's used
Invoice	01/01/2016	12-6240	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	04/01/2016	12-6609	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	07/01/2016	12-6976	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	10/01/2016	12-7349	Perrodin, Gloria & J A 126	C. Cf's used
Invoice	01/01/2016	12-6281	Skowhede / Trails Out 157	C. Cf's used
Invoice	04/01/2016	12-6651	Skowhede / Trails Out 157	C. Cf's used
Invoice	07/01/2016	12-7018	Skowhede / Trails Out 157	C. Cf's used

Invoice	10/01/2016	12-7392	Skowhede / Trails Out 157	C. Cf's used
Invoice	01/01/2016	12-6302	Summit Apartments 129	C. Cf's used
Invoice	04/01/2016	12-6672	Summit Apartments 129	C. Cf's used
Invoice	07/01/2016	12-7040	Summit Apartments 129	C. Cf's used
Invoice	10/01/2016	12-7414	Summit Apartments 129	C. Cf's used
Invoice	01/01/2016	12-6051	Summit Chevron 245	C. Cf's used
Invoice	04/01/2016	12-6420	Summit Chevron 245	C. Cf's used
Invoice	07/01/2016	12-6787	Summit Chevron 245	C. Cf's used
Invoice	10/01/2016	12-7158	Summit Chevron 245	C. Cf's used
Invoice	01/01/2016	12-6303	Summit LLC, House Inn 055	C. Cf's used
Invoice	04/01/2016	12-6673	Summit LLC, House Inn 055	C. Cf's used
Invoice	07/01/2016	12-7041	Summit LLC, House Inn 055	C. Cf's used
Invoice	10/01/2016	12-7415	Summit LLC, House Inn 055	C. Cf's used
Invoice	01/01/2016	12-6310	The Lodge at G.C. 338	C. Cf's used
Invoice	04/01/2016	12-6679	The Lodge at G.C. 338	C. Cf's used
Invoice	07/01/2016	12-7047	The Lodge at G.C. 338	C. Cf's used
Invoice	10/01/2016	12-7421	The Lodge at G.C. 338	C. Cf's used
Invoice	01/01/2016	12-6311	The Lodge at G.C. Office 338.1	C. Cf's used
Invoice	04/01/2016	12-6680	The Lodge at G.C. Office 338.1	C. Cf's used
Invoice	07/01/2016	12-7048	The Lodge at G.C. Office 338.1	C. Cf's used
Invoice	10/01/2016	12-7422	The Lodge at G.C. Office 338.1	C. Cf's used
Invoice	01/01/2016	12-6312	The Lodge at G.C. Store 338.2	C. Cf's used
Invoice	04/01/2016	12-6681	The Lodge at G.C. Store 338.2	C. Cf's used
Invoice	07/01/2016	12-7049	The Lodge at G.C. Store 338.2	C. Cf's used
Invoice	10/01/2016	12-7423	The Lodge at G.C. Store 338.2	C. Cf's used
Invoice	01/01/2016	12-6316	Thompson, Terry&Wendi 340	C. Cf's used
Invoice	04/01/2016	12-6685	Thompson, Terry&Wendi 340	C. Cf's used
Invoice	07/01/2016	12-7053	Thompson, Terry&Wendi 340	C. Cf's used
Invoice	10/01/2016	12-7427	Thompson, Terry&Wendi 340	C. Cf's used
Invoice	01/01/2016	12-6317	Tichy, Martin 011	C. Cf's used
Invoice	04/01/2016	12-6686	Tichy, Martin 011	C. Cf's used
Invoice	07/01/2016	12-7054	Tichy, Martin 011	C. Cf's used
Invoice	10/01/2016	12-7428	Tichy, Martin 011	C. Cf's used
Invoice	01/01/2016	12-6320	Tipi Mato LLC 326	C. Cf's used
Invoice	04/01/2016	12-6689	Tipi Mato LLC 326	C. Cf's used
Invoice	07/01/2016	12-7057	Tipi Mato LLC 326	C. Cf's used
Invoice	10/01/2016	12-7431	Tipi Mato LLC 326	C. Cf's used
Invoice	01/01/2016	12-6325	True, Sidney 003	C. Cf's used
Invoice	04/01/2016	12-6694	True, Sidney 003	C. Cf's used
Invoice	07/01/2016	12-7062	True, Sidney 003	C. Cf's used
Invoice	10/01/2016	12-7436	True, Sidney 003	C. Cf's used
Invoice	01/01/2016	12-6327	Turpack, Lynn 125	C. Cf's used
Invoice	04/01/2016	12-6696	Turpack, Lynn 125	C. Cf's used
Invoice	07/01/2016	12-7064	Turpack, Lynn 125	C. Cf's used
Invoice	10/01/2016	12-7438	Turpack, Lynn 125	C. Cf's used
Invoice	01/01/2016	12-6348	Wilcox, Calumet Rentals LLC 237	C. Cf's used
Invoice	04/01/2016	12-6717	Wilcox, Calumet Rentals LLC 237	C. Cf's used

Invoice	07/01/2016	12-7085	Wilcox, Calumet Rentals LLC 237	C. Cf's used
Invoice	10/01/2016	12-7459	Wilcox, Calumet Rentals LLC 237	C. Cf's used
Invoice	01/01/2016	12-6349	WilliamLloyd Developments, Inc. 356	C. Cf's used
Invoice	04/01/2016	12-6718	WilliamLloyd Developments, Inc. 356	C. Cf's used
Invoice	07/01/2016	12-7086	WilliamLloyd Developments, Inc. 356	C. Cf's used
Invoice	10/01/2016	12-7460	WilliamLloyd Developments, Inc. 356	C. Cf's used
Invoice	01/01/2016	12-6353	Wong, Nadine & Scott 324	C. Cf's used
Invoice	04/01/2016	12-6722	Wong, Nadine & Scott 324	C. Cf's used
Invoice	07/01/2016	12-7090	Wong, Nadine & Scott 324	C. Cf's used
Invoice	10/01/2016	12-7464	Wong, Nadine & Scott 324	C. Cf's used

Invoice	10/01/2016	12-7251	Johnson, Peter 046	C. Cf's used
Invoice	07/01/2016	12-6878	Johnson, Peter 046	CM 3/4"
Invoice	10/01/2016	12-7251	Johnson, Peter 046	CM 3/4"











Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
	<b>Summarized CF usage</b>

Water consumption for the quarter (\$1.12/100Cf)	461.2 · Commercial Metered
Quarterly base rate	461.2 · Commercial Metered
Quarterly base rate	461.2 · Commercial Metered

Split	Qty -CF	Debit	Credit
141 · Accounts Receivable	10,802.50		120.99
141 · Accounts Receivable	10,802.50		120.99
141 · Accounts Receivable	10,802.50		120.99
141 · Accounts Receivable	7,673.50		85.94
141 · Accounts Receivable	62.00		0.69
141 · Accounts Receivable	62.00		0.69
141 · Accounts Receivable	62.00		0.69
141 · Accounts Receivable	661.50		7.41
141 · Accounts Receivable	1,090.00		12.21
141 · Accounts Receivable	1,090.00		12.21
141 · Accounts Receivable	1,090.00		12.21
141 · Accounts Receivable	2,932.50		32.84
141 · Accounts Receivable	340.00		3.81
141 · Accounts Receivable	340.00		3.81
141 · Accounts Receivable	340.00		3.81
141 · Accounts Receivable	203.00		2.27
141 · Accounts Receivable	3,640.00		40.77
141 · Accounts Receivable	3,640.00		40.77
141 · Accounts Receivable	3,640.00		40.77
141 · Accounts Receivable	4,375.25		49.00
141 · Accounts Receivable	1,749.75		19.60
141 · Accounts Receivable	1,749.75		19.60
141 · Accounts Receivable	1,749.75		19.60
141 · Accounts Receivable	1,039.50		11.64
141 · Accounts Receivable	1,315.00		14.73
141 · Accounts Receivable	1,315.00		14.73
141 · Accounts Receivable	1,315.00		14.73
141 · Accounts Receivable	1,028.50		11.52
141 · Accounts Receivable	4,994.75		55.94
141 · Accounts Receivable	4,994.75		55.94
141 · Accounts Receivable	4,994.75		55.94
141 · Accounts Receivable	1,611.25		18.05
141 · Accounts Receivable	96,339.00		1,079.00
141 · Accounts Receivable	96,339.00		1,079.00
141 · Accounts Receivable	96,339.00		1,079.00
141 · Accounts Receivable	101,789.75		1,140.05
141 · Accounts Receivable	230.75		2.58
141 · Accounts Receivable	230.75		2.58
141 · Accounts Receivable	230.75		2.58
141 · Accounts Receivable	212.00		2.37
141 · Accounts Receivable	7,834.00		87.74
141 · Accounts Receivable	7,834.00		87.74
141 · Accounts Receivable	7,834.00		87.74
141 · Accounts Receivable	8,790.11		98.45
141 · Accounts Receivable	4,905.75		54.94

141 · Accounts Receivable	4,905.75		54.94
141 · Accounts Receivable	4,905.75		54.94
141 · Accounts Receivable	2,856.50		31.99
141 · Accounts Receivable	1,485.25		35.47
141 · Accounts Receivable	1,485.25		35.47
141 · Accounts Receivable	1,485.25		35.47
141 · Accounts Receivable	487.00		11.63
141 · Accounts Receivable	590.25		6.61
141 · Accounts Receivable	1,224.75		14.83
141 · Accounts Receivable	1,224.75		14.83
141 · Accounts Receivable	1,224.75		14.83
141 · Accounts Receivable	1,223.25		14.81
141 · Accounts Receivable	1,379.50		15.45
141 · Accounts Receivable	1,379.50		15.45
141 · Accounts Receivable	1,379.50		15.45
141 · Accounts Receivable	1,382.75		15.49
141 · Accounts Receivable	856.75		15.98
141 · Accounts Receivable	856.75		15.98
141 · Accounts Receivable	856.75		15.98
141 · Accounts Receivable	769.00		14.34
141 · Accounts Receivable	1,494.75		16.74
141 · Accounts Receivable	1,494.75		16.74
141 · Accounts Receivable	1,494.75		16.74
141 · Accounts Receivable	1,807.75		20.25
141 · Accounts Receivable	1,801.00		20.17
141 · Accounts Receivable	1,801.00		20.17
141 · Accounts Receivable	1,801.00		20.17
141 · Accounts Receivable	5,548.13		62.14
141 · Accounts Receivable	182.25		2.04
141 · Accounts Receivable	182.25		2.04
141 · Accounts Receivable	182.25		2.04
141 · Accounts Receivable	3.75		0.04
141 · Accounts Receivable	2,819.25		31.58
141 · Accounts Receivable	2,819.25		31.58
141 · Accounts Receivable	2,819.25		31.58
141 · Accounts Receivable	4,331.00		48.51
141 · Accounts Receivable	1,197.00		13.41
141 · Accounts Receivable	1,197.00		13.41
141 · Accounts Receivable	1,197.00		13.41
141 · Accounts Receivable	1,834.89		20.55
141 · Accounts Receivable	480.50		5.38
141 · Accounts Receivable	480.50		5.38
141 · Accounts Receivable	480.50		5.38
141 · Accounts Receivable	347.25		3.89
141 · Accounts Receivable	21,075.75		236.05
141 · Accounts Receivable	21,075.75		236.05
141 · Accounts Receivable	21,075.75		236.05

141 · Accounts Receivable	21,725.25		243.32
141 · Accounts Receivable	4,614.25		51.68
141 · Accounts Receivable	4,614.25		51.68
141 · Accounts Receivable	4,614.25		51.68
141 · Accounts Receivable	3,305.50		37.02
141 · Accounts Receivable	13,946.25		156.20
141 · Accounts Receivable	13,946.25		156.20
141 · Accounts Receivable	13,946.25		156.20
141 · Accounts Receivable	18,122.25		202.97
141 · Accounts Receivable	8,753.00		98.03
141 · Accounts Receivable	8,753.00		98.03
141 · Accounts Receivable	8,753.00		98.03
141 · Accounts Receivable	8,462.57		94.78
141 · Accounts Receivable	2,917.50		32.68
141 · Accounts Receivable	2,917.50		32.68
141 · Accounts Receivable	2,555.00		28.62
141 · Accounts Receivable	862.75		9.66
141 · Accounts Receivable	862.75		9.66
141 · Accounts Receivable	862.75		9.66
141 · Accounts Receivable	1,217.50		13.64
141 · Accounts Receivable	2,378.50		26.64
141 · Accounts Receivable	2,378.50		26.64
141 · Accounts Receivable	2,378.50		26.64
141 · Accounts Receivable	920.00		10.30
141 · Accounts Receivable	1,135.70		12.72
141 · Accounts Receivable	1,135.70		12.72
141 · Accounts Receivable	1,135.70		12.72
141 · Accounts Receivable	1,296.46		14.52
141 · Accounts Receivable	1,111.75		12.45
141 · Accounts Receivable	1,111.75		12.45
141 · Accounts Receivable	1,111.75		12.45
141 · Accounts Receivable	1,387.75		15.54
141 · Accounts Receivable	1,632.00		18.28
141 · Accounts Receivable	1,632.00		18.28
141 · Accounts Receivable	1,632.00		18.28
141 · Accounts Receivable	1,868.75		20.93
141 · Accounts Receivable	419.54317		83.23
141 · Accounts Receivable	408.5183		84.77
141 · Accounts Receivable	397.49342		86.31
141 · Accounts Receivable	386.46854		87.85
141 · Accounts Receivable	331.34414		95.57
141 · Accounts Receivable	320.31926		97.11
141 · Accounts Receivable	309.29438		98.65
141 · Accounts Receivable	298.2695		100.20
141 · Accounts Receivable	2,159.00		24.18
141 · Accounts Receivable	2,159.00		24.18
141 · Accounts Receivable	2,159.00		24.18



141 · Accounts Receivable	2,284.75		25.59
141 · Accounts Receivable	21,472.50		240.49
141 · Accounts Receivable	21,472.50		240.49
141 · Accounts Receivable	21,472.50		240.49
141 · Accounts Receivable	20,580.00		230.50
141 · Accounts Receivable	1,323.25		14.82
141 · Accounts Receivable	1,323.25		14.82
141 · Accounts Receivable	1,323.25		14.82
141 · Accounts Receivable	1,383.50		15.50
141 · Accounts Receivable	4,751.00		53.21
141 · Accounts Receivable	4,751.00		53.21
141 · Accounts Receivable	4,751.00		53.21
141 · Accounts Receivable	4,751.00		53.21
141 · Accounts Receivable	4,775.75		53.49
141 · Accounts Receivable	10,537.50		118.02
141 · Accounts Receivable	10,537.50		118.02
141 · Accounts Receivable	10,537.50		118.02
141 · Accounts Receivable	11,422.50		127.93
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	2,144.167		24.01
141 · Accounts Receivable	1,507.75		16.89
141 · Accounts Receivable	1,507.75		16.89
141 · Accounts Receivable	1,507.75		16.89
141 · Accounts Receivable	1,648.25		18.46
141 · Accounts Receivable	1,856.50		20.79
141 · Accounts Receivable	1,856.50		20.79
141 · Accounts Receivable	1,856.50		20.79
141 · Accounts Receivable	3,549.50		39.75
141 · Accounts Receivable	834.75		9.35
141 · Accounts Receivable	834.75		9.35
141 · Accounts Receivable	834.75		9.35
141 · Accounts Receivable	802.75		8.99
141 · Accounts Receivable	1,630.75		18.26
141 · Accounts Receivable	1,630.75		18.26
141 · Accounts Receivable	1,630.75		18.26
141 · Accounts Receivable	1,318.75		14.77
141 · Accounts Receivable	531.08		5.95
141 · Accounts Receivable	531.08		5.95
141 · Accounts Receivable	531.08		5.95
141 · Accounts Receivable	2,150.40		24.08
141 · Accounts Receivable	1,017.25		11.39
141 · Accounts Receivable	1,017.25		11.39

141 · Accounts Receivable	1,017.25		11.39
141 · Accounts Receivable	613.25		6.87
141 · Accounts Receivable	88.75		0.99
141 · Accounts Receivable	88.75		0.99
141 · Accounts Receivable	88.75		0.99
141 · Accounts Receivable	2.25		0.03
141 · Accounts Receivable	183.75		3.06
141 · Accounts Receivable	183.75		3.06
141 · Accounts Receivable	183.75		3.06
141 · Accounts Receivable	215.50		3.58
	<b>cf per Co.</b>		<b>\$\$ billed</b>
<b>for CM 3/4 inch customers</b>	<b>1,037,850.98670</b>		<b>\$12,421.58</b>
<b>Per units (cf/100)</b>	<b>10378.51</b>		
<b>Staff Checker units * \$1.12</b>	<b>\$11,623.93</b>		
<b>Difference billed/staff checker</b>	<b>\$797.65</b>		

141 · Accounts Receivable	590.25		6.61
141 · Accounts Receivable	2.00		95.16
141 · Accounts Receivable	2.00		95.16

Staff Check	Difference
\$120.99	\$0.00
\$120.99	\$0.00
\$120.99	\$0.00
\$85.94	\$0.00
\$0.69	\$0.00
\$0.69	\$0.00
\$0.69	\$0.00
\$7.41	\$0.00
\$12.21	\$0.00
\$12.21	\$0.00
\$12.21	\$0.00
\$32.84	\$0.00
\$3.81	\$0.00
\$3.81	\$0.00
\$3.81	\$0.00
\$2.27	\$0.00
\$40.77	\$0.00
\$40.77	\$0.00
\$40.77	\$0.00
\$49.00	\$0.00
\$19.60	\$0.00
\$19.60	\$0.00
\$19.60	\$0.00
\$11.64	\$0.00
\$14.73	\$0.00
\$14.73	\$0.00
\$14.73	\$0.00
\$11.52	\$0.00
\$55.94	\$0.00
\$55.94	\$0.00
\$55.94	\$0.00
\$18.05	\$0.00
\$1,079.00	\$0.00
\$1,079.00	\$0.00
\$1,079.00	\$0.00
\$1,140.05	\$0.00
\$2.58	\$0.00
\$2.58	\$0.00
\$2.58	\$0.00
\$2.37	\$0.00
\$87.74	\$0.00
\$87.74	\$0.00
\$87.74	\$0.00
\$98.45	\$0.00
\$54.94	\$0.00

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	\$54.94	\$0.00
	\$54.94	\$0.00
	\$31.99	\$0.00
	\$16.63	-\$18.84
	\$16.63	-\$18.84
	\$16.63	-\$18.84
	\$5.45	-\$6.18
	\$6.61	\$0.00
	\$13.72	-\$1.11
	\$13.72	-\$1.11
	\$13.72	-\$1.11
	\$13.70	-\$1.11
	\$15.45	\$0.00
	\$15.45	\$0.00
	\$15.45	\$0.00
	\$15.49	\$0.00
	\$9.60	-\$6.38
	\$9.60	-\$6.38
	\$9.60	-\$6.38
	\$8.61	-\$5.73
	\$16.74	\$0.00
	\$16.74	\$0.00
	\$16.74	\$0.00
	\$20.25	\$0.00
	\$20.17	\$0.00
	\$20.17	\$0.00
	\$20.17	\$0.00
	\$62.14	\$0.00
	\$2.04	\$0.00
	\$2.04	\$0.00
	\$2.04	\$0.00
	\$0.04	\$0.00
	\$31.58	\$0.00
	\$31.58	\$0.00
	\$31.58	\$0.00
	\$48.51	\$0.00
	\$13.41	\$0.00
	\$13.41	\$0.00
	\$13.41	\$0.00
	\$20.55	\$0.00
	\$5.38	\$0.00
	\$5.38	\$0.00
	\$5.38	\$0.00
	\$3.89	\$0.00
	\$236.05	\$0.00
	\$236.05	\$0.00
	\$236.05	\$0.00

\$243.32	\$0.00
\$51.68	\$0.00
\$51.68	\$0.00
\$51.68	\$0.00
\$37.02	\$0.00
\$156.20	\$0.00
\$156.20	\$0.00
\$156.20	\$0.00
\$202.97	\$0.00
\$98.03	\$0.00
\$98.03	\$0.00
\$98.03	\$0.00
\$94.78	\$0.00
\$32.68	\$0.00
\$32.68	\$0.00
\$28.62	\$0.00
\$9.66	\$0.00
\$9.66	\$0.00
\$9.66	\$0.00
\$13.64	\$0.00
\$26.64	\$0.00
\$26.64	\$0.00
\$26.64	\$0.00
\$10.30	\$0.00
\$12.72	\$0.00
\$12.72	\$0.00
\$12.72	\$0.00
\$14.52	\$0.00
\$12.45	\$0.00
\$12.45	\$0.00
\$12.45	\$0.00
\$15.54	\$0.00
\$18.28	\$0.00
\$18.28	\$0.00
\$18.28	\$0.00
\$20.93	\$0.00
\$4.70	-\$78.53
\$4.58	-\$80.19
\$4.45	-\$81.86
\$4.33	-\$83.53
\$3.71	-\$91.86
\$3.59	-\$93.52
\$3.46	-\$95.19
\$3.34	-\$96.86
\$24.18	\$0.00
\$24.18	\$0.00
\$24.18	\$0.00

\$25.59	\$0.00
\$240.49	\$0.00
\$240.49	\$0.00
\$240.49	\$0.00
\$230.50	\$0.00
\$14.82	\$0.00
\$14.82	\$0.00
\$14.82	\$0.00
\$15.50	\$0.00
\$53.21	\$0.00
\$53.21	\$0.00
\$53.21	\$0.00
\$53.49	\$0.00
\$118.02	\$0.00
\$118.02	\$0.00
\$118.02	\$0.00
\$127.93	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$24.01	\$0.00
\$16.89	\$0.00
\$16.89	\$0.00
\$16.89	\$0.00
\$18.46	\$0.00
\$20.79	\$0.00
\$20.79	\$0.00
\$20.79	\$0.00
\$39.75	\$0.00
\$9.35	\$0.00
\$9.35	\$0.00
\$9.35	\$0.00
\$8.99	\$0.00
\$18.26	\$0.00
\$18.26	\$0.00
\$18.26	\$0.00
\$14.77	\$0.00
\$5.95	\$0.00
\$5.95	\$0.00
\$5.95	\$0.00
\$24.08	\$0.00
\$11.39	\$0.00
\$11.39	\$0.00

\$11.39	\$0.00
\$6.87	\$0.00
\$0.99	\$0.00
\$0.99	\$0.00
\$0.99	\$0.00
\$0.03	\$0.00
\$2.06	-\$1.00
\$2.06	-\$1.00
\$2.06	-\$1.00
\$2.41	-\$1.17
<b>\$11,623.93</b>	<b>-\$797.65</b>

two base, one consumption  
two base, one consumption  
two base, one consumption

Type	Date	Num	Name	Item
Invoice	01/01/2016	12-5995	Abdie, Jerry&Colette 152	C. Cf's used
Invoice	04/01/2016	12-6363	Abdie, Jerry&Colette 152	C. Cf's used
Invoice	07/01/2016	12-6730	Abdie, Jerry&Colette 152	C. Cf's used
Invoice	10/01/2016	12-7100	Abdie, Jerry&Colette 152	C. Cf's used
Invoice	01/01/2016	12-6004	ASB 50 Ventures/Berke 302	C. Cf's used
Invoice	04/01/2016	12-6372	ASB 50 Ventures/Berke 302	C. Cf's used
Invoice	07/01/2016	12-6739	ASB 50 Ventures/Berke 302	C. Cf's used
Invoice	10/01/2016	12-7109	ASB 50 Ventures/Berke 302	C. Cf's used
Invoice	01/01/2016	12-6061	Deane, Kristin 040	C. Cf's used
Invoice	04/01/2016	12-6430	Deane, Kristin 040	C. Cf's used
Invoice	07/01/2016	12-6797	Deane, Kristin 040	C. Cf's used
Invoice	10/01/2016	12-7168	Deane, Kristin 040	C. Cf's used
Invoice	01/01/2016	12-6142	Jondahl, Terry 036	C. Cf's used
Invoice	04/01/2016	12-6512	Jondahl, Terry 036	C. Cf's used
Invoice	07/01/2016	12-6879	Jondahl, Terry 036	C. Cf's used
Invoice	10/01/2016	12-7252	Jondahl, Terry 036	C. Cf's used
Invoice	01/01/2016	12-6157	Kropacek, Dasha&Slava 059	C. Cf's used
Invoice	04/01/2016	12-6526	Kropacek, Dasha&Slava 059	C. Cf's used
Invoice	07/01/2016	12-6893	Kropacek, Dasha&Slava 059	C. Cf's used
Invoice	10/01/2016	12-7266	Kropacek, Dasha&Slava 059	C. Cf's used
Invoice	01/01/2016	12-6177	Lynott/Parson 307.1	C. Cf's used
Invoice	04/01/2016	12-6546	Lynott/Parson 307.1	C. Cf's used
Invoice	07/01/2016	12-6913	Lynott/Parson 307.1	C. Cf's used
Invoice	10/01/2016	12-7286	Lynott/Parson 307.1	C. Cf's used
Invoice	01/01/2016	12-6182	Mazama Lodge 164	C. Cf's used
Invoice	04/01/2016	12-6551	Mazama Lodge 164	C. Cf's used
Invoice	07/01/2016	12-6918	Mazama Lodge 164	C. Cf's used
Invoice	10/01/2016	12-7291	Mazama Lodge 164	C. Cf's used
Invoice	01/01/2016	12-6202	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	04/01/2016	12-6571	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	07/01/2016	12-6938	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	10/01/2016	12-7311	Mt Hd LLC II/Pool & Clb Hse 347.1	C. Cf's used
Invoice	10/01/2016	12-7318	Mt Hood Ski Patrol 057	C. Cf's used
Invoice	01/01/2016	12-6248	Mt. Hood Holding / Ratskeller 038	C. Cf's used
Invoice	04/01/2016	12-6617	Mt. Hood Holding / Ratskeller 038	C. Cf's used
Invoice	07/01/2016	12-6984	Mt. Hood Holding / Ratskeller 038	C. Cf's used
Invoice	10/01/2016	12-7357	Mt. Hood Holding / Ratskeller 038	C. Cf's used
Invoice	01/01/2016	12-6225	ODOT Compound Shop 249.1	C. Cf's used
Invoice	04/01/2016	12-6594	ODOT Compound Shop 249.1	C. Cf's used
Invoice	07/01/2016	12-6961	ODOT Compound Shop 249.1	C. Cf's used
Invoice	10/01/2016	12-7334	ODOT Compound Shop 249.1	C. Cf's used
Invoice	01/01/2016	12-6237	Patterson, Lowell & Bev 175	C. Cf's used
Invoice	04/01/2016	12-6606	Patterson, Lowell & Bev 175	C. Cf's used
Invoice	07/01/2016	12-6973	Patterson, Lowell & Bev 175	C. Cf's used
Invoice	10/01/2016	12-7346	Patterson, Lowell & Bev 175	C. Cf's used



Invoice	01/01/2016	12-6182	Mazama Lodge	164	C. Cf's used
Invoice	04/01/2016	12-6551	Mazama Lodge	164	C. Cf's used
Invoice	07/01/2016	12-6918	Mazama Lodge	164	C. Cf's used
Invoice	10/01/2016	12-7291	Mazama Lodge	164	C. Cf's used
Invoice	01/01/2016	12-6182	Mazama Lodge	164	CM 1"
Invoice	04/01/2016	12-6551	Mazama Lodge	164	CM 1"
Invoice	07/01/2016	12-6918	Mazama Lodge	164	CM 1"
Invoice	10/01/2016	12-7291	Mazama Lodge	164	CM 1"
Invoice	01/01/2016	12-6202	Mt Hd LLC II/Pool & Clb Hse	347.1	C. Cf's used
Invoice	04/01/2016	12-6571	Mt Hd LLC II/Pool & Clb Hse	347.1	C. Cf's used
Invoice	07/01/2016	12-6938	Mt Hd LLC II/Pool & Clb Hse	347.1	C. Cf's used
Invoice	10/01/2016	12-7311	Mt Hd LLC II/Pool & Clb Hse	347.1	C. Cf's used
Invoice	01/01/2016	12-6202	Mt Hd LLC II/Pool & Clb Hse	347.1	CM 1"
Invoice	04/01/2016	12-6571	Mt Hd LLC II/Pool & Clb Hse	347.1	CM 1"
Invoice	07/01/2016	12-6938	Mt Hd LLC II/Pool & Clb Hse	347.1	CM 1"
Invoice	10/01/2016	12-7311	Mt Hd LLC II/Pool & Clb Hse	347.1	CM 1"
Invoice	10/01/2016	12-7318	Mt Hood Ski Patrol	057	C. Cf's used
Invoice	10/01/2016	12-7318	Mt Hood Ski Patrol	057	CM 1"



<b>Summarized CF usage for CM 1 inch customers</b>		
	<b>Per units (cf/100)</b>	
	<b>Staff Checker units * \$1.12</b>	
	<b>Difference billed/staff checker</b>	

Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12/100	461.2 · Commercial Metered	141 · Accounts Receiv
Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receiv

Qty -CF	Debit	Credit
446.75		5.00
446.75		5.00
446.75		5.00
375.50		4.21
1,117.50		12.52
1,117.50		12.52
1,117.50		12.52
183.25		2.05
1,273.08		14.26
1,273.08		14.26
1,273.08		14.26
1,161.99		13.01
1,273.08		14.26
1,273.08		14.26
1,273.08		14.26
1,161.99		13.01
3,819.25		42.78
3,819.25		42.78
3,819.25		42.78
3,594.75		40.26
956.00		10.71
956.00		10.71
956.00		10.71
1,259.75		14.11
6,100.00		68.32
6,100.00		68.32
6,100.00		68.32
7,676.00		85.97
4,614.25		51.68
4,614.25		51.68
4,614.25		51.68
3,305.50		37.02
9,347.50		104.69
13,794.00		154.49
13,794.00		154.49
13,794.00		154.49
13,988.75		156.67
4,191.00		46.94
4,191.00		46.94
4,191.00		46.94
4,889.71		54.76
1,273.08		14.26
1,273.08		14.26
1,273.08		14.26
1,161.99		13.01

Staff Check	Difference
\$5.00	\$0.00
\$5.00	\$0.00
\$5.00	\$0.00
\$4.21	\$0.00
\$12.52	\$0.00
\$12.52	\$0.00
\$12.52	\$0.00
\$2.05	\$0.00
\$14.26	\$0.00
\$14.26	\$0.00
\$14.26	\$0.00
\$13.01	\$0.00
\$14.26	\$0.00
\$14.26	\$0.00
\$14.26	\$0.00
\$13.01	\$0.00
\$42.78	\$0.00
\$42.78	\$0.00
\$42.78	\$0.00
\$40.26	\$0.00
\$10.71	\$0.00
\$10.71	\$0.00
\$10.71	\$0.00
\$14.11	\$0.00
\$68.32	\$0.00
\$68.32	\$0.00
\$68.32	\$0.00
\$85.97	\$0.00
\$51.68	\$0.00
\$51.68	\$0.00
\$51.68	\$0.00
\$37.02	\$0.00
\$104.69	\$0.00
\$154.49	\$0.00
\$154.49	\$0.00
\$154.49	\$0.00
\$156.67	\$0.00
\$46.94	\$0.00
\$46.94	\$0.00
\$46.94	\$0.00
\$54.76	\$0.00
\$14.26	\$0.00
\$14.26	\$0.00
\$14.26	\$0.00
\$13.01	\$0.00

<b>cf per Co</b>
<b>164,680.65</b>
<b>1647</b>
<b>\$1,844.42</b>
<b>\$0.01</b>

<b>\$\$ Billed</b>	<b>Total</b>	<b>\$1,844.42</b>	<b>-\$0.01</b>
<b>\$1,844.43</b>			

6,100.00		68.32	consumption seems low
6,100.00		68.32	consumption seems low
6,100.00		68.32	consumption seems low
7,676.00		85.97	consumption seems low
1.00		59.46	consumption seems low
1.00		59.46	consumption seems low
1.00		59.46	consumption seems low
1.00		59.46	consumption seems low
4,614.25		51.68	consumption seems low
4,614.25		51.68	consumption seems low
4,614.25		51.68	consumption seems low
3,305.50		37.02	consumption seems low
2.00		118.92	consumption seems low
2.00		118.92	consumption seems low
2.00		118.92	consumption seems low
2.00		118.92	consumption seems low
9,347.50		104.69	why only one quarter
1.00		59.46	why only one quarter

Type	Date	Num	Name	Item
Invoice	01/01/2016	12-6054	Collins Lake Pool & Clubhouse 311.2	C. Cf's used
Invoice	04/01/2016	12-6423	Collins Lake Pool & Clubhouse 311.2	C. Cf's used
Invoice	07/01/2016	12-6790	Collins Lake Pool & Clubhouse 311.2	C. Cf's used
Invoice	10/01/2016	12-7161	Collins Lake Pool & Clubhouse 311.2	C. Cf's used
Invoice	01/01/2016	12-6206	Mt Hood Museum 306	C. Cf's used
Invoice	04/01/2016	12-6575	Mt Hood Museum 306	C. Cf's used
Invoice	07/01/2016	12-6942	Mt Hood Museum 306	C. Cf's used
Invoice	10/01/2016	12-7315	Mt Hood Museum 306	C. Cf's used
Invoice	01/01/2016	12-6207	Mt Hood Resort Lodging 250	C. Cf's used
Invoice	04/01/2016	12-6576	Mt Hood Resort Lodging 250	C. Cf's used
Invoice	07/01/2016	12-6943	Mt Hood Resort Lodging 250	C. Cf's used
Invoice	10/01/2016	12-7316	Mt Hood Resort Lodging 250	C. Cf's used

Item Description	Account	Split
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
Water consumption for the quarter (\$1.12	461.2 · Commercial Metered	141 · Accounts Receiv
<b>Summarized CF usage for CM 1.5 inch customers</b>		
	<b>Per units (cf/100)</b>	
	<b>Staff Checker units * \$1.12</b>	
	<b>Difference billed/staff checker</b>	

Qty - CF	Debit	Credit	Balance
6,850.00		76.72	
6,850.00		76.72	
6,850.00		76.72	
11,327.50		126.87	
2,100.00		23.52	
2,100.00		23.52	
2,100.00		23.52	
2,298.25		25.74	
2,767.50		31.00	
2,767.50		31.00	
2,767.50		31.00	
2,620.00		29.34	
<b>cf per Co</b>		<b>Total Billed</b>	
<b>51,398.25</b>		<b>575.67</b>	
<b>514</b>			
<b>\$575.66</b>			
<b>\$0.01</b>			

Staff Checker	Difference
\$76.72	\$0.00
\$76.72	\$0.00
\$76.72	\$0.00
\$126.87	\$0.00
\$23.52	\$0.00
\$23.52	\$0.00
\$23.52	\$0.00
\$25.74	\$0.00
\$31.00	\$0.00
\$31.00	\$0.00
\$31.00	\$0.00
\$29.34	\$0.00
\$575.66	-\$0.01



Type	Date	Num	Name	Item
Invoice	01/01/2016	12-6023	Boy Scouts of America 008	C. Cf's used
Invoice	04/01/2016	12-6391	Boy Scouts of America 008	C. Cf's used
Invoice	07/01/2016	12-6758	Boy Scouts of America 008	C. Cf's used
Invoice	10/01/2016	12-7129	Boy Scouts of America 008	C. Cf's used
Invoice	01/01/2016	12-6042	Cascade Ski Club 010 metered	C. Cf's used
Invoice	04/01/2016	12-6411	Cascade Ski Club 010 metered	C. Cf's used
Invoice	07/01/2016	12-6778	Cascade Ski Club 010 metered	C. Cf's used
Invoice	10/01/2016	12-7149	Cascade Ski Club 010 metered	C. Cf's used
Invoice	01/01/2016	12-6133	Huckelberry / Restaurant 098	C. Cf's used
Invoice	04/01/2016	12-6501	Huckelberry / Restaurant 098	C. Cf's used
Invoice	07/01/2016	12-6868	Huckelberry / Restaurant 098	C. Cf's used
Invoice	10/01/2016	12-7241	Huckelberry / Restaurant 098	C. Cf's used
Invoice	01/01/2016	12-6204	Mt Hood Academy 183	C. Cf's used
Invoice	04/01/2016	12-6573	Mt Hood Academy 183	C. Cf's used
Invoice	07/01/2016	12-6940	Mt Hood Academy 183	C. Cf's used
Invoice	10/01/2016	12-7313	Mt Hood Academy 183	C. Cf's used
Invoice	01/01/2016	12-6205	Mt Hood Holding 086	C. Cf's used
Invoice	04/01/2016	12-6574	Mt Hood Holding 086	C. Cf's used
Invoice	07/01/2016	12-6941	Mt Hood Holding 086	C. Cf's used
Invoice	10/01/2016	12-7314	Mt Hood Holding 086	C. Cf's used
Invoice	01/01/2016	12-6210	Multorpor Lodge 363	C. Cf's used
Invoice	04/01/2016	12-6579	Multorpor Lodge 363	C. Cf's used
Invoice	07/01/2016	12-6946	Multorpor Lodge 363	C. Cf's used
Invoice	10/01/2016	12-7319	Multorpor Lodge 363	C. Cf's used
Invoice	01/01/2016	12-6227	Oregon Travel Exp. 035	C. Cf's used
Invoice	04/01/2016	12-6596	Oregon Travel Exp. 035	C. Cf's used
Invoice	07/01/2016	12-6963	Oregon Travel Exp. 035	C. Cf's used
Invoice	10/01/2016	12-7336	Oregon Travel Exp. 035	C. Cf's used
Invoice	01/01/2016	12-6230	Palmer Lodge 037	C. Cf's used
Invoice	04/01/2016	12-6598	Palmer Lodge 037	C. Cf's used
Invoice	07/01/2016	12-6965	Palmer Lodge 037	C. Cf's used
Invoice	10/01/2016	12-7338	Palmer Lodge 037	C. Cf's used
Invoice	01/01/2016	12-6323	Trails Club 056	C. Cf's used
Invoice	04/01/2016	12-6692	Trails Club 056	C. Cf's used
Invoice	07/01/2016	12-7060	Trails Club 056	C. Cf's used
Invoice	10/01/2016	12-7434	Trails Club 056	C. Cf's used

Invoice	01/01/2016	12-6306	Summit Ski Area	367.1	MH 2"
Invoice	04/01/2016	12-6676	Summit Ski Area	367.1	MH 2"
Invoice	07/01/2016	12-7044	Summit Ski Area	367.1	MH 2"
Invoice	10/01/2016	12-7418	Summit Ski Area	367.1	MH 2"



Quarterly base rate	461.2 · Commercial Metered
Quarterly base rate	461.2 · Commercial Metered
Quarterly base rate	461.2 · Commercial Metered
Quarterly base rate	461.2 · Commercial Metered

Split	Qty - CF	Debit	Credit	Staff Checker
141 · Accounts Receivable	1,255.00		14.06	\$14.06
141 · Accounts Receivable	1,255.00		14.06	\$14.06
141 · Accounts Receivable	1,255.00		14.06	\$14.06
141 · Accounts Receivable	1,492.50		16.72	\$16.72
141 · Accounts Receivable	3,181.82		35.64	\$35.64
141 · Accounts Receivable	3,181.82		35.64	\$35.64
141 · Accounts Receivable	3,181.82		35.64	\$35.64
141 · Accounts Receivable	4,241.31		47.50	\$47.50
141 · Accounts Receivable	29,532.50		330.76	\$330.76
141 · Accounts Receivable	29,532.50		330.76	\$330.76
141 · Accounts Receivable	29,532.50		330.76	\$330.76
141 · Accounts Receivable	28,240.00		316.29	\$316.29
141 · Accounts Receivable	2,256.00		25.27	\$25.27
141 · Accounts Receivable	2,256.00		25.27	\$25.27
141 · Accounts Receivable	2,256.00		25.27	\$25.27
141 · Accounts Receivable	1,808.16		20.25	\$20.25
141 · Accounts Receivable	5,702.50		63.87	\$63.87
141 · Accounts Receivable	5,702.50		63.87	\$63.87
141 · Accounts Receivable	5,702.50		63.87	\$63.87
141 · Accounts Receivable	12,427.50		139.19	\$139.19
141 · Accounts Receivable	17,805.00		199.42	\$199.42
141 · Accounts Receivable	17,805.00		199.42	\$199.42
141 · Accounts Receivable	17,805.00		199.42	\$199.42
141 · Accounts Receivable	18,445.00		206.58	\$206.58
141 · Accounts Receivable	45,525.00		509.88	\$509.88
141 · Accounts Receivable	45,525.00		509.88	\$509.88
141 · Accounts Receivable	45,525.00		509.88	\$509.88
141 · Accounts Receivable	49,520.00		554.62	\$554.62
141 · Accounts Receivable	8,841.00		99.02	\$99.02
141 · Accounts Receivable	8,841.00		99.02	\$99.02
141 · Accounts Receivable	8,841.00		99.02	\$99.02
141 · Accounts Receivable	9,992.98		111.92	\$111.92
141 · Accounts Receivable	7,480.00		83.78	\$83.78
141 · Accounts Receivable	7,480.00		83.78	\$83.78
141 · Accounts Receivable	7,480.00		83.78	\$83.78
141 · Accounts Receivable	26,842.50		300.64	\$300.64
	<b>cf per Co</b>		<b>Total Billed</b>	<b>Total</b>
	<b>517,746.41</b>		<b>5,798.81</b>	<b>\$5,798.76</b>
	<b>5177</b>			
<b>12</b>	<b>\$5,798.76</b>			
<b>hecker</b>	<b>\$0.05</b>			

141 · Accounts Receivable	1.00		89.43	no consumption
141 · Accounts Receivable	1.00		89.43	no consumption
141 · Accounts Receivable	1.00		89.43	no consumption
141 · Accounts Receivable	1.00		89.43	no consumption



Type	Date	Num	Name	Item
Invoice	10/01/2016	12-7122	Best Western Mt Hood Inn 006	C. Cf's used

**Consumption billed for only one quarter and is not**



Item Description	Account	Split	Qty -CF
Water consumption for the quarter	461.2 · Commercial Metered	141 · Acco	219.25
			<b>cf per Co</b>
	<b>Summarized CF usage for CM 6 inch customers</b>		<b>219.25</b>
	<b>Per units (cf/100)</b>		<b>2</b>
	<b>Staff Checker units * \$1.12</b>		<b>\$2.46</b>
	<b>Difference billed/staff checker</b>		<b>\$0.00</b>

**not viable for 6 inch hotel customer**

Debit	Credit
	2.46

Type	Date	Num	Name	Item
Invoice	01/01/2016	12-6132	Huckelberry / Motel 279	C. Cf's used
Invoice	04/01/2016	12-6500	Huckelberry / Motel 279	C. Cf's used
Invoice	07/01/2016	12-6867	Huckelberry / Motel 279	C. Cf's used
Invoice	10/01/2016	12-7240	Huckelberry / Motel 279	C. Cf's used
Invoice	03/12/2016	12-6361	Skibowl E 361	C. Cf's used
Invoice	03/12/2016	12-6361	Skibowl E 361	C. Cf's used

**Only two quarters of usage for Custo**

Item Description	Account	Split	Qty -CF	Debit
Water consumption for the quarter	461.2 · Commercial Met	141 · Account	8,326.75	
Water consumption for the quarter	461.2 · Commercial Met	141 · Account	8,326.75	
Water consumption for the quarter	461.2 · Commercial Met	141 · Account	8,326.75	
Water consumption for the quarter	461.2 · Commercial Met	141 · Account	9,905.75	
Water consumption for the quarter	461.2 · Commercial Met	141 · Account	126,985.00	
Water consumption for the quarter	461.2 · Commercial Met	141 · Account	126,985.00	
			<b>cf per Co</b>	<b>Total</b>
<b>Summarized CF usage for CM 4 inch customers</b>			<b>288,856.00</b>	
	<b>Per units (cf/100)</b>		<b>2889</b>	
	<b>Staff Checker units * \$1.12</b>		<b>\$3,235.19</b>	
	<b>Difference billed/staff checker</b>		<b>\$0.01</b>	

**mer: Skibowl E 361, not four.**

Credit		Staff Checker	Difference
93.26		\$93.26	\$0.00
93.26		\$93.26	\$0.00
93.26		\$93.26	\$0.00
110.94		\$110.94	\$0.00
1,422.23		\$1,422.23	\$0.00
1,422.23		\$1,422.23	\$0.00
<b>3,235.18</b>	<b>Total</b>	<b>\$3,235.19</b>	<b>\$0.01</b>

Invoice	10/01/2016	12-7413	20/20 Properties 330	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.1 · Residential Metered	141 · Accounts Receivable	0.00	0.00		No consumption
Invoice	01/01/2016	12-6224	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	10.00		475.80	No consumption-10 units?
Invoice	04/01/2016	12-6593	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	10.00		475.80	No consumption-10 units?
Invoice	07/01/2016	12-6960	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	10.00		475.80	No consumption-10 units?
Invoice	10/01/2016	12-7333	ODOT Compound 249	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	10.00		475.80	No consumption-10 units?
Invoice	10/01/2016	12-7375	Sandler, Scott & Janet 323	R. Cf's used	Water consumption for the quarter (\$1.12/100Cf)	461.1 · Residential Metered	141 · Accounts Receivable	1,354.50		15.17	Billed all 4 quarters for base rate, but only this month for consumption
Invoice	01/01/2016	12-6281	Skowhede / Trails Out 157	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00		47.58	No consumption
Invoice	04/01/2016	12-6651	Skowhede / Trails Out 157	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00		47.58	No consumption
Invoice	07/01/2016	12-7018	Skowhede / Trails Out 157	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00		47.58	No consumption
Invoice	10/01/2016	12-7392	Skowhede / Trails Out 157	RM 3/4"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00		47.58	No consumption

Type	Date	Num	Name	Item
Invoice	01/01/2016	12-6013	Beighley, Harold 314	R. Cf's used
Invoice	04/01/2016	12-6381	Beighley, Harold 314	R. Cf's used
Invoice	07/01/2016	12-6748	Beighley, Harold 314	R. Cf's used
Invoice	10/01/2016	12-7118	Beighley, Harold 314	R. Cf's used
Invoice	01/01/2016	12-6015	Bersaas, Eric & Ann 318	R. Cf's used
Invoice	04/01/2016	12-6383	Bersaas, Eric & Ann 318	R. Cf's used
Invoice	07/01/2016	12-6750	Bersaas, Eric & Ann 318	R. Cf's used
Invoice	10/01/2016	12-7121	Bersaas, Eric & Ann 318	R. Cf's used
Invoice	01/01/2016	12-6019	Bissonnette, John 342	R. Cf's used
Invoice	04/01/2016	12-6387	Bissonnette, John 342	R. Cf's used
Invoice	07/01/2016	12-6754	Bissonnette, John 342	R. Cf's used
Invoice	10/01/2016	12-7125	Bissonnette, John 342	R. Cf's used
Invoice	01/01/2016	12-6058	Darley, Jason 360	R. Cf's used
Invoice	04/01/2016	12-6427	Darley, Jason 360	R. Cf's used
Invoice	07/01/2016	12-6794	Darley, Jason 360	R. Cf's used
Invoice	10/01/2016	12-7165	Darley, Jason 360	R. Cf's used
Invoice	01/01/2016	12-6076	Gaither, Otto & Laurie 172.1	R. Cf's used
Invoice	04/01/2016	12-6444	Gaither, Otto & Laurie 172.1	R. Cf's used
Invoice	07/01/2016	12-6811	Gaither, Otto & Laurie 172.1	R. Cf's used
Invoice	10/01/2016	12-7183	Gaither, Otto & Laurie 172.1	R. Cf's used
Invoice	01/01/2016	12-6084	Godon, Peter & Krista 161	R. Cf's used
Invoice	04/01/2016	12-6452	Godon, Peter & Krista 161	R. Cf's used
Invoice	07/01/2016	12-6819	Godon, Peter & Krista 161	R. Cf's used
Invoice	10/01/2016	12-7191	Godon, Peter & Krista 161	R. Cf's used
Invoice	01/01/2016	12-6112	Hargreaves, Craig & Kim 339	R. Cf's used
Invoice	04/01/2016	12-6480	Hargreaves, Craig & Kim 339	R. Cf's used
Invoice	07/01/2016	12-6847	Hargreaves, Craig & Kim 339	R. Cf's used
Invoice	10/01/2016	12-7220	Hargreaves, Craig & Kim 339	R. Cf's used
Invoice	01/01/2016	12-6139	Johnson, Carol 358	R. Cf's used
Invoice	04/01/2016	12-6508	Johnson, Carol 358	R. Cf's used
Invoice	07/01/2016	12-6875	Johnson, Carol 358	R. Cf's used
Invoice	10/01/2016	12-7248	Johnson, Carol 358	R. Cf's used
Invoice	01/01/2016	12-6153	Klebleev, Konstantin 150	R. Cf's used
Invoice	04/01/2016	12-6522	Klebleev, Konstantin 150	R. Cf's used
Invoice	07/01/2016	12-6889	Klebleev, Konstantin 150	R. Cf's used
Invoice	10/01/2016	12-7262	Klebleev, Konstantin 150	R. Cf's used





Split	Qty	Debit
141 · Accounts Receivable	902.75	
141 · Accounts Receivable	902.75	
141 · Accounts Receivable	902.75	
141 · Accounts Receivable	975.25	
141 · Accounts Receivable	256.50	
141 · Accounts Receivable	256.50	
141 · Accounts Receivable	256.50	
141 · Accounts Receivable	304.50	
141 · Accounts Receivable	550.75	
141 · Accounts Receivable	550.75	
141 · Accounts Receivable	550.75	
141 · Accounts Receivable	62.50	
141 · Accounts Receivable	1,507.75	
141 · Accounts Receivable	1,507.75	
141 · Accounts Receivable	1,507.75	
141 · Accounts Receivable	1,650.50	
141 · Accounts Receivable	189.50	
141 · Accounts Receivable	189.50	
141 · Accounts Receivable	189.50	
141 · Accounts Receivable	353.75	
141 · Accounts Receivable	332.00	
141 · Accounts Receivable	332.00	
141 · Accounts Receivable	332.00	
141 · Accounts Receivable	489.75	
141 · Accounts Receivable	699.50	
141 · Accounts Receivable	699.50	
141 · Accounts Receivable	699.50	
141 · Accounts Receivable	1,823.75	
141 · Accounts Receivable	1,235.50	
141 · Accounts Receivable	1,235.50	
141 · Accounts Receivable	1,235.50	
141 · Accounts Receivable	1,530.00	
141 · Accounts Receivable	160.25	
141 · Accounts Receivable	160.25	
141 · Accounts Receivable	160.25	
141 · Accounts Receivable	239.75	
	<b>Per CF</b>	
<b>Initial 3/4 inch Consumption</b>	<b>20,175.75</b>	
<b>Consumption by Unit (CF/100)</b>	<b>202</b>	
<b>Consumption \$\$ per Usage (Unit*1.12)</b>	<b>\$225.97</b>	
<b>Difference between Billed Amt/usage</b>	<b>\$39.28</b>	
<b>Consumption Difference</b>	<b>3507.29</b>	

Credit		Staff Checker	Difference
8.49		\$10.11	\$1.62
8.49		\$10.11	\$1.62
8.49		\$10.11	\$1.62
9.18		\$10.92	\$1.74
3.18		\$2.87	-\$0.31
3.18		\$2.87	-\$0.31
3.18		\$2.87	-\$0.31
3.78		\$3.41	-\$0.37
6.17		\$6.17	\$0.00
6.17		\$6.17	\$0.00
6.17		\$6.17	\$0.00
0.70		\$0.70	\$0.00
16.89		\$16.89	\$0.00
16.89		\$16.89	\$0.00
16.89		\$16.89	\$0.00
18.49		\$18.49	\$0.00
2.12		\$2.12	\$0.00
2.12		\$2.12	\$0.00
2.12		\$2.12	\$0.00
3.96		\$3.96	\$0.00
3.75		\$3.72	-\$0.03
3.75		\$3.72	-\$0.03
3.75		\$3.72	-\$0.03
5.53		\$5.49	-\$0.04
8.02		\$7.83	-\$0.19
8.02		\$7.83	-\$0.19
8.02		\$7.83	-\$0.19
20.90		\$20.43	-\$0.47
11.51		\$13.84	\$2.33
11.51		\$13.84	\$2.33
11.51		\$13.84	\$2.33
14.26		\$17.14	\$2.88
1.79		\$1.79	\$0.00
1.79		\$1.79	\$0.00
1.79		\$1.79	\$0.00
2.69		\$2.69	\$0.00
<b>\$\$ Billed</b>	<b>Total</b>	<b>\$279.25</b>	<b>\$14.00</b>
<b>\$265.25</b>			

	Date	Num	Name	Item
Invoice	01/01/2016	12-6138	Jensen, Kenneth 286	R. Cf's used
Invoice	04/01/2016	12-6507	Jensen, Kenneth 286	R. Cf's used
Invoice	07/01/2016	12-6874	Jensen, Kenneth 286	R. Cf's used
Invoice	10/01/2016	12-7247	Jensen, Kenneth 286	R. Cf's used
Invoice	01/01/2016	12-6266	Santilli, Lynn 312	R. Cf's used
Invoice	04/01/2016	12-6635	Santilli, Lynn 312	R. Cf's used
Invoice	07/01/2016	12-7002	Santilli, Lynn 312	R. Cf's used
Invoice	10/01/2016	12-7376	Santilli, Lynn 312	R. Cf's used

Item Description	Account
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
	<b>Residenti</b>
	<b>Staff Checker per Unit</b>

Split	Qty	Debit	Credit	
141 · Accounts Receivable	1,292.00		14.47	
141 · Accounts Receivable	1,292.00		14.47	
141 · Accounts Receivable	1,292.00		14.47	
141 · Accounts Receivable	1,031.08		11.55	
141 · Accounts Receivable	166.50		1.86	
141 · Accounts Receivable	166.50		1.86	
141 · Accounts Receivable	166.50		1.86	
141 · Accounts Receivable	121.00		1.36	
	<b>Per CF</b>		<b>\$\$ Billed</b>	<b>Total</b>
<b>al 1 inch Consumption</b>	<b>5,527.58</b>		<b>\$61.90</b>	
<b>Consumption by Unit (CF/100)</b>	<b>55</b>			
<b>Consumption \$\$ per Usage (Unit*1.12)</b>	<b>\$61.91</b>			
<b>Difference between Billed Amt/usage</b>	<b>-\$0.01</b>			
<b>Consumption Difference</b>	<b>-0.79</b>			

<b>Staff Checker</b>	<b>Difference</b>
<b>\$14.47</b>	<b>\$0.00</b>
<b>\$14.47</b>	<b>\$0.00</b>
<b>\$14.47</b>	<b>\$0.00</b>
<b>\$11.55</b>	<b>\$0.00</b>
<b>\$1.86</b>	<b>\$0.00</b>
<b>\$1.86</b>	<b>\$0.00</b>
<b>\$1.86</b>	<b>\$0.00</b>
<b>\$1.36</b>	<b>\$0.00</b>
<b>\$61.91</b>	<b>\$0.01</b>

	Date	Num	Name	Item
Invoice	01/01/2016	12-6159	Lampi, Jeanne 362	R. Cf's used
Invoice	04/01/2016	12-6528	Lampi, Jeanne 362	R. Cf's used
Invoice	07/01/2016	12-6895	Lampi, Jeanne 362	R. Cf's used
Invoice	10/01/2016	12-7268	Lampi, Jeanne 362	R. Cf's used

Item Description	Account
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
Water consumption for the qua	461.1 · Residential Metered
	<b>Residential</b>
	<b>Staff Checker per Unit</b>



Split	Qty	Debit	Credit
141 · Accounts Receivable	2,097.50		23.49
141 · Accounts Receivable	2,097.50		23.49
141 · Accounts Receivable	2,097.50		23.49
141 · Accounts Receivable	2,932.50		32.84
	<b>Per CF</b>		<b>\$\$ Billed</b>
<b>Total 1.5 inch Consumption</b>	<b>9,225.00</b>		<b>\$103.31</b>
<b>Consumption by Unit (CF/100)</b>	<b>92</b>		
<b>Consumption \$\$ per Usage (Unit*1.12)</b>	<b>\$103.32</b>		
<b>Difference between Billed Amt/usage</b>	<b>-\$0.01</b>		
<b>Consumption Difference</b>	<b>-0.89</b>		

**Total**

<b>Staff Checker</b>	<b>Difference</b>
<b>\$23.49</b>	<b>\$0.00</b>
<b>\$23.49</b>	<b>\$0.00</b>
<b>\$23.49</b>	<b>\$0.00</b>
<b>\$32.84</b>	<b>\$0.00</b>
<b>\$103.32</b>	<b>\$0.01</b>

	Date	Num	Name	Item	Item Description
Invoice	01/01/2016	12-6002	Allred, Tim & Laurie 341	R. Cf's used	Water consumption for th
Invoice	04/01/2016	12-6370	Allred, Tim & Laurie 341	R. Cf's used	Water consumption for th
Invoice	07/01/2016	12-6737	Allred, Tim & Laurie 341	R. Cf's used	Water consumption for th
Invoice	10/01/2016	12-7107	Allred, Tim & Laurie 341	R. Cf's used	Water consumption for th
Invoice	01/01/2016	12-6149	Kelly, Kevin 335	R. Cf's used	Water consumption for th
Invoice	04/01/2016	12-6518	Kelly, Kevin 335	R. Cf's used	Water consumption for th
Invoice	07/01/2016	12-6885	Kelly, Kevin 335	R. Cf's used	Water consumption for th
Invoice	10/01/2016	12-7258	Kelly, Kevin 335	R. Cf's used	Water consumption for th
Invoice	01/01/2016	12-6216	Nantz, John 344	R. Cf's used	Water consumption for th
Invoice	04/01/2016	12-6585	Nantz, John 344	R. Cf's used	Water consumption for th
Invoice	07/01/2016	12-6952	Nantz, John 344	R. Cf's used	Water consumption for th
Invoice	10/01/2016	12-7325	Nantz, John 344	R. Cf's used	Water consumption for th
Invoice	01/01/2016	12-6292	Sprunk, Eric 336	R. Cf's used	Water consumption for th
Invoice	04/01/2016	12-6662	Sprunk, Eric 336	R. Cf's used	Water consumption for th
Invoice	07/01/2016	12-7030	Sprunk, Eric 336	R. Cf's used	Water consumption for th
Invoice	10/01/2016	12-7404	Sprunk, Eric 336	R. Cf's used	Water consumption for th

Account	Split
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
461.1 · Residential Metered	141 · Accounts Receivable
<b>Residential 2 inch Consumption</b>	
<b>Staff Checker per Unit</b>	<b>Consumption by Unit (CF/100)</b>
	<b>Consumption \$\$ per Usage (Unit*1.12)</b>
	<b>Difference between Billed Amt/usage</b>
	<b>Consumption Difference</b>

Qty	Debit	Credit		Staff Checker	Difference
160.00		1.79		\$1.79	\$0.00
160.00		1.79		\$1.79	\$0.00
160.00		1.79		\$1.79	\$0.00
322.50		3.61		\$3.61	\$0.00
45.00		0.50		\$0.50	\$0.00
45.00		0.50		\$0.50	\$0.00
45.00		0.50		\$0.50	\$0.00
75.00		0.84		\$0.84	\$0.00
180.00		2.02		\$2.02	\$0.00
180.00		2.02		\$2.02	\$0.00
180.00		2.02		\$2.02	\$0.00
305.00		3.42		\$3.42	\$0.00
175.00		1.96		\$1.96	\$0.00
175.00		1.96		\$1.96	\$0.00
175.00		1.96		\$1.96	\$0.00
1,217.50		13.64		\$13.64	\$0.00
<b>Per CF</b>		<b>\$\$ Billed</b>	<b>Total</b>	<b>\$40.32</b>	<b>\$0.00</b>
<b>3,600.00</b>		<b>\$40.32</b>			
<b>36</b>					
<b>\$40.32</b>					
<b>\$0.00</b>					
<b>0.00</b>					

UW 174 Staff ROE Summary

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
<b>Composite</b>				100%	4.41%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	100.0%	4.80%

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity							
	X	CBO	4.00%	Composite	4.41%	Historical	4.80%
1	Staff Screen	6.79%		7.15%		7.50%	
2	Low Cap (Small Cap & Mid Cap) Sensitivity	6.62%		6.99%		7.38%	
3	Small Cap Sensitivity	6.91%		7.27%		7.62%	

Hamada to Right →

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity (Hamada Adjusted)							
	X	CBO	4.00%	Composite	4.41%	Historical	4.80%
1	Staff Screen	7.22%		7.58%		7.93%	
2	Low Cap (Small Cap & Mid Cap) Sensitivity	7.16%		7.53%		7.92%	
3	Small Cap Sensitivity	7.47%		7.83%		8.18%	

1  
2  
3

Model Y: 3 Stage DCF - Dividend Growth with Terminal Value as Sales based upon EPS Growth and Terminal Stock Sale							
	Y	CBO	4.00%	Composite	4.41%	Historical	4.80%
1	Staff Screen	7.34%		7.67%		7.98%	
2	Low Cap (Small Cap & Mid Cap) Sensitivity	7.22%		7.55%		7.86%	
3	Small Cap Sensitivity	7.58%		7.90%		8.21%	

Hamada to Right →

Model Y: 3 Stage DCF - Dividend & EPS Growth with Terminal Value as Stock Sale (Hamada Adjusted)							
	Y	CBO	4.00%	Composite	4.41%	Historical	4.80%
1	Staff Screen	7.77%		8.10%		8.41%	
2	Low Cap (Small Cap & Mid Cap) Sensitivity	7.76%		8.09%		8.40%	
3	Small Cap Sensitivity	8.14%		8.46%		8.77%	

1  
2  
3

- ❖ Hamada Adjustments to Right Fully Account for Differences in the Amount of Debt in Capital Structure
- ❖ Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by :
- ❖ Sensitivity Study to Account for Difference in Capitalization Size -- Maximum Upward Shift:

Above Right

Informed Range of Model 8.41% to 12.5 bps  
36.0 bps  
9.25% ROE

Point ROE Recommendation 9.25% ROE

Government Camp Water  
Peer Screen

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		<b>Screen:</b>		1 Water Utilities Followed by Value Line (VL) Passing Staff Screen 2 " that are Small & Medium Capitalization / VL See Note Below 3 " that are Small Capitalization / VL											
<b>Water Utility</b>															
<b>Government Camp Water (GCW)</b>															
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	VL Corporate Name Gas Utility	NYSE NSDQ Ticker	VL 4/21/2018 Beta	Yahoo Fin. 4/21/2018 Beta	Yahoo Fin. 4/21/2018 Mkt Cap \$ Billions	VL 4/21/2018 Mkt Cap \$ Billions	Value Line Water Utility w VL Beta < 1 4/21/2018	SNL or VL No Div Declines 5 years	VL 2017 LT Debt < 56% of Capital	VL 2021-2023 LT Debt % of Capital	VL 2017 Common Equity % of Capital	VL Preferred Stock of Capital
1	American States	Yes	Yes	American States Water Company	AWR	0.65	-0.20	2.03	1.90	Yes	Pass	37.7%	46.0%	62.3%	0.0%
2	American Water	No	No	American Water Works Company, Inc.	AWK	0.65	0.05	15.09	15.50	Yes	Fail	54.6%	57.5%	45.3%	0.1%
3	Aqua America	Yes	No	Aqua America, Inc.	WTR	0.70	0.24	6.08	6.00	Yes	Pass	50.1%	53.5%	49.4%	0.5%
4	California Water	Yes	Yes	California Water Service Group	CWT	0.75	0.26	1.90	1.80	Yes	Pass	42.7%	42.0%	57.3%	0.0%
5	Connecticut Water	Merger	Merger	Connecticut Water Services, Inc.	CTWS	0.65	-0.42	0.79	0.75	Yes	Pass	46.3%	45.0%	53.7%	0.0%
6	Consolidated Water	No	No	Consolidated Water Co. Ltd.	CWCO	0.95	0.43	0.21	0.20	Yes	Pass	0.0%	0.0%	99.0%	1.0%
7	Middlesex Water	Yes	Yes	Middlesex Water Company	MSEX	0.80	0.14	0.66	0.60	Yes	Pass	37.5%	37.0%	61.8%	0.7%
8	SJW	Merger	Merger	SJW Group	SJW	0.70	-0.03	1.16	1.10	Yes	Pass	48.2%	48.0%	51.8%	0.0%
9	York Water	Yes	Yes	The York Water Company	YORW	0.80	0.34	0.42	0.40	Yes	Pass	43.0%	42.5%	57.0%	0.0%
<b>TOTAL PEERS</b>		<b>7</b>	<b>6</b>	<i>Note: Staff further segregates VL Small-Cap in sensitivity modeling to test the effects of Capitalization Size on modeling results.</i>											

Government Camp Water  
Peer Screen

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Div. Growth Rate > 0%	Notes	Screen #
1	American States	Yes	Yes	Pass	Also has 11 contracts for military installations	1
2	American Water	No	No	Pass	Strategy: Growth through acquisitions and controlling expenses.	2
3	Aqua America	Yes	No	Pass	Key Focus on infrastructure upgrades	3
4	California Water	Yes	Yes	Pass	Substantial run up on Stock Price	4
5	Connecticut Water	Merger	Merger	Pass	Both Eversource Energy and SJW have bid to buy CT Water. CT Water favors SJW Likely M&A	5
6	Consolidated Water	No	No	Fail	Flat Dividend Growth, Higher Risk International Desalination Projects	6
7	Middlesex Water	Yes	Yes	Pass	Also operates water and wastewater services and upgrades under contract with cities and private clients	7
8	SJW	Merger	Merger	Pass	Both Eversource Energy and SJW have bid to buy CT Water. CT Water favors SJW Likely M&A	8
9	York Water	Yes	Yes	Pass	Oldest Water Utility in US - in continuous operation since 1816.	9
TOTAL PEERS		7	6			



Historical and Near Term  
VL Dividends, and  
VL Earnings per Share

GCW Water Peer Dividends

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2012 Yr	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2013 Yr	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Yr	2018 Yr	
1	1	American States	Yes	Mid-Cap	AWR	0.64	0.1775	0.1775	0.2025	0.2025	0.76	0.2025	0.2025	0.213	0.213	0.83	0.213	0.213	0.224	0.224	0.87	0.224	0.224	0.224	0.242	0.91	0.87	0.99	1.07
2	3	Aqua America	Yes	Large-Cap	WTR	0.54	0.14	0.14	0.152	0.152	0.58	0.152	0.152	0.165	0.165	0.63	0.165	0.165	0.178	0.178	0.69	0.178	0.178	0.1913	0.1913	0.74	0.69	0.79	0.85
3	4	California Water	Yes	Mid-Cap	CWT	0.63	0.16	0.16	0.16	0.16	0.64	0.1625	0.1625	0.1625	0.1625	0.65	0.1675	0.1675	0.1675	0.1675	0.67	0.1725	0.1725	0.1725	0.1725	0.69	0.67	0.72	0.75
4	5	Connecticut Water	Merger	Merger	CTWS	0.96	0.2425	0.2425	0.2475	0.2475	0.98	0.2475	0.2475	0.2575	0.2575	1.01	0.2575	0.2575	0.2675	0.2675	1.05	0.2675	0.2825	0.2825	0.2825	1.12	1.06	1.18	1.24
5	7	Middlesex Water	Yes	Small-Cap	MSEX	0.74	0.19	0.1875	0.1875	0.19	0.75	0.19	0.19	0.19	0.1925	0.76	0.1925	0.1925	0.1925	0.19875	0.78	0.19875	0.19875	0.19875	0.21125	0.81	0.78	0.86	0.91
6	8	SJW	Merger	Merger	SJW	0.71	0.1825	0.1825	0.1825	0.1825	0.73	0.1875	0.1875	0.1875	0.1875	0.75	0.195	0.195	0.195	0.195	0.78	0.2025	0.2025	0.2025	0.2025	0.81	0.78	1.04	1.12
7	9	York Water	Yes	Small Cap	YORW	0.54	0.14	0.138	0.138	0.138	0.55	0.1431	0.1431	0.1431	0.1431	0.57	0.1495	0.1495	0.1495	0.1555	0.60	0.1555	0.1555	0.1555	0.1602	0.63	0.60	0.65	0.70
TOTAL		7	6																										

(Low-Cap)

GCW Water Peer EPS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2013 Yr	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 Yr	2018 Q1	2018 Q2	
1	1	American States	Yes	Mid-Cap	AWR	1.61	0.28	0.39	0.54	0.36	1.57	0.32	0.41	0.56	0.31	1.60	0.28	0.45	0.59	0.30	1.62	1.60	0.34	0.62	0.57	0.35	1.88	0.35	0.50
2	3	Aqua America	Yes	Large-Cap	WTR	1.16	0.24	0.31	0.38	0.27	1.20	0.27	0.32	0.38	0.17	1.14	0.29	0.34	0.41	0.28	1.32	1.22	0.28	0.34	0.43	0.30	1.35	0.30	0.35
3	4	California Water	Yes	Mid-Cap	CWT	1.02	(0.11)	0.36	0.70	0.24	1.19	0.03	0.21	0.52	0.18	0.94	(0.02)	0.24	0.48	0.31	1.01	1.05	0.02	0.39	0.70	0.29	1.40	0.08	0.42
4	5	Connecticut Water	Merger	Merger	CTWS	1.66	0.27	0.67	0.76	0.22	1.92	0.28	0.77	0.79	0.20	2.04	0.28	0.89	0.84	0.07	2.08	2.01	0.36	0.73	0.90	0.14	2.13	0.37	0.77
5	7	Middlesex Water	Yes	Small-Cap	MSEX	1.03	0.20	0.29	0.42	0.22	1.13	0.22	0.31	0.41	0.28	1.22	0.29	0.36	0.54	0.19	1.38	1.24	0.27	0.33	0.46	0.32	1.38	0.29	0.37
6	8	SJW	Merger	Merger	SJW	1.12	0.04	0.34	1.88	0.28	2.54	0.23	0.36	0.46	0.80	1.85	0.16	0.82	0.92	0.67	2.57	2.32	0.18	0.9	0.94	0.84	2.86	0.27	0.90
7	9	York Water	Yes	Small Cap	YORW	0.75	0.16	0.22	0.23	0.28	0.89	0.20	0.22	0.28	0.27	0.97	0.19	0.23	0.27	0.23	0.92	0.93	0.22	0.25	0.30	0.28	1.05	0.23	0.26
TOTAL		8	6																										

Historical and Near Term  
VL Dividends, and  
VL Earnings per Share

GCW Water Peer Dividends

1	2	3	4	5	30	31	32	33	34	35			
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2019 Yr	2020 Yr	2021 Yr	2022 Yr	VL Avg 2020-22 / Yr	Div. Growth 2020-22 vs. 2014-16	Screen #		
1	American States	Yes	Mid-Cap	AWR	1.16	1.25	1.35	1.45	1.35	7.5%	1	1	
2	Aqua America	Yes	Large-Cap	WTR	0.94	1.03	1.14	1.25	1.14	8.8%	3	2	
3	California Water	Yes	Mid-Cap	CWT	0.81	0.88	0.95	1.02	0.95	6.0%	4	3	
4	Connecticut Water	Merger	Merger	CTWS	1.31	1.38	1.45	1.52	1.45	5.4%	5	4	
5	Middlesex Water	Yes	Small-Cap	MSEX	0.96	1.01	1.06	1.11	1.06	5.2%	7	5	
6	SJW	Merger	Merger	SJW	1.19	1.27	1.36	1.45	1.36	9.7%	8	6	
7	York Water	Yes	Small Cap	YORW	0.77	0.84	0.92	1.00	0.92	7.4%	9	7	
TOTAL		7	6						VL H2O Screen	7.0%	Mean		
					= Small- & Mid-Cap)				VL (Low Cap) H2O Screen	6.5%			
									VL Small-Cap) H2O Screen	6.3%			

GCW Water Peer EPS

1	2	3	4	5	30	31	32	33	34	35	36	37	38		
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2018 Q3	2018 Q4	2018 Yr	2019 Yr	2020 Yr	2021 Yr	2022 Yr	VL Avg 2020 - 22 / Yr	EPS Growth 2020-22 vs. 2014-16	Screen #	
1	American States	Yes	Mid-Cap	AWR	0.60	0.40	1.85	1.99	2.13	2.29	2.45	2.29	6.2%	1	1
2	Aqua America	Yes	Large-Cap	WTR	0.44	0.31	1.40	1.52	1.66	1.81	1.95	1.81	6.7%	3	2
3	California Water	Yes	Mid-Cap	CWT	0.72	0.33	1.55	1.63	1.72	1.81	1.90	1.81	9.6%	4	3
4	Connecticut Water	Merger	Merger	CTWS	0.92	0.24	2.30	2.44	2.58	2.74	2.90	2.74	5.3%	5	4
5	Middlesex Water	Yes	Small-Cap	MSEX	0.55	0.34	1.55	1.67	1.81	1.96	2.10	1.96	7.8%	7	5
6	SJW	Merger	Merger	SJW	1.00	0.68	2.85	2.99	3.14	3.30	3.45	3.30	6.0%	8	6
7	York Water	Yes	Small Cap	YORW	0.32	0.29	1.10	1.19	1.29	1.40	1.51	1.40	7.1%	9	7
TOTAL		8	6						VL H2O Screen		7.5%	Mean			
					(Low-Cap = Small- & Mid-Cap)				VL (Low-Cap) H2O Screen		7.7%				

GCW GRC Staff Hamada Adjustments		Yahoo Finance																			
		\$ Stock Closing Price 1st Trading Day of Month			3-Day Avg \$ Stock Price	Div Yield at Recent Price	VL 2017 Return on Common Equity	VL 2017 Cap Structure		VL Beta	2018 VL Tax Rate	Hamada Unlevered Beta	Relevered Beta Equity at 50.0%	Equity Risk Premium	Hamada Adjustment Equity At 50.0%	Screen #					
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker				Jan. 1/1/2018	Feb. 2/1/2018							Mar. 3/1/2018	% Long Term Debt	% Common Equity	Screen #	Screen #	
1	1	American States	Yes	Mid-Cap	AWR	55.22	53.12	53.06	53.80	1.7%	13.1%	37.7	62.3	0.75	23.0%	0.51	0.91	4.20%	0.65%	1	1
2	3	Aqua America	Yes	Large-Cap	WTR	36.21	34.19	34.06	34.82	2.1%	12.2%	50.6	49.4	0.70	9.0%	0.36	0.69	4.20%	-0.03%	3	2
3	4	California Water	Yes	Mid-Cap	CWT	40.70	37.95	37.25	38.63	1.8%	9.7%	42.7	57.3	0.75	21.0%	0.47	0.85	4.20%	0.40%	4	3
4	5	Connecticut Water	Merger	Merger	CTWS	53.05	51.63	60.53	55.07	2.0%	8.8%	46.3	53.7	0.65	21.0%	0.39	0.69	4.20%	0.18%	5	4
5	7	Middlesex Water	Yes	Small-Cap	MSEX	37.66	35.44	36.70	36.60	2.2%	9.8%	37.5	61.8	0.80	21.0%	0.54	0.97	4.20%	0.71%	7	5
6	8	SJW	Merger	Merger	SJW	59.84	52.94	52.71	55.16	1.5%	12.8%	48.2	51.8	0.70	21.0%	0.40	0.72	4.20%	0.09%	8	6
7	9	York Water	Yes	Small Cap	YORW	31.65	28.10	27.45	29.07	2.2%	10.9%	43.0	57.0	0.80	21.0%	0.50	0.90	4.20%	0.41%	9	7
TOTAL		7	6																		

Dividend Yield = (Annual Dividends per Share) / Price per Share  
 (Low-Cap = Small- & Mid-Cap) VL H2O Screen 0.43% Mean  
 VL (Low Cap) H2O Screen 0.54%  
 VL Small-Cap) H2O Screen 0.56%

When Value Line (VL) Beta ratio exceeds 99.9 or earnings are negative, VI shows "NMF" for 'no meaningful figure'.



4.80% Annual Growth Rate - Stage 3

**E.O.Y. Cash Flows** Staff Model Y EPS Growth

EPS Growth to Determine a Sale Terminal Value

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	% of NPV <sub>Div</sub>	NPV @ IRR	Recent Price*	Initial Stage										Transition Stage										Final Stage										Terminal Value	2046 Div	2046 Sale	2047	Screen #									
								2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045															
1	American States	Yes	Mid-Cap	7.4%	55.5%	0.00	(53.80)	0.99	1.07	1.16	1.25	1.35	1.45	1.61	1.74	1.86	1.95	2.05	2.14	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	3.59	3.76	3.94	4.13	4.33	4.54	4.76	252.43	4.98	247.45	8.65	1	1									
2	Aqua America	Yes	Large-Cap	8.3%	47.6%	(0.00)	(34.82)	0.79	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	183.60	6.36	179.24	6.95	3	2									
3	California Water	Yes	Mid-Cap	7.5%	57.9%	0.00	(38.63)	0.72	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	197.68	3.44	194.25	7.04	4	3									
4	Connecticut Water	Merger	Merger	7.5%	55.3%	0.00	(55.07)	1.18	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	266.13	5.08	261.05	10.10	5	4									
5	Middlesex Water	Yes	Small-Cap	8.1%	54.4%	0.00	(36.60)	0.86	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	205.12	3.70	201.42	7.59	7	5									
6	SJW	Merger	Merger	7.2%	54.3%	0.00	(55.16)	1.04	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	239.70	5.12	234.58	12.16	8	6									
7	York Water	Yes	Small Cap	8.2%	49.3%	0.00	(29.07)	0.65	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	152.87	3.43	149.44	5.40	9	7									
<b>TOTALS</b>								7	6	Mean																																									
								7.91%	52.95%	0%																																									
								7.80%	54.29%	0%																																									
								8.14%	51.88%	0%																																									

VL H2O Screen  
VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)  
VL Small-Cap H2O Screen

**B.O.Y. Cash Flows** Staff Model Y EPS Growth

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	% of NPV <sub>Div</sub>	NPV @ IRR	Recent Price*	Initial Stage										Transition Stage										Final Stage										Terminal Value	2046 Div	2046 Sale	2047	Screen #									
								2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045															
1	American States	Yes	Mid-Cap	7.5%	53.6%	0.00	(53.80)	1.07	1.16	1.25	1.35	1.45	1.61	1.74	1.86	1.95	2.05	2.14	2.25	2.35	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	3.59	3.76	3.94	4.13	4.33	4.54	4.76	4.98	252.67	5.22	247.45	8.65	1	1									
2	Aqua America	Yes	Large-Cap	8.5%	45.4%	0.00	(34.82)	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	4.36	183.81	4.57	179.24	6.95	3	2									
3	California Water	Yes	Mid-Cap	7.6%	56.1%	0.00	(38.63)	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	3.44	3.60	197.85	3.60	194.25	7.04	4	3								
4	Connecticut Water	Merger	Merger	7.6%	53.7%	0.00	(55.07)	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	5.08	266.37	5.32	261.05	10.10	5	4									
5	Middlesex Water	Yes	Small-Cap	8.2%	52.7%	0.00	(36.60)	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	3.70	205.30	3.88	201.42	7.59	7	5									
6	SJW	Merger	Merger	7.3%	52.5%	0.00	(55.16)	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	5.12	239.95	5.36	234.58	12.16	8	6									
7	York Water	Yes	Small Cap	8.4%	47.3%	0.00	(29.07)	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	153.04	3.59	149.44	5.40	9	7									
<b>TOTALS</b>								7	6	Mean																																									
								8.05%	51.03%	0%																																									
								7.93%	52.43%	0%																																									
								8.28%	51.21%	0%																																									

VL H2O Screen  
VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)  
VL Small-Cap H2O Screen

**Average B.O.Y. & E.O.Y. Cash Flows** Model Y EPS Growth

Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Average IRR	% of NPV <sub>Div</sub>	Average 2016 - 2020 Dividend Growth Rates			Screen #	
						EOY	BOY	Average		
						Screen #	Screen #	Screen #		
1	American States	Yes	Mid-Cap	7.4%	54.6%	8.1%	7.9%	8.0%	1	1
2	Aqua America	Yes	Large-Cap	8.4%	46.5%	9.6%	10.0%	9.8%	3	2
3	California Water	Yes	Mid-Cap	7.6%	57.0%	7.2%	8.0%	7.6%	4	3
4	Connecticut Water	Merger	Merger	7.5%	54.5%	5.3%	5.3%	5.3%	5	4
5	Middlesex Water	Yes	Small-Cap	8.1%	53.6%	5.4%	5.2%	5.3%	7	5
6	SJW	Merger	Merger	7.2%	53.4%	6.9%	6.6%	6.8%	8	6
7	York Water	Yes	Small Cap	8.3%	48.3%	9.1%	9.3%	9.2%	9	7
<b>TOTALS</b>										
Mean										
7.98%										
7.86%										
8.21%										

VL H2O Screen  
VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)  
VL Small-Cap H2O Screen

Simple Discounted Cash Flow (DCF) Model

AKA: Gordon Growth Model

This simple model presumes that whatever is happening next quarter will happen forever.

	A	B	C	D	E	F	G	H	I	J (1+L) <sup>1/4</sup> -1	K	L (O/F) <sup>*</sup> (1+N)	M	N (1+L+J) <sup>4</sup> -1	O	P
	Utility	Ticker	Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	Recent Stock Price	VL EPS 2017	VL EPS 2020-2022	Company "Combined LT Growth Rate"	Quarterly Co. Growth Rate	2017 VL "Last" Q-4 \$ Quarterly Dividend	t+1 Dividend Yield Co. Growth Rate	SIMPLE DCF ROE			Utility
													Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	
1	American States	AWR	Yes	Yes	No	53.80	1.88	2.29	6.2%	1.5%	0.2475	0.47%	8.16%	8.16%		American States
2	Aqua America	WTR	Yes	No	No	34.82	1.35	1.81	6.7%	1.6%	0.1975	0.58%	9.19%			Aqua America
3	California Water	CWT	Yes	Yes	No	38.63	1.40	1.81	9.6%	2.3%	0.1800	0.48%	11.61%	11.61%		California Water
4	Middlesex Water	MSEX	Yes	Yes	Yes	65.57	1.38	1.96	7.8%	1.9%	0.2150	0.33%	9.26%	9.26%	9.26%	Middlesex Water
5	York Water	YORW	Yes	Yes	Yes	75.19	1.05	1.40	7.1%	1.7%	0.1625	0.22%	8.05%	8.05%	8.05%	York Water
<b>Average:</b>													9.25%	9.27%	8.65%	

In General, Staff Disagrees with this Simple Gordon Growth DCF Model

However, this model may provide a check on Staff's Three Stage DCF Modeling.

This is a tool used to introduce students to certain elementary concepts in finance.  
If dividends were to grow at a steady rate forever, regardless of everything known otherwise,

❖ Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by : 12.5 bps  
 ❖ Sensitivity Study to Account for Difference in Capitalization Size -- Maximum Upward Shift: 1.6 bps  
**Informed Range of Modeled Results 8.79% to 9.41% ROE**  
**Point ROE Recommendation 9.27% ROE**  
 Top of Range for Commission Consideration 9.41% ROE

then:

$$P_0 = D_1 / (r - g)$$

$P_0$  The current stock price  
 $D_1$  The quarterly dividend expected in the next quarter  
 $r$  The cost of equity capital  
 $g$  The perpetual growth rate

2028 through 2047 TIPS-Implied Average Annual Inflation Rate:

1.99%

Yr. End Mo.-Yr.	Years	Individually Implied Price Levels					Implied Forward Curve/Price Level					Implied Price Level	Check
		5-Yr	7-Yr	10-Yr	20-Yr	30-Yr	5-Yr	7-Yr	10-Yr	20-Yr	30-Yr		
Dec-17	0	100.00	100.00	100.00	100.00	100.00	100.00					100.00	
Dec-18	1	101.75	101.81	101.87	101.89	101.95	101.75					101.75	
Dec-19	2	103.52	103.65	103.77	103.82	103.93	103.52					103.52	
Dec-20	3	105.33	105.52	105.72	105.79	105.95	105.33					105.33	
Dec-21	4	107.17	107.42	107.69	107.79	108.02	107.17					107.17	
Dec-22	5	109.04	109.37	109.71	109.83	110.12	109.04					109.04	
Dec-23	6		111.34	111.76	111.91	112.26		111.18				111.18	
Dec-24	7		113.35	113.85	114.03	114.45		113.35				113.35	
Dec-25	8			115.98	116.19	116.68			115.64			115.64	
Dec-26	9			118.15	118.39	118.95			117.97			117.97	
Dec-27	10			120.35	120.63	121.26			120.35			120.35	
Dec-28	11				122.91	123.62				122.66		122.66	122.74
Dec-29	12				125.24	126.03				125.01		125.01	125.18
Dec-30	13				127.61	128.48				127.41		127.41	127.67
Dec-31	14				130.03	130.99				129.85		129.85	130.20
Dec-32	15				132.49	133.54				132.34		132.34	132.78
Dec-33	16				135.00	136.13				134.88		134.88	135.42
Dec-34	17				137.56	138.78				137.46		137.46	138.11
Dec-35	18				140.16	141.49				140.10		140.10	140.85
Dec-36	19				142.81	144.24				142.78		142.78	143.65
Dec-37	20				145.52	147.05				145.52		145.52	146.50
Dec-38	21					149.91					148.51	148.51	149.40
Dec-39	22					152.83					151.56	151.56	152.37
Dec-40	23					155.80					154.67	154.67	155.39
Dec-41	24					158.84					157.84	157.84	158.48
Dec-42	25					161.93					161.08	161.08	161.63
Dec-43	26					165.08					164.39	164.39	164.83
Dec-44	27					168.30					167.77	167.77	168.11
Dec-45	28					171.57					171.21	171.21	171.44
Dec-46	29					174.91					174.73	174.73	174.85
Dec-47	30					178.32					178.32	178.32	178.32

Average Quarterly Values for FRB H15 Data  
See FRB H.15 Tab for Data Feed Sources.

Staff TIPS Analysis

Quarterly Aggregation

Average Monthly Inflation Indexed Rates by Quarter					
Qtr	TIPS-05m	TIPS-07m	TIPS-10m	TIPS-20m	TIPS-30m
2003-Q1	1.33	1.81	2.07		
2003-Q2	1.15	1.61	1.94		
2003-Q3	1.36	1.84	2.21		
2003-Q4	1.24	1.65	2.01		
2004-Q1	0.82	1.26	1.71		
2004-Q2	1.26	1.69	2.05		
2004-Q3	1.17	1.55	1.89	2.28	
2004-Q4	0.93	1.30	1.69	2.08	
2005-Q1	1.17	1.41	1.71	1.93	
2005-Q2	1.30	1.44	1.68	1.83	
2005-Q3	1.59	1.70	1.82	1.98	
2005-Q4	1.92	1.98	2.04	2.13	
2006-Q1	2.00	2.05	2.09	2.08	
2006-Q2	2.34	2.39	2.46	2.48	
2006-Q3	2.37	2.37	2.37	2.38	
2006-Q4	2.40	2.36	2.32	2.29	
2007-Q1	2.28	2.33	2.33	2.36	
2007-Q2	2.35	2.40	2.44	2.49	
2007-Q3	2.38	2.44	2.45	2.46	
2007-Q4	1.54	1.81	1.92	2.11	
2008-Q1	0.58	1.02	1.32	1.81	
2008-Q2	0.79	1.17	1.48	2.03	
2008-Q3	1.18	1.47	1.70	2.16	
2008-Q4	2.73	2.92	2.60	2.73	
2009-Q1	1.37	1.54	1.79	2.34	
2009-Q2	1.12	1.37	1.72	2.31	
2009-Q3	1.17	1.41	1.74	2.22	
2009-Q4	0.58	0.94	1.37	1.98	
2010-Q1	0.47	0.94	1.43	2.00	2.16
2010-Q2	0.46	0.91	1.36	1.77	1.88
2010-Q3	0.20	0.57	1.06	1.68	1.76
2010-Q4	-0.11	0.28	0.75	1.48	1.65
2011-Q1	0.07	0.67	1.09	1.71	2.00
2011-Q2	-0.29	0.33	0.80	1.49	1.78
2011-Q3	-0.65	-0.22	0.28	0.95	1.25
2011-Q4	-0.75	-0.39	0.05	0.61	0.85
2012-Q1	-1.02	-0.60	-0.17	0.51	0.78
2012-Q2	-1.08	-0.75	-0.35	0.35	0.66
2012-Q3	-1.27	-1.01	-0.63	0.02	0.43
2012-Q4	-1.42	-1.15	-0.76	-0.02	0.36
2013-Q1	-1.40	-0.98	-0.59	0.19	0.56
2013-Q2	-1.04	-0.62	-0.25	0.47	0.80
2013-Q3	-0.32	0.17	0.56	1.16	1.43
2013-Q4	-0.29	0.25	0.57	1.19	1.50
2014-Q1	-0.16	0.37	0.58	1.11	1.39
2014-Q2	-0.25	0.27	0.43	0.88	1.14
2014-Q3	-0.13	0.24	0.32	0.72	0.98
2014-Q4	0.19	0.39	0.45	0.75	0.95
2015-Q1	0.11	0.23	0.27	0.52	0.71
2015-Q2	-0.10	0.22	0.30	0.67	0.91
2015-Q3	0.26	0.48	0.57	0.92	1.14
2015-Q4	0.36	0.51	0.66	1.02	1.24
2016-Q1	0.15	0.32	0.49	0.88	1.11
2016-Q2	-0.24	-0.05	0.19	0.62	0.85
2016-Q3	-0.22	-0.09	0.08	0.44	0.62
2016-Q4	-0.06	0.12	0.33	0.69	0.86
2017-Q1	0.07	0.33	0.44	0.75	0.95
2017-Q2	0.10	0.30	0.44	0.76	0.94
2017-Q3	0.17	0.36	0.45	0.75	0.94
2017-Q4	0.32	0.44	0.50	0.72	0.87

Average Monthly Nominal UST Rates by Quarter					
Qtr	UST-05m	UST-07m	UST-10m	UST-20m	UST-30m
2003-Q1	2.91	3.46	3.92	4.90	
2003-Q2	2.57	3.13	3.62	4.59	
2003-Q3	3.14	3.72	4.23	5.17	
2003-Q4	3.25	3.78	4.29	5.16	
2004-Q1	2.99	3.52	4.02	4.89	
2004-Q2	3.72	4.18	4.60	5.36	
2004-Q3	3.51	3.92	4.30	5.07	
2004-Q4	3.49	3.85	4.17	4.87	
2005-Q1	3.88	4.09	4.30	4.76	
2005-Q2	3.87	3.99	4.16	4.55	
2005-Q3	4.04	4.11	4.21	4.51	
2005-Q4	4.39	4.42	4.49	4.77	
2006-Q1	4.55	4.55	4.57	4.76	4.64
2006-Q2	4.99	5.02	5.07	5.29	5.14
2006-Q3	4.84	4.85	4.90	5.09	4.99
2006-Q4	4.60	4.60	4.63	4.83	4.74
2007-Q1	4.65	4.65	4.68	4.90	4.80
2007-Q2	4.76	4.79	4.85	5.07	4.99
2007-Q3	4.50	4.60	4.73	5.01	4.94
2007-Q4	3.79	3.98	4.26	4.65	4.61
2008-Q1	2.75	3.15	3.66	4.40	4.41
2008-Q2	3.16	3.46	3.89	4.59	4.58
2008-Q3	3.11	3.44	3.86	4.49	4.45
2008-Q4	2.18	2.63	3.25	3.97	3.68
2009-Q1	1.76	2.23	2.74	3.69	3.45
2009-Q2	2.23	2.88	3.31	4.19	4.17
2009-Q3	2.47	3.12	3.52	4.28	4.32
2009-Q4	2.30	2.98	3.46	4.27	4.33
2010-Q1	2.42	3.16	3.72	4.49	4.62
2010-Q2	2.25	2.93	3.49	4.20	4.37
2010-Q3	1.55	2.19	2.79	3.60	3.85
2010-Q4	1.49	2.18	2.86	3.84	4.16
2011-Q1	2.12	2.83	3.46	4.32	4.56
2011-Q2	1.86	2.55	3.21	4.07	4.34
2011-Q3	1.15	1.78	2.43	3.34	3.70
2011-Q4	0.95	1.50	2.05	2.75	3.04
2012-Q1	0.90	1.44	2.04	2.80	3.14
2012-Q2	0.79	1.24	1.82	2.55	2.94
2012-Q3	0.67	1.08	1.64	2.37	2.75
2012-Q4	0.69	1.12	1.71	2.46	2.86
2013-Q1	0.83	1.32	1.95	2.75	3.14
2013-Q2	0.92	1.39	2.00	2.78	3.15
2013-Q3	1.51	2.12	2.71	3.44	3.72
2013-Q4	1.44	2.12	2.75	3.50	3.79
2014-Q1	1.60	2.22	2.76	3.42	3.68
2014-Q2	1.66	2.19	2.62	3.18	2.87
2014-Q3	1.70	2.16	2.50	3.01	3.26
2014-Q4	1.60	2.00	2.28	2.69	2.97
2015-Q1	1.45	1.77	1.97	2.32	2.55
2015-Q2	1.52	1.91	2.17	2.62	2.89
2015-Q3	1.55	1.94	2.22	2.65	2.96
2015-Q4	1.59	1.94	2.19	2.60	2.96
2016-Q1	1.37	1.69	1.92	2.32	2.72
2016-Q2	1.24	1.54	1.75	2.15	2.57
2016-Q3	1.13	1.40	1.56	1.91	2.28
2016-Q4	1.61	1.93	2.13	2.52	2.82
2017-Q1	1.94	2.25	2.44	2.78	3.04
2017-Q2	1.81	2.07	2.26	2.64	2.90
2017-Q3	1.82	2.06	2.24	2.58	2.82
2017-Q4	2.07	2.25	2.37	2.62	2.82

Implied Market-based Inflationary Expectations					
Qtr	5-Yr	7-Yr	10-Yr	20-Yr	30-Yr
2003-Q1	1.58	1.65	1.85		
2003-Q2	1.42	1.52	1.68		
2003-Q3	1.78	1.87	2.03		
2003-Q4	2.01	2.13	2.28		
2004-Q1	2.17	2.26	2.31		
2004-Q2	2.47	2.50	2.55		
2004-Q3	2.34	2.37	2.41	2.79	
2004-Q4	2.56	2.55	2.48	2.79	
2005-Q1	2.72	2.68	2.58	2.83	
2005-Q2	2.57	2.55	2.48	2.72	
2005-Q3	2.44	2.41	2.39	2.52	
2005-Q4	2.47	2.44	2.45	2.64	
2006-Q1	2.55	2.50	2.48	2.69	
2006-Q2	2.65	2.62	2.61	2.80	
2006-Q3	2.47	2.48	2.52	2.71	
2006-Q4	2.20	2.24	2.31	2.54	
2007-Q1	2.36	2.32	2.35	2.54	
2007-Q2	2.41	2.39	2.41	2.58	
2007-Q3	2.13	2.16	2.28	2.55	
2007-Q4	2.24	2.17	2.34	2.54	
2008-Q1	2.17	2.13	2.34	2.59	
2008-Q2	2.37	2.29	2.40	2.56	
2008-Q3	1.93	1.96	2.16	2.33	
2008-Q4	-0.55	-0.29	0.65	1.24	
2009-Q1	0.39	0.69	0.95	1.35	
2009-Q2	1.11	1.51	1.60	1.88	
2009-Q3	1.30	1.72	1.77	2.06	
2009-Q4	1.72	2.04	2.09	2.29	
2010-Q1	1.96	2.22	2.28	2.49	2.47
2010-Q2	1.80	2.03	2.13	2.43	2.49
2010-Q3	1.35	1.63	1.73	1.92	2.09
2010-Q4	1.59	1.90	2.12	2.36	2.51
2011-Q1	2.05	2.16	2.37	2.61	2.56
2011-Q2	2.15	2.22	2.41	2.57	2.56
2011-Q3	1.81	2.00	2.15	2.39	2.45
2011-Q4	1.71	1.89	1.99	2.14	2.19
2012-Q1	1.92	2.04	2.20	2.29	2.36
2012-Q2	1.86	1.99	2.17	2.21	2.28
2012-Q3	1.94	2.09	2.28	2.35	2.31
2012-Q4	2.11	2.27	2.47	2.48	2.50
2013-Q1	2.23	2.31	2.54	2.55	2.58
2013-Q2	1.95	2.01	2.25	2.32	2.34
2013-Q3	1.82	1.95	2.15	2.29	2.29
2013-Q4	1.73	1.86	2.17	2.31	2.29
2014-Q1	1.77	1.85	2.18	2.30	2.29
2014-Q2	1.90	1.92	2.20	2.30	1.73
2014-Q3	1.83	1.92	2.18	2.28	2.29
2014-Q4	1.41	1.61	1.83	1.95	2.02
2015-Q1	1.35	1.54	1.70	1.79	1.85
2015-Q2	1.63	1.69	1.86	1.95	1.97
2015-Q3	1.29	1.47	1.65	1.73	1.82
2015-Q4	1.23	1.43	1.53	1.58	1.72
2016-Q1	1.23	1.37	1.43	1.45	1.61
2016-Q2	1.48	1.58	1.56	1.53	1.72
2016-Q3	1.35	1.49	1.48	1.47	1.66
2016-Q4	1.67	1.80	1.80	1.83	1.96
2017-Q1	1.87	1.92	2.01	2.03	2.10
2017-Q2	1.71	1.78	1.82	1.88	1.96
2017-Q3	1.65	1.70	1.79	1.83	1.88
2017-Q4	1.75	1.81	1.87	1.89	1.95



FRB H.15 Market Yield on U.S. Treasury (UST) Securities at Constant Maturity, Quoted on an Investment Basis in Percent Per Year

Staff Accessed , Mar. 8, 2018 at: <http://federalreserve.gov/releases/h15/data.htm>

Monthly <https://www.federalreserve.gov/data/download/Choose.aspx?rel=H15>

Staff Accessed , Mar. 8, 2018 at: <https://www.federalreserve.gov/data/download/Choose.aspx?rel=H15>

TIPS-05m	5	Year	Inflation Indexed	H.15 ID	RIFLFGCY05_XII_N.M
TIPS-07m	7				RIFLFGCY07_XII_N.M
TIPS-10m	10				RIFLFGCY10_XII_N.M
TIPS-20m	20				RIFLFGCY20_XII_N.M
TIPS-30m	30				RIFLFGCY30_XII_N.M

Month	UST-05m	UST-07m	UST-10m	UST-20m	UST-30m
2003-01	3.05	3.60	4.05	5.02	
2003-02	2.90	3.45	3.90	4.87	
2003-03	2.78	3.34	3.81	4.82	
2003-04	2.93	3.47	3.96	4.91	
2003-05	2.52	3.07	3.57	4.52	
2003-06	2.27	2.84	3.33	4.34	
2003-07	2.27	3.45	3.98	4.92	
2003-08	3.37	3.96	4.45	5.39	
2003-09	3.18	3.74	4.27	5.21	
2003-10	3.19	3.75	4.29	5.21	
2003-11	3.29	3.81	4.30	5.17	
2003-12	3.27	3.79	4.27	5.11	
2004-01	3.12	3.65	4.15	5.01	
2004-02	3.07	3.59	4.08	4.94	
2004-03	2.79	3.31	3.83	4.72	
2004-04	3.39	3.89	4.35	5.16	
2004-05	3.85	4.31	4.72	5.46	
2004-06	3.93	4.35	4.73	5.45	
2004-07	3.69	4.11	4.50	5.24	
2004-08	3.47	3.90	4.28	5.07	
2004-09	3.36	3.75	4.13	4.89	
2004-10	3.35	3.75	4.10	4.85	
2004-11	3.53	3.88	4.19	4.89	
2004-12	3.60	3.93	4.23	4.98	
2005-01	3.72	4.23	4.77	5.47	
2005-02	3.77	4.17	4.61	5.35	
2005-03	4.17	4.33	4.50	5.48	
2005-04	4.00	4.16	4.34	5.16	
2005-05	3.85	3.94	4.14	4.96	
2005-06	3.77	3.86	4.00	4.85	
2005-07	3.98	4.06	4.18	4.98	
2005-08	4.12	4.18	4.26	4.93	
2005-09	4.01	4.08	4.20	4.85	
2005-10	4.33	4.38	4.46	4.74	
2005-11	4.45	4.48	4.54	4.83	
2005-12	4.38	4.41	4.47	4.73	
2006-01	4.36	4.37	4.42	4.65	
2006-02	4.57	4.56	4.57	4.73	
2006-03	4.72	4.71	4.72	4.91	
2006-04	4.90	4.94	4.99	5.22	
2006-05	5.00	5.03	5.11	5.35	
2006-06	5.07	5.08	5.11	5.29	
2006-07	5.04	5.05	5.09	5.25	
2006-08	4.82	4.83	4.88	5.08	
2006-09	4.67	4.68	4.72	4.93	
2006-10	4.69	4.69	4.73	4.94	
2006-11	4.58	4.58	4.60	4.78	
2006-12	4.33	4.35	4.41	4.56	
2007-01	4.75	4.75	4.76	4.95	
2007-02	4.71	4.71	4.72	4.93	
2007-03	4.48	4.50	4.56	4.81	
2007-04	4.59	4.62	4.69	4.95	
2007-05	4.67	4.69	4.75	4.98	
2007-06	5.03	5.05	5.10	5.29	
2007-07	4.88	4.93	5.00	5.19	
2007-08	4.43	4.53	4.67	5.00	
2007-09	4.20	4.33	4.52	4.84	
2007-10	4.20	4.33	4.53	4.83	
2007-11	3.67	3.87	4.15	4.56	
2007-12	3.69	3.74	4.10	4.57	
2008-01	2.98	3.31	3.74	4.35	
2008-02	2.78	3.21	3.74	4.49	
2008-03	2.48	2.93	3.51	4.36	
2008-04	2.84	3.19	3.68	4.44	
2008-05	3.15	3.46	3.88	4.60	
2008-06	3.49	3.73	4.10	4.74	
2008-07	3.30	3.60	4.01	4.62	
2008-08	3.14	3.46	3.89	4.53	
2008-09	2.88	3.25	3.69	4.32	
2008-10	2.73	3.19	3.81	4.45	
2008-11	2.89	3.02	3.53	4.27	
2008-12	1.52	1.89	2.42	3.18	
2009-01	1.60	1.98	2.52	3.46	
2009-02	1.87	2.30	2.87	3.83	
2009-03	1.82	2.42	2.82	3.78	
2009-04	1.86	2.47	2.93	3.84	
2009-05	2.13	2.81	3.29	4.22	
2009-06	2.71	3.37	3.72	4.51	
2009-07	2.46	3.14	3.56	4.38	
2009-08	2.57	3.21	3.59	4.33	
2009-09	2.37	3.02	3.40	4.14	
2009-10	2.33	2.96	3.39	4.16	
2009-11	2.23	2.92	3.40	4.24	
2009-12	2.34	3.07	3.59	4.40	
2010-01	2.48	3.21	3.73	4.50	
2010-02	2.36	3.12	3.69	4.48	
2010-03	2.43	3.16	3.73	4.49	
2010-04	2.58	3.28	3.85	4.53	
2010-05	2.18	2.86	3.42	4.11	
2010-06	2.00	2.66	3.20	3.95	
2010-07	1.76	2.43	3.01	3.80	
2010-08	1.47	2.10	2.70	3.52	
2010-09	1.41	2.05	2.65	3.47	
2010-10	1.18	1.85	2.54	3.52	
2010-11	1.35	2.02	2.76	3.82	
2010-12	1.93	2.66	3.29	4.17	
2011-01	1.99	2.72	3.39	4.28	
2011-02	2.26	2.96	3.58	4.42	
2011-03	2.11	2.80	3.41	4.27	
2011-04	2.17	2.84	3.46	4.28	
2011-05	1.84	2.51	3.17	4.01	
2011-06	1.58	2.29	3.00	3.91	
2011-07	1.54	2.28	3.00	3.95	
2011-08	1.02	1.63	2.30	3.24	
2011-09	0.90	1.42	1.98	2.83	
2011-10	1.06	1.62	2.15	2.87	
2011-11	0.91	1.45	2.01	2.72	
2011-12	0.89	1.43	1.98	2.67	
2012-01	0.84	1.38	1.97	2.70	
2012-02	0.83	1.37	1.97	2.75	
2012-03	1.02	1.56	2.17	2.94	
2012-04	0.89	1.43	2.05	2.82	
2012-05	0.76	1.21	1.80	2.53	
2012-06	0.71	1.08	1.62	2.31	
2012-07	0.62	0.98	1.53	2.22	
2012-08	0.71	1.14	1.68	2.40	
2012-09	0.67	1.12	1.72	2.49	
2012-10	0.71	1.15	1.75	2.51	
2012-11	0.67	1.08	1.65	2.39	
2012-12	0.70	1.13	1.72	2.47	
2013-01	0.81	1.30	1.91	2.68	
2013-02	0.85	1.35	1.98	2.78	
2013-03	0.82	1.32	1.96	2.78	
2013-04	0.71	1.15	1.76	2.55	
2013-05	0.84	1.31	1.93	2.73	
2013-06	1.20	1.71	2.30	3.07	
2013-07	1.40	1.99	2.58	3.31	
2013-08	1.52	2.15	2.74	3.49	
2013-09	1.60	2.22	2.81	3.53	
2013-10	1.37	1.99	2.62	3.28	
2013-11	1.37	2.07	2.72	3.50	
2013-12	1.58	2.29	2.90	3.63	
2014-01	1.65	2.29	2.86	3.52	
2014-02	1.52	2.15	2.71	3.38	
2014-03	1.64	2.23	2.72	3.35	
2014-04	1.70	2.27	2.71	3.27	
2014-05	1.59	2.12	2.56	3.12	
2014-06	1.68	2.19	2.60	3.15	
2014-07	1.70	2.17	2.64	3.07	
2014-08	1.63	2.08	2.42	2.94	
2014-09	1.77	2.32	2.53	3.01	
2014-10	1.55	1.98	2.30	2.77	
2014-11	1.62	2.03	2.33	2.76	
2014-12	1.64	1.98	2.21	2.55	
2015-01	1.37	1.67	1.88	2.20	
2015-02	1.47	1.79	1.98	2.34	
2015-03	1.52	1.84	2.04	2.41	
2015-04	1.35	1.69	1.94	2.33	
2015-05	1.54	1.93	2.20	2.69	
2015-06	1.68	2.10	2.36	2.85	
2015-07	1.63	2.04	2.32	2.77	
2015-08	1.54	1.91	2.17	2.55	
2015-09	1.49	1.88	2.17	2.62	
2015-10	1.39	1.76	2.07	2.50	
2015-11	1.67	2.02	2.26	2.69	
2015-12	1.70	2.04	2.24	2.61	
2016-01	1.52	1.85	2.09	2.49	
2016-02	1.22	1.53	1.78	2.20	
2016-03	1.38	1.68	1.89	2.28	
2016-04	1.26	1.57	1.81	2.21	
2016-05	1.30	1.60	1.81	2.22	
2016-06	1.17	1.44	1.64	2.02	
2016-07	1.07	1.33	1.50	1.82	
2016-08	0.99	1.23	1.52	1.89	
2016-09	1.18	1.46	1.63	2.02	
2016-10	1.27	1.56	1.76	2.17	
2016-11	1.60	1.93	2.14	2.54	
2016-12	1.96	2.29	2.49	2.84	
2017-01	1.92	2.23	2.43	2.75	
2017-02	1.90	2.22	2.42	2.76	
2017-03	2.01	2.30	2.48	2.83	
2017-04	1.82	2.10	2.30	2.67	
2017-05	1.84	2.11	2.30	2.70	
2017-06	1.77	2.01	2.19	2.54	
2017-07	1.87	2.13	2.32	2.65	
2017-08	1.78	2.03	2.21	2.55	
2017-09	1.80	2.03	2.20	2.53	
2017-10	1.98	2.20			

Annual		Quarterly		1980 through 2017 Q4	
Current-Dollar and "Real" Gross Domestic Product (GDP)		Seasonally adjusted annual rates		Average 2.67% Real	
Yr	GDP in billions of current dollars	GDP in billions of chained 2009 dollars	Quarter	GDP in billions of current dollars	GDP in billions of chained 2009 dollars
1929	104.6	1,056.6	1947Q1	243.1	1,934.5
1930	92.2	966.7	1947Q2	246.3	1,932.3
1931	77.4	904.8	1947Q3	250.1	1,930.3
1932	59.5	788.2	1947Q4	260.3	1,960.7
1933	57.2	778.3	1948Q1	266.2	1,989.5
1934	66.8	862.2	1948Q2	272.9	2,021.9
1935	74.3	939.0	1948Q3	279.5	2,033.2
1936	84.9	1,060.5	1948Q4	280.7	2,035.3
1937	93.0	1,114.6	1949Q1	275.4	2,007.5
1938	87.4	1,077.7	1949Q2	271.7	2,000.8
1939	93.5	1,163.6	1949Q3	273.3	2,022.8
1940	102.9	1,266.1	1949Q4	271.0	2,004.7
1941	129.4	1,490.3	1950Q1	281.2	2,084.6
1942	166.0	1,771.8	1950Q2	290.7	2,147.6
1943	203.1	2,073.7	1950Q3	308.5	2,230.4
1944	224.6	2,239.4	1950Q4	320.3	2,273.4
1945	228.2	2,217.8	1951Q1	336.4	2,304.5
1946	227.8	1,969.9	1951Q2	344.5	2,344.5
1947	249.9	1,939.4	1951Q3	351.8	2,392.8
1948	274.8	2,020.0	1951Q4	356.6	2,398.1
1949	272.8	2,008.9	1952Q1	360.2	2,423.5
1950	300.2	2,184.0	1952Q2	361.4	2,428.5
1951	347.3	2,360.0	1952Q3	368.1	2,446.1
1952	367.7	2,456.1	1952Q4	381.2	2,526.4
1953	389.7	2,571.4	1953Q1	388.5	2,573.4
1954	391.1	2,556.9	1953Q2	392.3	2,593.5
1955	426.2	2,739.0	1953Q3	391.7	2,578.9
1956	450.1	2,797.4	1953Q4	386.5	2,539.8
1957	474.9	2,856.3	1954Q1	385.9	2,528.0
1958	482.0	2,835.3	1954Q2	386.7	2,530.7
1959	522.5	3,031.0	1954Q3	391.6	2,559.4
1960	543.3	3,108.7	1954Q4	400.3	2,609.3
1961	563.3	3,188.1	1955Q1	413.8	2,688.3
1962	605.1	3,383.1	1955Q2	422.2	2,727.5
1963	638.6	3,530.4	1955Q3	430.9	2,764.1
1964	685.8	3,734.0	1955Q4	437.8	2,780.8
1965	743.7	3,976.7	1956Q1	440.5	2,770.0
1966	815.0	4,238.9	1956Q2	446.8	2,792.9
1967	861.7	4,355.2	1956Q3	452.0	2,790.6
1968	942.5	4,569.0	1956Q4	461.3	2,836.2
1969	1,019.9	4,712.5	1957Q1	470.6	2,854.5
1970	1,075.9	4,722.0	1957Q2	472.8	2,848.2
1971	1,167.8	4,877.6	1957Q3	480.3	2,875.9
1972	1,282.4	5,134.3	1957Q4	475.7	2,846.4
1973	1,428.5	5,424.1	1958Q1	468.4	2,772.7
1974	1,548.8	5,396.0	1958Q2	472.8	2,790.9
1975	1,688.9	5,385.4	1958Q3	486.7	2,855.5
1976	1,877.6	5,675.4	1958Q4	500.4	2,922.3
1977	2,086.0	5,937.0	1959Q1	511.1	2,976.6
1978	2,356.6	6,267.2	1959Q2	524.2	3,049.0
1979	2,632.1	6,466.2	1959Q3	525.2	3,043.1
1980	2,862.5	6,450.4	1959Q4	529.3	3,055.1
1981	3,211.0	6,617.7	1960Q1	543.3	3,123.2
1982	3,345.0	6,491.3	1960Q2	542.7	3,111.3
1983	3,638.1	6,792.0	1960Q3	546.0	3,119.1
1984	4,040.7	7,285.0	1960Q4	541.1	3,081.3
1985	4,346.7	7,593.8	1961Q1	545.9	3,102.3
1986	4,590.2	7,860.5	1961Q2	557.4	3,159.9
1987	4,870.2	8,132.6	1961Q3	568.2	3,212.6
1988	5,252.6	8,474.5	1961Q4	581.6	3,277.7
1989	5,657.7	8,786.4	1962Q1	595.2	3,336.8
1990	5,979.6	8,955.0	1962Q2	602.6	3,372.7
1991	6,174.0	8,948.4	1962Q3	609.6	3,404.8
1992	6,539.3	9,266.6	1962Q4	613.1	3,418.0
1993	6,878.7	9,521.0	1963Q1	622.7	3,456.1
1994	7,308.8	9,905.4	1963Q2	631.8	3,501.1
1995	7,664.1	10,174.8	1963Q3	645.0	3,569.5
1996	8,100.2	10,561.0	1963Q4	654.8	3,595.0
1997	8,608.5	11,034.9	1964Q1	671.1	3,672.7
1998	9,089.2	11,525.9	1964Q2	680.8	3,716.4
1999	9,660.6	12,065.9	1964Q3	692.8	3,766.9
2000	10,284.8	12,559.7	1964Q4	698.4	3,780.2
2001	10,621.8	12,682.2	1965Q1	719.2	3,873.5
2002	10,977.5	12,908.8	1965Q2	732.4	3,926.4
2003	11,510.7	13,271.1	1965Q3	750.2	4,006.2
2004	12,274.9	13,773.5	1965Q4	773.1	4,100.6
2005	13,093.7	14,234.2	1966Q1	797.3	4,201.9
2006	13,855.9	14,613.8	1966Q2	807.2	4,219.1
2007	14,477.6	14,873.7	1966Q3	820.8	4,249.2
2008	14,718.6	14,830.4	1966Q4	834.9	4,285.6
2009	14,418.7	14,418.7	1967Q1	846.0	4,324.9
2010	14,964.4	14,783.8	1967Q2	851.1	4,328.7
2011	15,517.9	15,020.6	1967Q3	866.6	4,366.1
2012	16,155.3	15,354.6	1967Q4	883.2	4,401.2
2013	16,691.5	15,612.2	1968Q1	911.1	4,490.6
2014	17,427.6	16,013.3	1968Q2	936.3	4,566.4
2015	18,120.7	16,471.5	1968Q3	952.3	4,599.3
2016	18,624.5	16,716.2	1968Q4	970.1	4,619.8
2017	19,386.2	17,092.5	1969Q1	995.4	4,691.6
			1969Q2	1,011.4	4,706.7
			1969Q3	1,032.0	4,736.1
			1969Q4	1,040.7	4,715.5
			1970Q1	1,053.5	4,707.1
			1970Q2	1,070.1	4,715.4
			1970Q3	1,088.5	4,757.2
			1970Q4	1,091.5	4,708.3
			1971Q1	1,137.8	4,834.3
			1971Q2	1,159.4	4,861.9
			1971Q3	1,180.3	4,900.0
			1971Q4	1,193.6	4,914.3
			1972Q1	1,233.8	5,002.4
			1972Q2	1,270.1	5,118.3
			1972Q3	1,293.8	5,165.4
			1972Q4	1,332.0	5,251.2
			1973Q1	1,380.7	5,380.5
			1973Q2	1,417.6	5,441.5
			1973Q3	1,436.8	5,411.9
			1973Q4	1,479.1	5,462.4
			1974Q1	1,494.7	5,417.0
			1974Q2	1,534.2	5,431.3
			1974Q3	1,563.4	5,378.7
			1974Q4	1,603.0	5,357.2
			1975Q1	1,619.6	5,292.4
			1975Q2	1,656.4	5,333.2
			1975Q3	1,713.8	5,421.4
			1975Q4	1,765.9	5,494.4
			1976Q1	1,824.5	5,618.5
			1976Q2	1,856.9	5,661.0
			1976Q3	1,890.5	5,689.8
			1976Q4	1,938.4	5,732.5
			1977Q1	1,992.5	5,799.2
			1977Q2	2,060.2	5,913.0
			1977Q3	2,122.4	6,017.6
			1977Q4	2,168.7	6,018.2
			1978Q1	2,208.7	6,039.2
			1978Q2	2,336.6	6,274.0
			1978Q3	2,398.9	6,335.3
			1978Q4	2,482.2	6,420.3
			1979Q1	2,531.6	6,433.0
			1979Q2	2,595.9	6,440.8
			1979Q3	2,670.4	6,487.1
			1979Q4	2,730.7	6,503.9
			1980Q1	2,796.5	6,524.9
			1980Q2	2,799.9	6,392.6
			1980Q3	2,860.0	6,382.9
			1980Q4	2,993.5	6,501.2
			1981Q1	3,131.8	6,635.7
			1981Q2	3,167.3	6,587.3
			1981Q3	3,261.2	6,662.9
			1981Q4	3,283.5	6,585.1
			1982Q1	3,273.8	6,475.0
			1982Q2	3,331.3	6,510.2
			1982Q3	3,367.1	6,486.8
			1982Q4	3,407.8	6,493.1
			1983Q1	3,480.3	6,578.2
			1983Q2	3,583.8	6,728.3
			1983Q3	3,692.3	6,860.0
			1983Q4	3,796.1	7,001.5

OLS Regression

Annualized Real LN GDP Q  
**2.76%**

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.987298453
R Square	0.974758234
Adjusted R Square	0.974589956
Standard Error	0.048462262
Observations	152

ANOVA

	df	SS	MS	F	Significance F
Regression	1	13.60428747	13.60428747	5792.532028	9.4979E-122
Residual	150	0.352288621	0.002348591		
Total	151	13.95657609			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	8.795133966	0.007900568	1113.228024	1.0678E-295	8.779523191	8.810744741	8.779523191	8.810744741
X Variable 1	<b>0.006818244</b>	8.95856E-05	76.10868563	9.4979E-122	0.006641231	0.006995257	0.006641231	0.006995257

GDP is an array of expenditure and income data collected by BEA directly and through other government agencies.



Note July 31, 2013, 14th Comprehensive Significant Revision: BEA revised its tables back to 1929 in order to count:  
1 Artistic Works  
2 Research and Development  
as Capital Investments that Depreciate Over Time rather than one time expenditures

From an Economy based on (Industry and Manufacturing) to one based on (Knowledge and Information)

This comprehensive revision did not cause a large percentage jump. The relative difference of actual amounts over time changed little.

1984Q1	3,912.8	7,140.6	149	149	9.735258	2017
1984Q2	4,015.0	7,266.0	150	150	9.742796	
1984Q3	4,087.4	7,337.5	151	151	9.750564	
1984Q4	4,147.6	7,396.0	152	152	9.756825	

1985Q1	4,237.0	7,469.5	153
1985Q2	4,302.3	7,537.9	154
1985Q3	4,394.6	7,655.2	155
1985Q4	4,453.1	7,712.6	156
1986Q1	4,516.3	7,784.1	157
1986Q2	4,555.2	7,819.8	158
1986Q3	4,619.6	7,898.6	159
1986Q4	4,669.4	7,939.5	160
1987Q1	4,736.2	7,995.0	161
1987Q2	4,821.5	8,084.7	162
1987Q3	4,900.5	8,158.0	163
1987Q4	5,022.7	8,292.7	164
1988Q1	5,090.6	8,339.3	165
1988Q2	5,207.7	8,449.5	166
1988Q3	5,299.5	8,498.3	167
1988Q4	5,412.7	8,610.9	168
1989Q1	5,527.4	8,697.7	169
1989Q2	5,628.4	8,766.1	170
1989Q3	5,711.6	8,831.5	171
1989Q4	5,763.4	8,850.2	172
1990Q1	5,890.8	8,947.1	173
1990Q2	5,974.7	8,981.7	174
1990Q3	6,029.5	8,983.9	175
1990Q4	6,023.3	8,907.4	176
1991Q1	6,054.9	8,865.6	177
1991Q2	6,143.6	8,934.4	178
1991Q3	6,218.4	8,977.3	179
1991Q4	6,279.3	9,016.4	180
1992Q1	6,380.8	9,123.0	181
1992Q2	6,492.3	9,223.5	182
1992Q3	6,586.5	9,313.2	183
1992Q4	6,697.6	9,406.5	184
1993Q1	6,748.2	9,424.1	185
1993Q2	6,829.6	9,480.1	186
1993Q3	6,904.2	9,526.3	187
1993Q4	7,032.8	9,653.5	188
1994Q1	7,136.3	9,748.2	189
1994Q2	7,269.8	9,881.4	190
1994Q3	7,352.3	9,939.7	191
1994Q4	7,476.7	10,052.5	192
1995Q1	7,545.3	10,086.9	193
1995Q2	7,604.9	10,122.1	194
1995Q3	7,706.5	10,208.8	195
1995Q4	7,799.5	10,281.2	196
1996Q1	7,893.1	10,348.7	197
1996Q2	8,061.5	10,529.4	198
1996Q3	8,159.0	10,626.8	199
1996Q4	8,287.1	10,739.1	200
1997Q1	8,402.1	10,820.9	201
1997Q2	8,551.9	10,984.2	202
1997Q3	8,691.8	11,124.0	203
1997Q4	8,788.3	11,210.3	204
1998Q1	8,889.7	11,321.2	205
1998Q2	8,994.7	11,431.0	206
1998Q3	9,146.5	11,580.6	207
1998Q4	9,325.7	11,770.7	208
1999Q1	9,447.1	11,864.7	209
1999Q2	9,557.0	11,962.5	210
1999Q3	9,712.3	12,113.1	211
1999Q4	9,926.1	12,323.3	212
2000Q1	#####	12,359.1	213
2000Q2	#####	12,592.5	214
2000Q3	#####	12,607.7	215
2000Q4	#####	12,679.3	216
2001Q1	#####	12,643.3	217
2001Q2	#####	12,710.3	218
2001Q3	#####	12,670.1	219
2001Q4	#####	12,705.3	220
2002Q1	#####	12,822.3	221
2002Q2	#####	12,893.0	222
2002Q3	#####	12,955.8	223
2002Q4	#####	12,964.0	224
2003Q1	#####	13,031.2	225
2003Q2	#####	13,152.1	226
2003Q3	#####	13,372.4	227
2003Q4	#####	13,528.7	228
2004Q1	#####	13,606.5	229
2004Q2	#####	13,706.2	230
2004Q3	#####	13,830.8	231
2004Q4	#####	13,950.4	232
2005Q1	#####	14,099.1	233
2005Q2	#####	14,172.7	234
2005Q3	#####	14,291.8	235
2005Q4	#####	14,373.4	236
2006Q1	#####	14,546.1	237
2006Q2	#####	14,589.6	238
2006Q3	#####	14,602.6	239
2006Q4	#####	14,716.9	240
2007Q1	#####	14,726.0	241
2007Q2	#####	14,838.7	242
2007Q3	#####	14,938.5	243
2007Q4	#####	14,991.8	244
2008Q1	#####	14,889.5	245
2008Q2	#####	14,963.4	246
2008Q3	#####	14,891.6	247
2008Q4	#####	14,577.0	248
2009Q1	#####	14,375.0	249
2009Q2	#####	14,355.6	250
2009Q3	#####	14,402.5	251
2009Q4	#####	14,541.9	252
2010Q1	#####	14,604.8	253
2010Q2	#####	14,745.9	254
2010Q3	#####	14,845.5	255
2010Q4	#####	14,939.0	256
2011Q1	#####	14,881.3	257
2011Q2	#####	14,989.6	258
2011Q3	#####	15,021.1	259
2011Q4	#####	15,190.3	260
2012Q1	#####	15,291.0	261
2012Q2	#####	15,362.4	262
2012Q3	#####	15,380.8	263
2012Q4	#####	15,384.3	264
2013Q1	#####	15,491.9	265
2013Q2	#####	15,521.6	266
2013Q3	#####	15,641.3	267
2013Q4	#####	15,793.9	268
2014Q1	#####	15,757.6	269
2014Q2	#####	15,935.8	270
2014Q3	#####	16,139.5	271
2014Q4	#####	16,220.2	272
2015Q1	#####	16,350.0	273
2015Q2	#####	16,460.9	274
2015Q3	#####	16,527.6	275
2015Q4	#####	16,547.6	276
2016Q1	#####	16,571.6	276
2016Q2	#####	16,663.5	276
2016Q3	#####	16,778.1	276
2016Q4	#####	16,851.4	277
2017Q1	#####	16,903.2	278
2017Q2	#####	17,031.1	279
2017Q3	#####	17,163.9	280
2017Q4	#####	17,271.7	281