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Re: Global Water – Palo Verde Utilities / Rates
SW-20445A-09-0077, et al.
Volumes I through V, Concluded
December 14 through 28, 2009

## STATUS OF ORIGINAL EXHIBITS

### *FILED WITH DOCKET CONTROL*

Global Utilities (A Exhibits)

1 through 52

Residential Utility Consumer Office (RUCO Exhibits)

1 through 8

Staff (S Exhibits)

1 through 11

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## *LATE-FILED EXHIBITS*

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Mr. Wesley Van Cleve, Staff
Mr. Daniel Pozefsky, RUCO

# EXHIBIT A-12

**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

| | |
|---|---|
| IN THE MATTER OF THE APPLICATION OF GLOBAL WATER – PALO VERDE UTILITIES COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES FOR UTILITY SERVICE DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTY THROUGHOUT THE STATE OF ARIZONA. | DOCKET NO. SW-03575A-09- |

Direct Testimony

of

Matthew J. Rowell

February 20, 2009

EXHIBIT
A-12
ADMITTED

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## I. Introduction.

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

A. My name is Matthew J. Rowell. My business address is 9808 S. 45th Place, Phoenix, Arizona. For the purposes of this testimony, "Global Water", "Global Utilities", "Global Parent" and "Global Management" have the same definitions given in Mr. Hill's testimony.

**Q. Please describe your experience and qualifications.**

A. I received a Bachelor of Science degree in Economics from Florida State University in 1992. I spent the following four years doing graduate work in economics at Arizona State University where I received a Master of Science degree and successfully completed all course work and exams necessary for a Ph.D. My specialized fields of study were Industrial Organization and Statistics. I was hired by the Arizona Corporation Commission in October 1996. I served on the Commission's Staff for just over ten years. For the last five years of my employment with the Staff, I held the position of Chief Economist. In my time on the Commission's Staff I was involved in a myriad of utility cases, ranging from energy rate cases, competitive telecommunications cases and the Commission's Water Task Force. Prior to my Commission employment I lectured on economics at Arizona State University, was employed as a statistical analyst for Hughes Technical Services, and I authored and co-authored several research papers for the Arizona Department of Transportation.

**Q. What topics do you address in your testimony?**

A. I address the following topics:

- I discuss the Global Utilities' proposal for single tariff pricing for the Global Utilities in the West Valley region, and I describe how single tariff pricing promotes consolidation of small utilities.
- I testify concerning the regulatory and rate implications of Global Water's ICFA agreements, including how those agreements are used to fund the consolidation of small utilities.
- I also testify concerning the Global Utilities' capital structure, return on equity, and overall cost of capital.

**Q. Please discuss the structure of the water industry in Arizona.**

A. The industry is highly fragmented. There are a few large water utilities or utility holding companies operating in Arizona, such as Arizona-American, Arizona Water Company, Algonquin Water Resources, the Robson Utilities, and Global Water. Generally, these are sophisticated entities with substantial resources. However, overall, Arizona has hundreds of water or wastewater companies. Many are small operations with limited technical, managerial or financial capabilities.

In my time at the Commission, I saw time and time again that small water or wastewater companies could cause significant problems. Thus, consolidation of these smaller utilities is often in the public interest. While I was at the Commission, I was part of the Commission's Water Task Force. The Water Task Force Report recommended consolidation of existing small utilities, and opposed the creation of new small utilities in many cases. I continue to stand by those recommendations. Indeed, time has only shown the importance of those policies, as the Commission has continued to see problems from small water and wastewater utilities, including the creation of such utilities in counties outside of AMAs where they avoid assured water rules, and build undersized plant that

relies on scarce groundwater resources. If large, consolidated utilities were the norm, the Commission would have a very strong ability to prevent them from such actions.

**Q. How is this goal of consolidation expressed in your testimony?**

A. My proposed regulatory treatment of ICFAs allows those agreements to be used as a tool to fund future acquisitions. And our single tariff pricing proposal also reflects this goal.

## II. Single Tariff Pricing.

**Q. What is single tariff pricing or rate consolidation?**

A. Rate consolidation is the use of the same rate structure for multiple utility systems, divisions, or entities.

**Q. Are you proposing single tariff pricing in this case?**

A. Yes. The Global Utilities propose consolidating the rates of its three utilities in the west valley: Water Utility of Greater Tonopah (WUGT), Valencia Water Company – Town Division and Valencia Water Company – Greater Buckeye Division.

**Q. Has the Commission approved rate consolidation in the past?**

A. Yes, in some cases, but in other cases it has been rejected. The decisions seem to be highly fact-specific.

**Q. What facts support consolidation?**

A. Most importantly, the customers of WUGT would face an extremely large rate increase without consolidation. WUGT has a small number of customers (about 360). The WUGT systems required substantial upgrades, including arsenic and fluoride treatment, Point of Use Treatment Systems and infrastructure mandated by Commission orders,

such as an additional storage tank for WUGT's Sunshine system. Without consolidation, rate recovery for these improvements would fall entirely on these few customers. Combined, the three utilities have 6,000 customers, and the infrastructure costs can be spread across this larger customer base.

Moreover, these three utilities are all located in the west valley, and each are served by operators from Global's West Valley regional center in Buckeye, Arizona. In other words, the employees are the same, and the general location is the same.

**Q. What are the benefits of rate consolidation?**

A. The main drivers for this consolidation are:

- Protects against unaffordable rates;
- Addresses small system viability issues;
- Promotes customer fairness with a consistent rate for a similar quality of service;
- Provides incentives for regionalization and consolidation; and
- Minimizes rate shock.

**Q. Please describe the goals of rate consolidation from a regulatory perspective.**

A. The EPA and NARUC report "CONSOLIDATED WATER RATES: Issues and Practices in Single-Tariff Pricing" states that the short term goals for rate consolidation focus on "enhancing the financial capacity of water systems and making rates more affordable for water customers" while the long term goals are "consolidating the management and operation of water systems, or "regionalization," to achieve multiple policy goals."[1] Both goals are served in this case. Consolidation will directly address affordability issues for WUGT's customers. In addition, these three utilities (along with two others) were

[1] *CONSOLIDATED WATER RATES: Issues and Practices in Single-Tariff Pricing* (Sept. 1999) at 6.

acquired by Global Water in 2006, and allowing rate consolidation after an acquisition will promote future acquisitions.

**Q. Can you describe the similarities of these three utilities?**

A. Yes. Each of these utilities is comprised of several systems and public water systems as detailed below:

| Utility | System | PWS | Connections |
|---|---|---|---|
| Water Utility of Greater Tonopah | | | |
| | B&D | 07-618 | 99 |
| | Dixie | 07-030 | 42 |
| | WPE #6 | 07-733 | 29 |
| | WPE #7 (Tufte) | 07-617 | 6 |
| | Garden City | 07-037 | 18 |
| | Roseview | 07-082 | 19 |
| | WPE #1 | N/A | 8 |
| | Sunshine | 07-071 | 144 |
| Valencia Water Company - Greater Buckeye Division | | | |
| | Bulfer | 07-114 | 92 |
| | Sonoran Ridge | 07-732 | 58 |
| | Sweetwater I /Sun Valley | 07-195 | 407 |
| | Sweetwater II | 07-129 | 95 |
| Valencia Water Co. - Town Division | | | |
| | Valencia | 07-078 | 5,438 |

**Q. The systems appear to be diverse in nature.**

A. Certainly the systems are different. They have different customer counts and densities and there are large distances between some of the systems. However, at a fundamental level, they are all groundwater systems, most have some requirement to provide treatment

(for arsenic and/or fluoride) and all receive shared operations and management services from Global Water's staff.

The Joint EPA and NARUC report provides some technical background on the reasoning behind the applicability of consolidated rates despite some on-the-surface differences.

**Q. How does rate consolidation promote regionalization and consolidation of water utilities?**

A. As noted in the Joint EPA / NARUC report, "Single-tariff pricing can be an incentive for larger water utilities to acquire small water systems that lack capacity because it makes it possible to spread costs over a larger service population and maintain more stable and affordable rates for customers of some smaller and more expensive systems."[2] The report also comments that "pricing is intrinsically related to structural change in the water industry" and that pricing policies like rate consolidation "ultimately will play a role in shaping the future structure of the water industry, including but not limited to the future of small water systems."[3] Given the structure of the water industry in Arizona (numerous small utilities), the need for such policies is urgent.

**Q. Can rates be consolidated, even though the systems are not interconnected?**

A. Certainly. WUGT consists of 8 separate systems with common rates, and Valencia Water Company – Greater Buckeye Division consists of 4 separate systems with common rates. In the past, the separate WUGT and Greater Buckeye systems had separate rates, but the Commission later approved consolidated rates for those utilities. Our proposal simply takes this process one step further.

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[2] Id. at vii.
[3] Id. at 28.

## III. ICFA agreements.

### A. Introduction to ICFAs.

**Q. Please provide some background concerning the ICFA agreements.**

A. The ICFA agreements are voluntary agreements entered into between developers and Global Parent. Mr. Hill describes the ICFA agreements in greater detail in his testimony. My testimony will concern the regulatory and rate treatment of ICFAs.

**Q. Please comment on the ICFA fees.**

A. The ICFAs are negotiated agreements between Global Parent and developers/landowners and thus the details of each ICFA are somewhat different. However, each ICFA provides for the developer to pay fees to Global Parent as certain milestones are met. A substantial portion of these fees is due upon approval of the final plat of the development. "Final plat approval" is the point in the development process when a map showing the location of actual lots is approved by the planning authority[4] and grading of the land can start. Thus, the developer has a high degree of control over when the payments are due.

**Q. What is the purpose of the ICFA fees?**

A. The ICFA fees have been used to partially offset the carrying costs of investing in growing service areas. They have also been used to pay (some or all) of the purchase price of utilities.

[4] Depending on the location the "planning authority" is the city or county.

**B. Using ICFA fees to offset carrying costs.**

**Q. Please explain exactly what is meant by the term "carrying cost."**

A. The concept of carrying costs is that capital is not free. In other words, capital has a cost. This fundamental principle is at the core of finance and economics. Carrying costs represent the cost of capital over time, sometimes called the "time value of money." Calculating total carrying costs requires two steps: determining how expensive the capital is (the "cost of capital" rate) and determining how long those expenses will be incurred. Calculating the cost of capital requires considering the cost of equity and the cost of debt. Devoting equity capital to a particular project means that other uses of that capital are foregone. This is why capital costs are considered an opportunity cost. The foregone return associated with these foregone investments is a real economic cost and is typically referred to as the cost of equity. If borrowed funds are devoted to a project, the interest paid on those funds is the cost of debt. A weighted average of the cost of debt and equity determines the overall cost of capital.

In a ratemaking context, the authorized rate of return is designed to compensate utilities for the cost of capital associated with plant that has been determined to be used and useful. However, whether or not the plant has been determined to be used and useful, the utility still incurs the cost of capital. For instance, plant under construction is generally not considered to be used and useful, but regulatory commissions have recognized the cost of capital associated with that plant and in some instances allow for its recovery through an allowance for funds used during construction ("AFUDC").

Global Water's commitment to implementing Total Water Management and building plant on a regional basis requires large amounts of plant to be built before the anticipated customers are hooked up. This results in a large amount of capital costs (*i.e.*, carrying

costs) that are unrecoverable. Typically, AFUDC only covers the time period over which construction is actually taking place. This does not address the time period after the plant is built but before it is included in rate base.

**Q. Please provide an example.**

A. In their first six years of operations, Palo Verde and Santa Cruz went from zero customers to more than 16,500 customers. Palo Verde and Santa Cruz added approximately $136 million of infrastructure in these first six years. If customers covered these carrying costs – or if this plant was added to rate base before many customers joined the system – rates would have skyrocketed. But doing nothing would have made integrated, regional systems unaffordable. Global Parent would likely not be able to offset the carrying costs on this $136 million for years.

**Q. Can you provide an example of how ICFAs protect ratepayers from the risks associated with implementing the Total Water Management approach in service areas with erratic growth patterns?**

A. Yes. I believe the infrastructure built over the past few years in the Southwest Maricopa area provides a good example of the protections the ICFA model provides to customers. In Decision No. 68448 (November 21, 2005) the Commission granted a CC&N extension to Santa Cruz and Palo Verde that covers the 12.5 square mile area referred to as the Southwest Maricopa area. Several developers in the area who were in the process of developing master planned communities had requested water and wastewater service. Subsequent to the CC&N being granted Global Water installed a total of $32,391,318 in plant.[5] As we are all well aware, growth in Arizona has slowed. This has impacted the Maricopa region, including a dramatic impact in the Southwest Maricopa area. The plant

[5] $17,941,342 for Santa Cruz and $14,449,976 for Palo Verde, see Attachment MJR 1 for a break out of these capital costs..

Global Water emplaced in the region now sits dry and unused. If this unused plant were included in this rate case it would have resulted in an additional annual rate impact of $5,674,586 above the current rate request.[6]

However, the Global Utilities have decided not to seek recovery of a return on the Southwest Maricopa plant.

Rather than ask ratepayers to shoulder the burden of this unused plant, Global Parent will continue to bear the significant carrying costs associated with that plant. The ICFA revenue received from developers in the Southwest Maricopa region provide a partial offset to these carrying costs. Were it not for that offset provided by the ICFA fees, the prospect of continuing to carry the unused plant at Global Parent would be daunting. Keeping the plant out of the Global Utilities' rate bases is only financially feasible for Global Parent with the ICFA revenues. This is a perfect example of how the ICFA model protects the Global Utilities and their ratepayers from the inevitable vagaries of serving high growth areas.

**Q. Do the carrying costs of the Southwest plant exceed the ICFA revenue from this area?**

A. Yes. Using the requested weighted average cost of capital for Palo Verde (8.34%) as a proxy for carrying costs, $32,391,318 in plant has an annual carrying cost of $2,702,084. This case will last through 2010, and that plant would likely not be included in rates for at least several more years after that. Calculating the total carrying costs from the time the plant was completed, 2008, through year end 2015 provides a total carrying cost amount

[6] See Attachment MJR 2 for calculation of this rate impact.

of $29,098,528.[7] Global Parent received $5,705,142 in ICFA revenues for this plant; this is clearly less than the carrying costs of this plant.

**Q. Isn't it true that Global Parent stands to collect substantially more from the ICFAs in the Southwest region than the $5.7 million cited above?**

A. It is true that Global Parent could collect up to $94.8 million from the ICFAs in the Southwest region (first expansion area.) However, these additional payments will only occur when the relevant sections are close to being developed, and they may never occur at all. Additionally, serving these additional sections will require significant *additional* capital investments over and above the $32 million discussed above. Global Water estimates it will cost $237.5 million to completely build out the first expansion area of the Southwest region. Using a build out schedule that assumes steady customer growth of 200 customers a month results in the first phase of the Southwest region being complete after 12 years. The total carrying costs associated with such a build out schedule come to $143.9 million. Of course, the amount of the carrying costs depend heavily on the schedule. If build out of the region occurs at a slower pace, the carrying costs could be much higher. (Currently there is no construction taking place in the Southwest region and Global does not for see construction starting in the near future.)

**Q. Is not your above example a false analogy? If the Global Utilities sought to include the Southwest Maricopa plant in their rate bases could not the Commission exclude it based on the premise that it is not used and useful?**

A. It could be argued that the normal regulatory ratemaking process would result in the exclusion of the Southwest Maricopa plant and thus my above example is invalid. However, the specific facts associated with the emplacement of the Southwest Maricopa plant would make it difficult to support the argument that it should be excluded on a used

[7] Assuming that carrying costs compound annually.

and useful basis. In Decision No. 68448, the Commission specifically ordered Palo Verde and Santa Cruz to acquire Approvals of Construction ("AOCs") from the Arizona Department of Environmental Quality ("ADEQ") for the plant in question by December 31, 2007.[8] Acquiring an AOC from ADEQ requires substantial completion of the plant in question, so the Commission effectively ordered the utilities to have the plant built by year-end 2007. It would be difficult to argue that plant built in order to comply with the specific provisions of a Commission order can be excluded from rate base on a used and useful basis.

Additionally, even if exclusion of the Southwest Maricopa plant were appropriate, the above described situation would still serve as an example of the benefits of ICFAs. Implementing the Total Water Management approach requires massive plant investments. Making those investments is a daunting undertaking with substantial risk, since future growth rates are unpredictable (and thus there is no guarantee that plant investments will be used and useful.) Without the offset to these risks provided by the ICFAs, investments in the Total Water Management approach would be extremely difficult to make.

**C. Using ICFA fees to fund acquisitions.**

**Q. You have discussed the *first use of ICFA fees, to offset carrying costs.* Please address the second use, to fund acquisitions.**

A. ICFA fees have been used to fund (in whole or part) the acquisitions of Francisco Grande Utilities Company, CP Water Company, and the five West Maricopa Combine utilities. These utilities were all small, under-capitalized utilities. Developers and customers both benefited from these utilities being taken over by a larger entity with greater technical,

[8] An extension of time was granted for the Terrazzo Water Distribution Center until August 31, 2008. The AOC for this facility was received and filed by that date.

managerial, and financial resources. As I explained at the beginning of my testimony, consolidation of these small operations is in the public interest. The ICFA agreements provide a new tool that can be used to further those ends.

**Q. How would promoting consolidation through ICFAs impact rates?**

A. It would not impact customer rates. For example, suppose that a small, under-capitalized utility (let's call it "SmallCo") has a rate base of $10,000 and annual expenses of $10,000. Assuming a 10% rate of return, SmallCo's revenue requirement is:

(10% return on Rate Base) + Operating Expenses = Required Revenue

(10% * $10,000) + $10,000 = $11,000

Suppose that SmallCo is purchased by a larger utility holding company (HoldCo) for $100,000. If HoldCo asked for and received an acquisition adjustment to reflect the purchase price, SmallCo's revenue requirement would be:

(10% return on Adjusted Rate Base) + Operating Expenses = Required Revenue

(10% * $100,000) +$10,000 = $20,000

In that scenario, rates nearly doubled. But if HoldCo financed the purchase price through an ICFA, the rates would stay the same:

(10% return on Rate Base) + Operating Expenses = Required Revenue

(10% * $10,000) + $10,000 = $11,000

Thus, ICFAs can provide a way of funding needed consolidation without impacting ratepayers.

**Q. What would happen to consolidation if ICFA fees were treated as advances or contributions (AIAC or CIAC)?**

A. In that case, there would be a strong disincentive to consolidating. HoldCo would likely not make the purchase. If the ICFA fees were treated as AIAC or CIAC, HoldCo would not receive any return on its $100,000 investment. SmallCo's rate base would drop from $10,000 to ($90,000). Further, if HoldCo invested $50,000 in improvements to SmallCo's system, HoldCo would not receive a return on that investment either, because SmallCo's rate base would still be negative. So treating acquisition-related ICFA fees as contributions or advances creates a substantial disincentive against purchasing SmallCo.

From a regulatory perspective, it doesn't make sense to create a disincentive for engaging in an activity (in this case, consolidation) that the regulator wants to promote. Further, from a ratemaking perspective, I don't think that treating acquisition-related ICFA fees as contributions or advances makes a lot of sense either, because the fees neither increase nor decrease the investment in plant. Traditionally, the Commission looks to the cost of plant "at the time it was first devoted to public service", rather than adjusting that cost to reflect subsequent transactions.[9] Thus, treating ICFA fees used for acquisitions as contributions or advances is not consistent with the Commissions long practice of not allowing acquisition adjustments. In fact, treating ICFA fees used for acquisitions as contributions or advances is equivalent to imposing a negative acquisition adjustment.

**D. Regulatory treatment of ICFA fees.**

**Q. Are the ICFA fees different from hook up fees?**

[9] A.A.C. R14-2-102.A.6 (defining "original cost"); see also A.A.C. R14-2-103.A.3.3 (defining "depreciated original cost").

A. Yes. Hook up fees require that developers (or end use customers) contribute to the water or wastewater utility. Hook up fees are specifically designed to cover actual plant investment. The ICFA fees, however, are not covering actual plant investment. Global Parent makes that investment. ICFA fees partially offset Global Parent's carrying costs. Another key difference is that hook-up fees are typically not taxable income for water or wastewater utilities. In contrast, Global Parent pays taxes on the ICFA fees. A final key difference is that hook-up fees are mandatory tariffed fees paid to the regulated utility. In contrast, ICFAs are purely voluntary, and the ICFA fees are not paid to the regulated utility. The ICFA fees are the result of voluntary negotiations between Global Parent and developers and landowners.

**Q. Should the ICFA fees be treated as advances or contributions (AIAC or CIAC?)**

A. No. The per EDU fees contained in ICFAs are intended to offset the carrying costs of plant investments *not* the actual plant investment itself. Advances and contributions are designed to cover the actual plant investment itself. Also, Global Parent pays a significant amount of tax on the per EDU fees collected through the ICFAs. Water and wastewater main extension agreements that create AIAC and CIAC typically include "gross-up" provisions that apply should those fees be found to be taxable. In contrast, ICFA fees cannot be grossed-up.

**Q. What effect does the ICFA method of financing have on utilities' balance sheets (compared to traditional advances or contributions in aid of construction)?**

A. The ICFAs do not have any direct impact on the utilities' balance sheets. The funds received through the ICFAs are revenues for Global Parent that help offset some of the carrying costs of plant construction, or acquisition payments for the purchase of other utilities. Because of this, Global Parent has been able to invest equity in plant which implements the "Total Water Management" conservation strategy for its subsidiary

utilities, strengthening their balance sheets. Contrarily, AIAC and CIAC are investments in plant made by the developers, and over reliance can result in the weakening of a utility's balance sheet.

**Q. But don't contributions and advances keep rates low by reducing rate base?**

A. Yes. In moderation, advances and contributions are an important part of a utility's capital structure. Santa Cruz and Palo Verde have over $24 million in advances. These advances result from traditional main extension agreements for "on-site" facilities within a development. So, I am not arguing that utilities should not have some contributions and advances. But excessive contributions and advances can result in an unbalanced capital structure. The result is a financially weak utility – which can imperil service to customers. In fact, Staff recommended in its Report issued October 6, 2006 in Docket No. W-00000C-06-0149 that advances and contributions be limited to 30% of total capital.

**Q. Should the fees collected under the ICFAs be treated as advances or contributions for ratemaking purposes?**

A. The fees collected under ICFAs should not be treated as advances or contributions. They do not fit the definition of what is an advance or contribution for ratemaking purposes.

The Commission's regulations at A.A.C. R14-2-401 define Advance in Aid of Construction as "Funds provided to the utility by the applicant under the terms of a main extension agreement the value of which may be refundable." The ICFA fees are not refundable so they certainly cannot be considered to be advances. The same rule defines Contributions in Aid of Construction as "Funds provided to the utility by the applicant under the terms of a main extension agreement and/or service connection tariff the value of which are not refundable." (Where applicant is defined as "A person requesting the

utility to supply water service.") The ICFA fees do not fit the definition of Contributions in Aid of Construction because they are not provided to the utility and they are not provided under the terms of a main extension agreement or service connection tariff.

What is important to recognize about these fees is that they are paid directly to Global Parent, and allow Global Parent to bear the risk of coordinating the planning and construction of regional facilities and carry forth its commitment towards water conservation (Total Water Management) and consolidation.

**Q. How should the fees collected through ICFAs be treated for ratemaking purposes?**

A. The fees collected through ICFAs should not be a factor in determining rates for the Global Utilities.

**E. Alternatives to ICFAs.**

**Q. Are there more traditional alternatives to Global's model of infrastructure deployment?**

A. Of course there are multiple alternative methods that could be used to implement the goal of deploying infrastructure on a regional basis. However, recent experience indicates that financing the deployment of large scale infrastructure through the traditional means of AIAC and CIAC can be problematic.

**Q. Can you provide an example of how the use of AIAC to fund large scale infrastructure deployment can be problematic?**

A. Yes. Providing water and waste water service to the Anthem master planned community required large scale infrastructure to be emplaced. Much of this plant was funded through an agreement between the developer (Del Webb Corporation) and the utility

(then Citizens Utilities Company.) The developer agreed to advance a considerable portion of the construction costs to Citizens on the condition that it be refunded as Anthem was built out. Such an arrangement has the effect of keeping water and waste water rates low initially (because the plant funded through advances is not included in rate base) but once the advances are refunded rates will rise as the advanced plant is included in rate base. Subsequent to the above arrangement being made Del Webb's interest in Anthem was acquired by Pulte Homes, Inc. and Citizens water and waste water utilities were acquired by Arizona-American, and the obligations of the arrangement transferred to these entities. As it turned out, Anthem actually achieved build out ahead of schedule and thus Arizona-American was saddled with a huge refund obligation to Pulte. This caused Arizona-American's Anthem Division rate base to skyrocket. A considerable rate increase was necessary to allow Arizona-American to earn a return on this increased rate base. This lead to a highly contentious rate case before the Commission where the anger of Anthem's residents was readily apparent. Even after the rate relief granted by the Commission, Arizona-American's Anthem Division is still not financially healthy.[10] In addition to the contentious rate proceeding before the Commission the need for a rate increase led to Anthem residents pursing a lawsuit against Pulte.

**Q. Can you provide an example of how the use of CIAC to fund large scale infrastructure deployment can be problematic?**

A. Yes. In its Agua Fria District, Arizona-American planned on using (non-refundable) hook-up fees to entirely fund a new surface water treatment plant necessary to serve new developments in the area around the White Tank Mountains. In Decision No. 69914, the Commission approved an increase in hook-up fees for Arizona-American's Agua Fria

[10] For more detail on the Arizona-American Anthem rate case see Commission Decision No. 70372.

District in order to allow Arizona-American to effectuate its plan to fund construction of that plant entirely through hook-up fees. As it turned out, the slow-down in development has led to receipts from hook-up fees being far below what was expected. Now that the hook-up fees have slowed to a trickle, Arizona-American must either seek to include the plant in rate base (and thus increase rates for current customers) or live with the considerable carrying costs associated with the new plant. Arizona-American did seek to include $25 million of Construction Work in Progress ("CWIP") associated with the White Tanks plant in rate base in its most recent rate case filing. Staff is opposing inclusion of the CWIP in rate base on the grounds that the intent of Decision No. 69914 was "that the plant would be entirely funded through hook up fees and the ratepayers would not be burdened with its cost. The inclusion of CWIP in rate base would effectively reverse the intent of the previous order."[11] So the use of a CIAC mechanism (hook-up fees) to fund new plant has resulted in contentious rate case issues and Arizona-American may end up with a $25 MM+ plant, no rate recovery, and only a trickle of hook-up fees to cover the carrying costs.

**Q. In your opinion, is the goal of implementing regionally sized water and wastewater infrastructure that is designed to promote conservation through the use of recycled water possible without the use of ICFAs?**

A. I believe some form of innovative financing arrangement is necessary for the implementation of Global Water's Total Water Management program. For that matter, any water utility that plans on emplacing a regionally sized water and/or wastewater system would need to employ innovative methods to finance such plant. The traditional methods of funding water and wastewater plant (e.g., main extension agreements) simply will not work when it comes to regionally sized plant. Other financing arrangements have been tried and have proven to be problematic (see above.) A close examination of

[11] Direct Testimony of Gerald Becker, Docket number W-01303A-08-0227, page 18, line 9.

the ICFA concept reveals no such potential downside. In summary, in order to make regionally sized infrastructure possible, some form of innovation is necessary; ICFAs are an innovative financing technique that have no potential down side for ratepayers; therefore, the use of ICFAs should not be discouraged.

## IV. Cost of Capital.

### A. Introduction to Cost of Capital.

**Q. What is the purpose of your cost of capital testimony?**

A. The purpose of this testimony is to provide recommendations regarding the capital structure to be used for each of the Global Utilities involved in this rate case. This testimony also includes recommendations regarding the cost of equity that is appropriate for use in this rate case. I will also discuss the overall rate of return recommended for the Global Utilities in this rate case.

**Q. Please describe how your cost of capital testimony is organized?**

A. My testimony includes recommendations and analysis regarding the cost of equity, the capital structure and the overall rate of return. Mr. Barber's testimony will deal with the cost of debt.

**Q. What is the overall rate of return the Global Utilities are recommending?**

A. Since the Global Utilities do not have uniform capital structures the overall rates of return for each utility will vary. The following chart summarizes the Global Utilities' recommended overall rate of return for each utility.

| Utility | Overall R O R |
|---|---|
| Palo Verde | 8.34% |
| Santa Cruz | 8.49% |
| West Valley – Consolidated[12] | 9.81% |
| Willow Valley | 9.24% |

**B. Capital Structure and the Weighted Average Cost of Capital.**

**Q. Please define the term "Cost of Capital."**

A. The cost of capital is the (risk adjusted) opportunity cost associated with choosing one investment over others. In other words, it is the return on an investment necessary to attract investors to an enterprise. For example, a given enterprise seeking to attract investors must provide a return at least equal to the return being provided by similar (in terms of risk) other enterprises.

**Q. Please define the term "Weighted Average Cost of Capital" or "WACC."**

A. Firms raise capital from various sources e.g., debt and equity. Because each source of capital has different risk characteristics, the cost of capital associated with each source will be different. Generally, debt is less risky than equity, thus the cost of a firm's debt is less than the cost of the same firm's equity. The WACC is a cost of capital for the whole firm that is derived by weighting the cost of capital associated with each source of capital by its share in the firm's overall capital structure. For example, suppose a firm has a capital structure consisting of 50% debt and 50% equity, a cost of debt of 5% and a cost of equity of 10%. Its WACC is:

[12] Includes Valencia Town Division, Valencia, Greater Buckeye Division and Water Utility of Greater Tonopah.

(Cost of Debt x Debt % of Capital Structure) + (Cost of Equity x Equity % of Capital Structure)

$$(5\% \times 50\%) + (10\% \times 50\%) = 7.5\%$$

Suppose the firm has 25% debt and 75% equity, then its WACC is:

(Cost of Debt x Debt % of Capital Structure) + (Cost of Equity x Equity % of Capital Structure)

$$(5\% \times 25\%) + (10\% \times 75\%) = 8.75\%$$

So changes in a firm's capital structure (i.e., the relative amount of debt and equity that make up its total capital) have significant impacts on the WACC.

**Q. Please define the term "Overall Rate of Return."**

A. The term "Overall Rate of Return" is synonymous with WACC.

**Q. Why is the concept of cost of capital important for utility ratemaking?**

A. A firm's overall rate of return is used as the return applied to its rate base in order to come up with a revenue requirement. The basic formula used to develop a utility's revenue requirement is:

Revenue Requirement = (Rate Base x Overall Rate of Return) + Operating Expenses

Given that utility rate bases are generally quite large, even small changes in the rate of return can result in significant swings in revenue.

**Q. Please describe the capital structures of the Global Utilities.**

A. Palo Verde and Santa Cruz have 100% equity on their books. However, as the Commission is aware, Global Parent issued IDA bonds to fund investment in certain projects for Santa Cruz and Palo Verde. The Global Utilities have agreed to impute that IDA debt to Santa Cruz and Palo Verde, as discussed below. The other Global Utilities have WIFA debt.

**Q. Do you propose any modifications to the capital structures of the utilities for ratemaking purposes?**

A. Yes. From 2006 through 2008 Global Parent acquired a total of $115,180,000 in bond financing from the Industrial Development Authority of Pima County. These "IDA bonds" were issued in three series: 2006, 2007 and 2008. At the time each series of bonds was issued specific projects were identified by Global Parent as being funded by the bond issuance. These projects were all capital expansions and improvements to Santa Cruz's water system and Palo Verde's wastewater and recycled water systems. Attachment MJR 3 provides the detail of these projects by series. The Global Utilities have agreed to impute this IDA bond debt into the capital structures of Palo Verde and Santa Cruz for the purposes of this rate case.

**Q. Is it typical for IDA bond proceeds to be allocated to specific projects?**

A. Yes. IDA bonds are issued pursuant to A.R.S. §§ 35-701 thru 35-761. This legislation calls for the identification of specific projects to be funded by the IDA bonds.

**Q. Can you provide some background on IDA bonds?**

A. The idea behind IDA bonds is that tax-free bonds encourage the building of facilities. So, as stated above, IDA bonds must be tied to specific infrastructure projects.

For each IDA bond issuance, an "Engineer's Feasibility Report" must be generated that describes the projects that will be undertaken, and issues an opinion that the project is appropriate and will likely generate sufficient funds to pay off the bonds.

Technically, the Industrial Development Authority of Pima County ("IDAPC") issued the bonds, and Global Parent borrowed the proceeds from the IDAPC. However, the IDAPC is not actually liable for paying the bonds off (except for the funds actually received from Global Parent – which are paid directly to a trustee who administers the process).

There are numerous public approvals that are needed before IDA bonds can be issued:

- Approval from the Arizona Department of Commerce (only a limited amount of tax free bonds can be issued each year; the Department of Commerce controls the allocations).
- Approval from Industrial Development Authority of Pima County Board of Directors.
- Approval from the Pima County Board of Supervisors.

**Q. How do you propose to allocate the IDA bond debt between the capital structures of Palo Verde and Santa Cruz?**

A. As stated above, at the time the IDA bonds were issued their proceeds were allocated to specific capital improvement projects. I believe a fair way to allocate the debt between Palo Verde and Santa Cruz is to divide the value of the total IDA bonds outstanding based on the relative value of the Palo Verde and Santa Cruz capital projects identified at the time the IDA bonds were issued. Using this method I have determined that 55% of the IDA bond debt should be allocated to Palo Verde and 45% should be allocated to Santa Cruz. Attachment MJR 4 details how these percentages were calculated.

**Q. Given these allocations, what capital structures do you recommend for Palo Verde and Santa Cruz?**

A. As of the end of the test year there was $115,180,000 in IDA bonds outstanding. Dividing that between Palo Verde and Santa Cruz using the above percentages results in the following debt levels for the two companies:

| | Allocation Percent | Total Debt | Allocated Debt |
|---|---|---|---|
| **Palo Verde** | 55% | $115,180,000 | $63,529,266 |
| **Santa Cruz** | 45% | | $51,650,734 |

At the end of the test year the companies had the following equity positions:

| | Total Equity |
|---|---|
| **Palo Verde** | $76,564,739 |
| **Santa Cruz** | $65,933,751 |

Combining these equity numbers with the above allocated debt numbers results in the following capital structures:

| | Debt | Equity |
|---|---|---|
| **Palo Verde** | 45% | 55% |
| **Santa Cruz** | 44% | 56% |

**Q. Please describe how the above equity numbers were derived.**

A. Since Palo Verde and Santa Cruz (and the other Global Utilities) are not publicly traded companies, there is no publicly traded equity to use as the equity component in their capital structures. Rather, the above equity numbers were derived from the total members' equity in the utilities.

**Q. Is imputing debt from a parent into its subsidiary companies typically considered an appropriate ratemaking procedure?**

A. No. Imputing debt to a subsidiary violates the fundamental principle that an investment's required return should be based on *its* risk, not on the parent company's financing costs. Imputation of parent level debt into a subsidiary essentially adjusts the subsidiary's capital structure (and thus its overall rate of return) to account for the parent's source (and hence cost) of financing.

**Q. Given that it is not considered appropriate ratemaking to impute parent level debt to subsidiaries, why are you advocating imputation of the IDA bonds to Palo Verde and Santa Cruz?**

A. *Global Water is cognizant of the potential for rate shock resulting from this rate case. Imputing the IDA bonds to Palo Verde and Santa Cruz will serve to pull down the overall rate of return and thus mitigate the necessary rate increase. While this outcome is not optimal for the Global Utilities, it is acceptable.*

**Q. Please summarize your recommendations regarding the capital structures of the Global utilities.**

A. The proposed capital structures for the Global Utilities are provided in the following chart:

| Utility | Debt | Equity |
|---|---|---|
| Palo Verde | 45% | 55% |
| Santa Cruz | 44% | 56% |
| Valencia – Town Division | 13% | 87% |
| WUGT | 2% | 98% |
| Valencia Greater Buckeye Division | 8% | 92% |
| West Valley - Consolidated[13] | 6% | 94% |
| Willow Valley | 17% | 83% |

See Attachment MJR 5 for derivation of the capital structures of Valencia, WUGT, and Willow Valley.

**C. Cost of Equity.**

**Q. Have you performed an independent cost of equity analysis for the Global Utilities?**

A. No.

**Q. Please explain why you are not presenting an independent cost of equity analysis for this rate case?**

A. Developing an independent cost of equity recommendation is a time consuming and expensive task. Arguments regarding return on equity can also take up a considerable amount of time at a hearing. Such lengthy arguments are costly both in terms of dollars for the Global Utilities and in terms of time for Global Water personnel attending the hearing. The Commission, Staff, the Hearing Division, and interveners also bear a burden in terms of time and dollars from lengthy arguments in a hearing and in

[13] Includes Valencia Water Company - Town Division, Valencia Water Company - Greater Buckeye Division and Water Utility of Greater Tonopah.

developing pre-filed testimony. Usually, the utility's costs of that analysis and debate are returned to the utility as 'rate case expense' – borne by customers.

Thus, the Global Utilities decision to not provide a full cost of capital analysis is based on a desire to simplify the case and reduce the time and expense for all parties.

**Q. Given that the Global Utilities are not providing an independent cost of equity analysis, how do you propose that the cost of equity be determined?**

A. We have used a cost of equity of 10.0% to develop our proposed rates in this case.

**Q. How was the 10.0% cost of equity number derived?**

A. On January 12, 2009, Arizona Corporation Commission Staff filed testimony in the Arizona-American rate case (Docket No. W-01303A-08-0227.) Staff's outside expert, Mr. Parcell, presented Staff's cost of equity analysis and recommendations. Mr. Parcell recommended an unadjusted cost of equity of 10.0% for Arizona-American. The Global Utilities propose to simply adopt Mr. Parcell's analysis and recommendations regarding cost of equity from the 08-0227 docket and use them in this case.

**Q. Do you believe that Arizona-American and the Global Utilities are sufficiently similar that Staff's recommendation in the 08-0227 case can simply be adopted here?**

A. The Global Utilities and Arizona-American are similar in that they both operate several water and sewer utilities at various locations across Arizona. Mr. Parcell's recommendation is based on a generic return on equity determined by his sample group of water utilities. He did not make any specific adjustments to modify that generic return to Arizona-American. Because no specific adjustments were made, that generic return can also be applied to the Global Utilities.

**Q. Is it appropriate to use a single cost of equity for all of the Global Utilities?**

A. Theoretically, each utility should be assigned a separate cost of equity due to variances in the risk each utility is exposed to. However, for the sake of procedural simplicity, the Global Utilities are willing to use a single cost of equity for all of the utilities involved in this case.

**Q. Are you familiar with Staff's cost of equity methodology?**

A. Yes. Staff's standard approach for calculating cost of equity for water and wastewater utilities starts with determining a sample of publicly traded utilities for which substantial information is publicly available. The sample of utilities is meant to be similar to the utility applying for rates. Staff then applies two different versions of the discounted cash flow ("DCF") model (constant growth DCF and multi-stage growth DCF) and two different versions of the capital asset pricing model ("CAPM") (historical CAPM and current market premium CAPM) to the sample of utilities. Staff averages the results of these four financial models to come up with their cost of equity. The data input into these models changes over time and thus must be updated regularly (e.g., the sample utilities' stock prices.)

Similar to Staff's recent practice, Mr. Parcel developed a sample of utilities to use as a proxy group and then applies three different financial models to that sample and averages their results to obtain his cost of capital estimate. However, Mr. Parcell's testimony departs from the standard Staff methodology in several respects. First, Mr. Parcel uses a different methodology to develop his sample of utilities. Second, the financial models David C. Parcell uses are somewhat different from those described above. Mr. Parcel averages the results of the DCF (constant growth version only), the CAPM (historical version only), and the comparable earnings method.

**Q. Are you in total agreement with Staff's cost of equity methodology?**

A. No. There are different perspectives on Staff's methodology that could be raised and that have been raised by other utilities. Moreover, as noted above, there are differences between Staff's standard methodology and Mr. Parcell's approach in the 08-0227 docket. I am not testifying in full support of either the standard staff methodology, or Mr. Parcell's alternate methodology. However, I am testifying that the Global Utilities are willing to accept the 10% return from the 08-0227 docket, as a method of simplifying the case, reducing litigation costs for all concerned, and as a method of limiting the amount of the rate increase during these difficult times.

**D. Cost of Debt.**

**Q. What is the cost of debt associated with the IDA bonds?**

A. Mr. Barber provides detailed testimony on the cost of debt. Each series of IDA bonds has a different interest rate. To allocate the interest cost to Palo Verde and Santa Cruz, I used the allocation method discussed above to derive a cost of debt of 6.34% for Palo Verde and 6.57% for Santa Cruz. See Attachment MJR 6 for derivation of these debt costs.

**Q. What is the cost of debt for the other Global Utilities?**

A. As discussed in the testimony of Mr. Barber, the cost of debt for the other Global Utilities is as follows:

| | |
|---|---|
| Valencia - Town Division: | 6.73% |
| Valencia – Greater Buckeye: | 6.38% |
| Water Utility of Greater Tonopah | 6.30% |
| West Valley Consolidated: | 6.64% |
| Willow Valley: | 5.48% |

**E. Overall Rate of Return.**

**Q. Please discuss the overall rates of return you are recommending for the Global Utilities.**

A. The above discussions provided the cost of equity, the cost of debt and the capital structures of the Global Utilities. With these numbers calculating the overall rates of return is a simple mechanical process. The overall rates of return used to develop the revenue requirements of the Global Utilities are presented below:

**Palo Verde**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 45% | 6.34% | 2.88% |
| **Equity** | 55% | 10.00% | 5.47% |
| **Overall Cost of Capital/ROR** | 8.342% | | |

**Santa Cruz**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 44% | 6.57% | 2.89% |
| **Equity** | 56% | 10.00% | 5.61% |
| **Overall Cost of Capital/ROR** | 8.49% | | |

**Valencia (Town Division)**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 13% | 6.73% | 0.90% |
| **Equity** | 87% | 10.00% | 8.66% |
| **Overall Cost of Capital/ROR** | 9.56% | | |

**West Valley (Consolidated)**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 6% | 6.64% | 0.38% |
| **Equity** | 94% | 10.00% | 9.43% |
| **Overall Cost of Capital/ROR** | 9.81% | | |

**Valencia (Greater Buckeye Division)**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 8% | 6.38% | 0.50% |
| **Equity** | 92% | 10.00% | 9.21% |
| **Overall Cost of Capital/ROR** | 9.72% | | |

**Water Utility of Greater Tonopah**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 2% | 6.30% | 0.10% |
| **Equity** | 98% | 10.00% | 9.85% |
| **Overall Cost of Capital/ROR** | 9.94% | | |

**Willow Valley**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| **Debt** | 17% | 5.48% | 0.91% |
| **Equity** | 83% | 10.00% | 8.33% |
| **Overall Cost of Capital/ROR** | 9.24% | | |

**Q. Does this conclude your Direct Testimony?**

A. Yes.

# Rowell Exhibits

# MJR 1

**Exhibit MJR-1**

| **Santa Cruz** | | |
|---|---|---|
| 320 - Southwest Area Water Treatment Plant | $ | 7,509,708 |
| 320 - Terrazo Water Distribution Center | | 139,161 |
| 331 - Amarillo Creek Lines & Upgrades | | 10,292,473 |
| **Total** | $ | 17,941,342 |

| **Palo Verde** | | |
|---|---|---|
| 380 - 05-036 SW Area WRF | $ | 14,151,504 |
| 360 - 05-064 Green (Ptrs-ValVista) | | 4,208 |
| 360 - 05-065 Papago (Wht - Grn) | | 17,880 |
| 360 - 05-074 Amarillo Crk Oversizing | | 276,384 |
| **Total** | $ | 14,449,976 |

# MJR 2

**Exhibit MJR 2**

**Calculation of Rate Impacts of Southwest Maricopa plant exclusions**

**Palo Verde**

| | | With SW Plant | Without SW Plant | |
|---|---|---|---|---|
| 1 | Adjusted Rate Base | $78,087,806 | $63,637,830 | |
| 2 | Requested Rate of Return | 8.340% | 8.340% | |
| 3 | Requested Operating Income | $6,515,523 | $5,307,395 | L1*L2 |
| 4 | Adjusted current operating Income (loss) | $(292,937) | $145,187 | |
| 5 | Operating Income Deficiency | $6,805,460 | $5,162,208 | L3-L4 |
| 6 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | |
| 7 | Increase in Gross Rev. Requirements | $11,195,567 | $8,492,276 | L6*L5 |
| | Difference | $2,703,291 | | |

**Santa Cruz**

| | | With SW Plant | Without SW Plant | |
|---|---|---|---|---|
| 1 | Adjusted Rate Base | $63,202,261 | $45,260,919 | |
| 2 | Requested Rate of Return | 8.490% | 8.490% | |
| 3 | Requested Operating Income | $5,365,872 | $3,842,652 | L1*L2 |
| 4 | Adjusted current operating Income (loss) | $1,686,467 | $1,969,411 | |
| 5 | Operating Income Deficiency | $3,679,405 | $1,873,241 | L3-L4 |
| 6 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | |
| 7 | Increase in Gross Rev. Requirements | $6,052,938 | $3,081,643 | L6*L5 |
| | Difference | $2,971,295 | | |

**Total Difference** $5,674,586

# MJR 3

**Exhibit MJR 3**

**Capital projects associated with IDA bonds**

**Series 2006**

| **Amount of Issuance** | | | | | |
|---|---|---|---|---|---|
| $36,495,000 | | | | | |
| **Capital Improvements** | **post 8/22/04** | **2005** | **2006(q1-q3)** | **Total** | **Percent** |
| Santa Cruz Water | $1,210,702 | $3,798,900 | $4,264,051 | $9,273,653 | 26% |
| Palo Verde WW | $4,449,676 | $17,494,064 | $4,487,532 | $26,431,272 | 74% |
| Total | $5,660,378 | $21,292,964 | $8,751,583 | $35,704,925 | |

Source: December 1, 2006 Loan Agreement between The Industrial Development Authority of the County of Pima, U.S. Bank National Association and Global Water Resources. Exhibits B and C.

**Series 2007**

| **Amount of Issuance** | | | | | |
|---|---|---|---|---|---|
| $54,135,000 | | | | | |
| **Capital Improvements** | **2006 (q4)** | **2007 (q1-q3)** | **2007 (q4) projected** | **Total** | **Percent** |
| Santa Cruz Water | $5,949,221 | $20,240,869 | $3,675,000 | $29,865,090 | 56% |
| Palo Verde WW | $8,593,426 | $12,681,197 | $1,825,000 | $23,099,623 | 44% |
| Total | $14,542,647 | $32,922,066 | $5,500,000 | $52,964,713 | |

Source: November 1, 2007 First Amendment to above December 1, 2006 Loan Agreement. Exhibits B and C.

**Series 2008**

| **Amount of Issuance** | | | | | |
|---|---|---|---|---|---|
| $24,550,000 | | | | | |
| **Capital Improvements** | **2007 (q4)** | **YTD 2008** | **2008 Projected** | **Total** | **Percent** |
| Santa Cruz Water | $2,969,390 | $3,888,812 | $6,500,000 | $13,358,202 | 47% |
| Palo Verde WW | $696,882 | $3,602,102 | $10,500,000 | $14,798,984 | 53% |
| Total | $3,666,272 | $7,490,914 | $17,000,000 | $28,157,186 | |

Source: August 1, 2008. Second Amendment to above December 1, 2006 Loan Agreement. Exhibits B and C.

# MJR 4

Exhibit MJR 4

**Allocation of IDA Bonds between Palo Verde's and Santa Cruz's Capital Structures**

Series 2006

| | Allocation Percent | Total Debt | Allocated Debt |
|---|---|---|---|
| Palo Verde | 74% | $36,495,000 | $27,016,141 |
| Santa Cruz | 26% | | $9,478,859 |

Series 2007

| | Allocation Percent | Total Debt | Allocated Debt |
|---|---|---|---|
| Palo Verde | 44% | $54,135,000 | $23,610,023 |
| Santa Cruz | 56% | | $30,524,977 |

Series 2008

| | Allocation Percent | Total Debt | Allocated Debt |
|---|---|---|---|
| Palo Verde | 53% | $24,550,000 | $12,903,103 |
| Santa Cruz | 47% | | $11,646,897 |

**Total Palo Verde Debt: $63,529,266**
**Total Santa Cruz Debt: $51,650,734**

# MJR 5

**Exhibit MJR 5**

| Valencia - Consolidated | | |
|---|---|---|
| Debt | $ 2,345,798 | 5% |
| Equity | $ 49,117,280 | 95% |

| Valencia – Town Division | | |
|---|---|---|
| Debt | $2,012,846 | 13% |
| Equity | $13,882,700 | 87% |

| WUGB | | |
|---|---|---|
| Debt | $ 91,091 | 4% |
| Equity | $ 1,976,156 | 96% |

| WUGT | | |
|---|---|---|
| Debt | $241,861 | 1% |
| Equity | $33,258,424 | 99% |

| Willow Valley | | |
|---|---|---|
| Debt | $ 227,953 | 17% |
| Equity | $ 1,136,740 | 83% |

For derivation of the above debt numbers see the testimony of Mr. Barber. The equity numbers are taken from the Test year End balance Sheet, Schedule E-1

# MJR 6

Exhibit MJR 6

Derivation of Palo Verde and Santa Cruz Debt Costs

| Series | Allocation Factor | Bond Due Date | Amount | Interest Rate | Weighted Debt | Weighted Interest rate |
|---|---|---|---|---|---|---|
| 2006 | 74% | 12/1/2017 | $5,115,263 | 5.45% | 8.05% | 0.44% |
| 2006 | 74% | 12/1/2022 | $4,600,776 | 5.60% | 7.24% | 0.41% |
| 2006 | 74% | 12/1/2032 | $17,300,102 | 5.75% | 27.23% | 1.57% |
| 2007 | 44% | 12/1/2013 | $713,076 | 5.50% | 1.12% | 0.06% |
| 2007 | 44% | 12/1/2037 | $22,896,947 | 6.55% | 36.04% | 2.36% |
| 2008 | 53% | 12/1/2018 | $691,144 | 6.38% | 1.09% | 0.07% |
| 2008 | 53% | 12/1/2038 | $12,211,959 | 7.50% | 19.22% | 1.44% |
| Total | | | $63,529,266 | | 100% | 6.344% |

Santa Cruz Allocation

| Series | Allocation Factor | Bond Due Date | Amount | Interest Rate | Weighted Debt | Weighted Interest rate |
|---|---|---|---|---|---|---|
| 2006 | 26% | 12/1/2017 | $1,794,737 | 5.45% | 3.47% | 0.19% |
| 2006 | 26% | 12/1/2022 | $1,614,224 | 5.60% | 3.13% | 0.18% |
| 2006 | 26% | 12/1/2032 | $6,069,898 | 5.75% | 11.75% | 0.68% |
| 2007 | 56% | 12/1/2013 | $921,924 | 5.50% | 1.78% | 0.10% |
| 2007 | 56% | 12/1/2037 | $29,603,053 | 6.55% | 57.31% | 3.75% |
| 2008 | 47% | 12/1/2018 | $623,856 | 6.38% | 1.21% | 0.08% |
| 2008 | 47% | 12/1/2038 | $11,023,041 | 7.50% | 21.34% | 1.60% |
| Total | | | $51,650,734 | | 100% | 6.57% |

# EXHIBIT A-13

**DOCKET NOs. SW-02445A-09-0077 *et al.***

# Rebuttal Testimony
# of
# Matthew J. Rowell

**November 20, 2009**

EXHIBIT
A-13
ADMITTED

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## I. Introduction.

**Q. What topics will you address in your rebuttal testimony?**

**A.** I begin by discussing the economic implications of Arizona's arid climate and extended drought. I then respond to Staff's and RUCO's positions concerning ICFAs. As part of that response, I demonstrate that the Global Utilities' aggregate capital structures are similar to other Arizona utilities in terms of advances and contributions. I remark on Staff's failure to address my direct testimony concerning carrying costs. I refute Staff's conclusion that ICFA fees should be imputed as contributions because they are a cost-free source of capital. I also explain that even if the Commission accepts that conclusion, any imputation of contributions should be reduced by off-sets for acquisition premiums paid, parent-level expenses paid, and taxes paid, as these items would clearly reduce the amount of any allegedly "cost free capital".

I explain the link between ICFAs and efficient regional infrastructure. I also show that the Global Utilities' regional infrastructure results in lower operating expense as compared to other Arizona utilities, thus creating long-term benefits for ratepayers.

I describe the regulatory policy implications of Staff's decision to impute all ICFA fees as contributions. I show that Staff's approach would create a strong disincentive for future acquisitions of water utilities – a result that I consider especially unfortunate given the highly fragmented and undercapitalized nature of the water utility sector in Arizona. I also describe how Staff's approach results in negative rate base, which in turn destroys any future incentive to invest in infrastructure for such utilities.

I also explore various alternative scenarios that the Commission could consider if it concludes that ICFA fees should be partially imputed as contributions. Lastly, I will respond to Staff's and RUCO's cost of capital testimony.

## II. Economic Implications of Drought and Aridity.

**Q. Global witness Graham Symmonds provided testimony concerning current and projected drought conditions. Are there any economic implications of the current and projected drought conditions discussed by Mr. Symmonds?**

A. The drought issues discussed by Mr. Symmonds are not confined exclusively to Arizona. They affect the entire Southwestern United States. Additionally, recent years have seen severe drought conditions (and in some cases water shortages) in non-arid parts of the country like Georgia. So when we consider factors that businesses might consider when deciding where to locate facilities, the drought in and of itself may not be extremely important. What matters is how the leaders of different areas of the country respond to the reality of the water issues they face. Areas that are perceived as being proactive in addressing the affects of the drought may have an advantage in attracting businesses compared to areas that stick to the status quo. This is especially true for Arizona. It is no secret that Arizona's population centers are in the desert. It is also no secret that sustaining a large civilization in the desert requires advanced water infrastructure. If Arizona is perceived as being reluctant to address the reality of our arid environment it will be devastating for our long-term economic development.

**Q. Are these issues really important to businesses when deciding where to make investments?**

A. Investors with a short-term mindset may care little about sustainability issues. But for a business making long-term capital allocation decisions such as where to locate a multi-billion dollar manufacturing facility these issues are extremely important.

**Q. Why is it important to attract businesses to Arizona?**

A. A vibrant economy requires a diverse base of well-paying jobs. For the economy to thrive we cannot rely on one industry (such as home construction) to be the engine for the economy. Without a diverse and stable job base Arizona's long-term economic prospects will be lackluster.

**Q. Does the Commission regularly consider economic impacts when deciding regulatory and ratemaking proceedings?**

A. Absolutely. For instance, the plant and line siting statutes require the Commission to balance the economic benefits with the environmental impacts of new infrastructure, the Commission's REST rules, its pending Energy Efficiency rules, and its long history of support for Demand Side Management all are based in large part on the long-term economic benefits of those actions. I believe the Commission can and should do the same with its water policy – in fact, in many cases it already has done so by requiring more than the bare minimum of ADWR's Best Management Practices.

**Q. Are other states addressing the drought issue?**

A. On November 4, 2009 California passed what has been called "unprecedented" legislation designed to address its significant water issues.[1] Although the ultimate effectiveness of this legislation is yet to be determined, high profile action of this sort does send the signal that California's leaders are serious about taking action, to address the state's water needs. With neighboring states taking such action, Arizona cannot afford to be perceived as being less than proactive regarding the management of its water resources.

[1] See http://features.csmonitor.com/politics/2009/11/04/california-lawmakers-pass-sweeping-water-reforms/

**Q. How does the above discussion relate to the current Global rate case?**

A. As detailed in the 2008 ASU W.P. Carey School of Business infrastructure study,[2] Arizona needs to spend in excess of $109 billion over the next 25 years on its water and wastewater infrastructure to meet growth and water scarcity requirements. As discussed by Mr. Hill and Mr. Symmonds, Global has begun to make significant investments in infrastructure that allows for real conservation and efficient water management. Global relied on an innovative financing technique (ICFAs) to partially offset the huge carrying costs associated with such infrastructure and the acquisition premiums paid as a result of the purchase of several under-capitalized utilities. To punish Global for being innovative as it addresses the huge capital costs associated with regional infrastructure could send the message that Arizona is not committed to addressing its water infrastructure needs.

## III. Response to Staff's Position Regarding ICFAs.

### A. General Comments on Staff's Position.

**Q. Do you have any general comments regarding the testimony of Staff witness Linda A. Jaress regarding ICFA fees?**

A. What is most striking about Ms. Jaress' analysis is the disparity between her conclusions regarding ICFA fees and her recommendation regarding how the fees should be treated. Ms. Jaress concludes that there are several potential and actual uses for the ICFA fees, yet she recommends that they all be treated as if they were used for one particular purpose, i.e., directly funding plant.

[2] http://www.arizonaic.org/images/stories/pdf/AIC_Executive_Summary_Final.pdf

**Q. What are the different uses of ICFA fees that Ms. Jaress acknowledges in her Direct Testimony?**

A. The various uses for ICFA fees that Ms. Jaress posits are listed here:

- Ms. Jaress indicates that ICFA fees allow Global to "receive a return of, or a return on, an investment in the Global Utilities regional plant…"[3] Receiving a return on an investment is fundamentally different than having that investment funded by a cost-free source.

- Ms. Jaress states that in a case where Global already has enough capacity to serve an additional developer "Then the ICFA fees paid by the developer could be used for purposes other than providing services to the developer."[4] Here Ms. Jaress specifically acknowledges that ICFA fees can be used for purposes other than to build plant needed to serve a developer.

- Ms. Jaress states that "(T)he fees paid by a developer could be used to purchase other public utilities."[5] Global has contended all along that ICFA fees have been used to purchase other public utilities and here Ms. Jaress specifically acknowledges that that is a potential use of ICFA fees. Ms. Jaress acknowledges that Global has spent $43 million on purchasing utilities since 2004.[6]

- Finally, in response to data requests, Ms. Jaress concedes that "The ICFA fees are cash and are used in the same manner as cash generated from normal revenues, external financing and earnings."[7] Thus, although Ms. Jaress recommends treating every dollar of ICFA fees as though they directly funded plant, Ms. Jaress

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[3] Linda Jaress Direct, page 10, lines 13 through 16.
[4] Linda Jaress Direct, page 9, lines 19 through 21.
[5] Linda Jaress Direct, page 9, lines 21 and 22.
[6] Linda Jaress Direct, page 10, line 3.
[7] Staff Response to Global 2.1.a.

acknowledges that in fact ICFA fees have a variety of uses. Notably, even if ICFA fees did directly fund plant, plant funded by "normal revenues, external financing and earnings" is included typically in rate base (subject to prudence and the like).

**B. Staff's Conclusion Regarding ICFA Fees.**

**Q. What is the basis for Staff's conclusion that the ICFA revenues were used to directly fund investments in plant?**

A. It is not entirely clear how Staff came to the blanket conclusion that *all* of the ICFA fees were used to fund plant. But Staff does provide three separate rationales for their conclusion. Ms. Jaress states:

> "Finally, and most importantly, because the fees are accounted for by the Global Parent as revenue and not separately tracked (i.e., comingled) by the Global Parent, it is reasonable to conclude that *some or all* of the fees were invested in the Utility to pay for plant." (Emphasis added.)[8]

This appears to be Staff's principal justification for treating all of the ICFA fees as if they were used to fund plant. Yet even here Staff only states that it is reasonable to conclude that *"some or all"* of the ICFA fees were used to build plant. How Staff moves from "*some or all*" to just "all" is not clear.

Staff does provide two supporting rationales for its ICFA recommendation. Ms. Jaress provides the following as an additional justification for Staff's recommended treatment of ICFAs:

[8] Linda Jaress Direct Testimony, page 10, lines 6 through 8.

"It is not reasonable to assume that the Global Parent could collect ICFA fees absent its relationship with its utilities. The (ICFA) fees are only collected in instances whereby a developer or landowner needs plant for utility service. Therefore, Staff views the ICFA fees as an integral part of Utilities' financing of plant used to supply utility service." [9]

Ms. Jaress then goes on to argue that the lack of CIAC on the books of Palo Verde and Santa Cruz is additional justification for Staff's recommended treatment of the ICFA fees. Staff argues that "(T)he Global Parent enters into ICFA contracts in place of the Utilities accepting contributions."[10] Staff bases this presumption on their belief that "Most Arizona water and sewer utilities have significant amounts of CIAC on their books. Palo Verde and Santa Cruz, along with the other Utilities, are the exception to the rule."[11]

**Q. Do you agree with Staff's first reason for concluding that ICFA fees should be treated as CIAC, because they are accounted for as revenue and not separately tracked?**

A. No. The simple fact that the fees are treated as revenue and not separately tracked has no bearing on how the fees are ultimately used or how they should be treated. In fact, this is the opposite of how CIAC is normally treated. Typically CIAC is *not* treated as revenue and it *is* separately tracked. It is not clear at all how the simple fact that the ICFA fees are treated as revenue and not separately tracked leads to Staff's conclusion that they are used to fund plant. The fact that ICFA fees are not separately tracked means that they *could* be used to fund any activity of the parent. How Staff narrows in on one specific potential use is not clear.

[9] Linda Jaress Direct Testimony, page 12, lines 4 and 5.
[10] Linda Jaress Direct Testimony, page 12, line 9.
[11] Linda Jaress Direct Testimony, page 12, line 17-18.

**Q. Do you agree with Staff's second reason for concluding that ICFA fees should be treated as CIAC, that they are only collected in instances whereby a developer or landowner needs plant for utility service?**

A. No. For two reasons this line of reasoning is unsupportable. First, Ms. Jaress specifically acknowledges that ICFA fees can be collected from developers in instances where there is no need for additional plant to serve them.[12] Global's model of building plant on a regional scale means that in many cases the capacity needed to serve a particular developer was built *prior to* that developer paying the ICFA fees. This is in stark contrast with traditional CIAC that is meant to fund *additional* capacity needed to serve a developer. In fact, in a recent wastewater rate case (Black Mountain Sewer Docket No. SW-02361A-08-0609) Staff recommended against allowing the company to impose hookup fees (the proceeds of which would be treated as CIAC) because the company already had enough capacity to serve new developments.

Second, simply because the Global Parent could not collect ICFA fees "absent its relationship with its utilities" does not imply anything about how the funds are ultimately used. The issue here is not why the Global Parent is able to collect ICFA fees but rather <u>what it does with the fees once collected</u>. These are two distinct questions and Staff has offered no explanation of how one affects the other.

**Q. Do you agree with Staff's third reason for concluding that ICFA fees should be treated as CIAC, that the Global Utilities have no CIAC when the industry norm is to have significant amounts of CIAC?**

A. It is true that Global has cast a jaundiced eye on CIAC. As discussed in the Rebuttal Testimony of Trevor Hill, Global has generally avoided the use of CIAC as a financing tool in order to avoid the significant problems it can cause. Relying on developer-

[12] Linda Jaress Direct Testimony, page 9, lines 18 and 19.

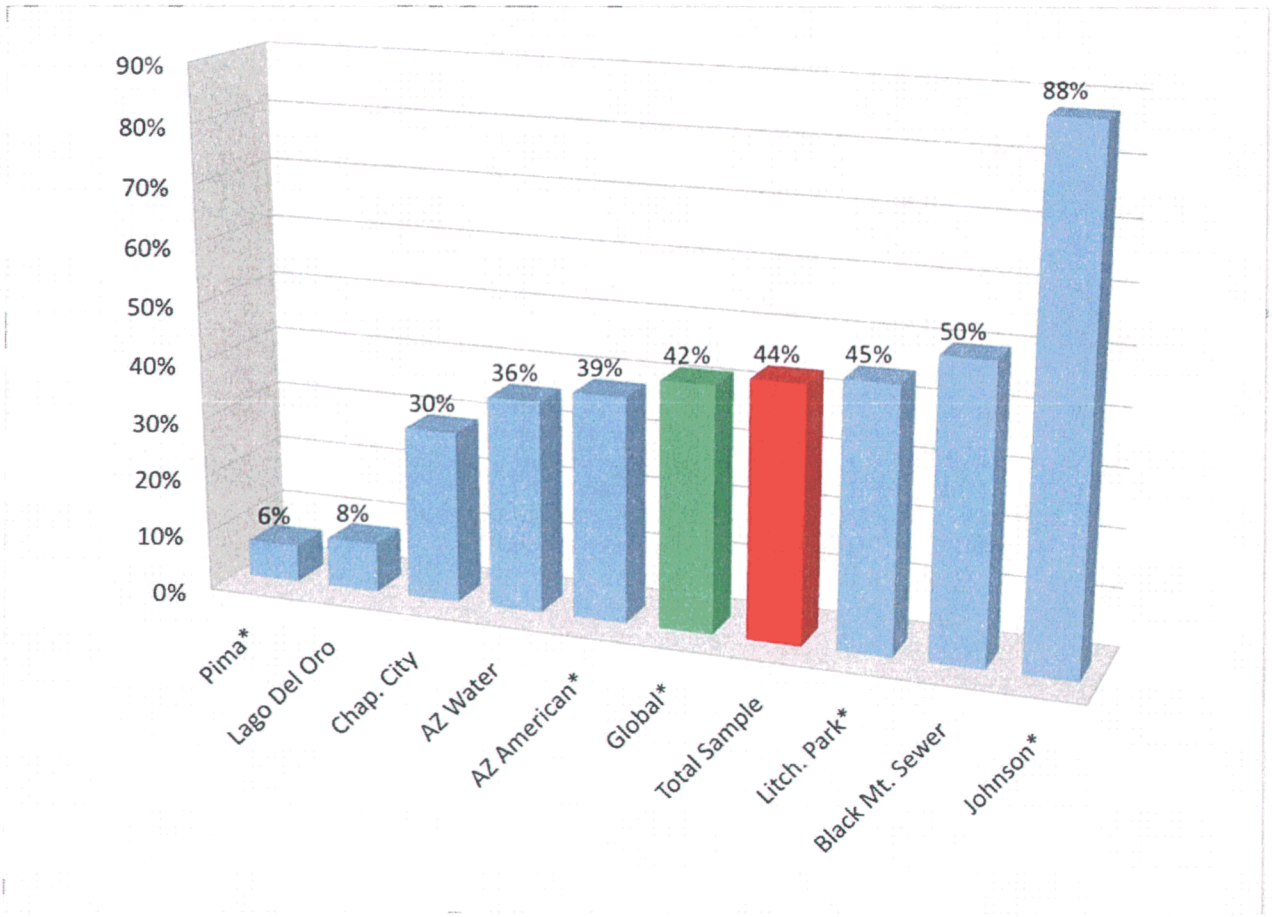
contributed plant lets developers control what type of plant is to be built. Also, in the long run an overreliance on CIAC can have devastating financial consequences for a utility. However, Staff's contention that Global's low level of CIAC relative to the industry norm indicates that the ICFA fees are nothing more than a replacement for CIAC is unsupportable for at least two reasons.

First, some of the Global Utilities do have substantial CIAC balances. For instance, Valencia Greater Buckeye Division has a CIAC balance that is over 14% of its Utility Plant in Service. Thus its CIAC balance relative to its Utility Plant is higher than either Arizona American or Arizona Water.

Second and much more importantly, while it may be true that the Global Utilities as a whole have little CIAC on their books, they do carry a significant amount of AIAC. Indeed, Staff concedes that "Ms. Jaress' testimony should have included advances in its characterization of how certain plant is financed."[13] When we look at the combined balance of AIAC and CIAC of several Arizona water and wastewater companies we see that the Global Utilities are not outside of the industry norm. Chart 1 below shows the combined AIAC and CIAC balances as a percentage of Utility Plant in Service of the Global utilities and of several other large Arizona water and wastewater companies.

[13] Staff Response to Global 2.2.a.

**CHART 1: Combined AIAC & CIAC as a Percent of Utility Plant in Service**




*Includes both water and wastewater operations.
Source: 2008 annual reports

Clearly, when both sources of developer funded plant (AIAC and CIAC) are considered the Global Utilities as a whole are not atypical. The Global Utilities actually have a higher percentage of developer-funded plant than Arizona-American, Arizona Water, Chaparral City Water, and the Robson Utilities. Thus Staff's assertion that the ICFA fees are simply a replacement of plant funding that typically comes from developers is not supported by the facts.

**Q. Why do you believe that comparing combined AIAC and CIAC balances is more instructive than focusing on CIAC alone?**

A. First, for regulatory purposes AIAC and CIAC are generally treated the same way. In rate proceedings AIAC and CIAC are both subtracted from rate base. Also, in CC&N cases Staff has taken the position that the combined AIAC and CIAC balance should not exceed a specified percentage of utilities' capital structures. AIAC and CIAC are treated the same way because they are so similar. They are both developer-provided capital specifically intended to fund the construction of plant.

Second, over time AIAC balances tend to (at least partially) convert to CIAC. AIAC agreements generally require that the utility pay the developer back its AIAC over time as development occurs. If development occurs more slowly than expected the unreturned AIAC balance converts to CIAC after a specified time period. It is rare that a developer will receive 100% of their AIAC payments back. At least some portion, and in some cases a significant portion, of the AIAC balance ends up converting to CIAC. Thus, Palo Verde's and Santa Cruz's lack of CIAC can be attributed to their relative youth. Unlike many other Arizona water and wastewater companies, Palo Verde and Santa Cruz have simply not been around long enough for their AIAC balances to convert to CIAC. In any case, the close relation between AIAC and CIAC means that it is improper to focus on CIAC and ignore AIAC when making determinations about a utility's source of funds.

**C. Risk.**

**Q. At page 13 lines 18 through 22 of her Direct Testimony, Ms. Jaress indicates that the ICFA fees transfer the risk of unsuccessful development to the ratepayers. Please comment on Ms. Jaress' discussion of risk.**

A. The ICFA fees do not transfer risk to the ratepayers. The risk is born by Global with or without ICFA fees. The Commission's rate making authority is ultimately what protects

the ratepayers and that authority is not affected by ICFAs. If a piece of plant is deemed to be not used and useful the Commission has the power to exclude it from rate base.

**Q. How do ICFA fees relate to development risk?**

A. Building large-scale regional infrastructure in areas where development is occurring is an inherently risky endeavor. If development occurs more slowly than anticipated, the utility could be stuck with millions of dollars of installed plant on which it can earn no rate of return. This risk is a real deterrent to building regionally-scaled infrastructure. The ICFA fees mitigate that risk in that developers compensate Global for bearing that risk.

**Q. Why is Staff's position regarding development risk problematic?**

A. Staff appears to be recommending that development risk should be dealt with by disallowing plant whether it is used and useful or not. Staff essentially replaces the risk of a disallowance with the certainty of disallowance. Such a policy will discourage the building of regionally-scaled infrastructure.

### D. Cost-Free Capital.

**Q. At several places in her testimony Ms. Jaress refers to the ICFA fees as "Cost-Free Capital." Do you agree that the ICFA fees are cost-free capital?**

A. No. The ICFAs are an integral part of Global's strategy of emplacing regionally-scaled infrastructure. That strategy results in significant carrying costs for Global Parent (Discussed in my Direct Testimony and below.) Thus, it is inappropriate to ignore these carrying costs when considering ICFA fees.

Additionally, Ms. Jaress acknowledges that "... a portion of the ICFA 'revenue' is offset by expenses."[14] These offsetting expenses are not mentioned again in Ms. Jaress' testimony. Staff does not attempt to net these expenses out of their ICFA-related rate base adjustment.

**Q. What is the level of these offsetting expenses discussed above?**

A. It is not possible to track specific expenses to specific ICFAs. However, Global Water Resources ("Global Parent") incurs significant expenses that it does not allocate down to the utilities (as is the industry norm.) These expenses include executive salaries and various overhead items which totaled over $3.9 million in the test year. Ignoring these Global Parent level expenses that are not allocated to the utilities when recommending an adjustment based on the ICFA fees is not appropriate.

**Q. Is Staff aware of these GWR level expenses?**

A. Ms. Jaress acknowledges in her testimony that only the portion of the ICFA revenue that is not offset by expenses becomes net income for Global Parent and is thus available to invest in the utilities.[15] In spite of this, Staff's recommendation assumes that *all* of the ICFA revenues are available to invest in the utilities. Staff offers no explanation of this disparity between their analysis and their recommendation.

**Q. Is there another reason why it is inappropriate to refer to the ICFA revenue as "cost-free capital?"**

A. Yes. The revenue generated from the ICFAs is taxable. In fact, the $60 million in ICFA fees collected generated a tax liability of $24 million. How a source of funds that generates a $24 million tax liability can be characterized as "cost-free" is not at all clear.

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[14] Linda Jaress Direct, page 9, line 3.
[15] Linda Jaress Direct, page 9, lines 3 and 4.

**Q. How does Staff address the issue of the tax liability generated by the ICFA fees?**

A. Staff does not mention the tax liability generated by the ICFA fees at all in their Direct Testimony.

**E. Staff's Position on Carrying Costs.**

**Q. Why is it that Global finds it necessary to include fees in its negotiated ICFA contracts with developers?**

A. As I discussed extensively in my Direct Testimony filed in this case and will discuss further below, the large and unrecoverable carrying costs associated with Global's model of building regional-sized infrastructure necessitate the use of a nontraditional financing technique.

**Q. How does Staff address the issue of carrying costs?**

A. Staff does not appear to address the issue of carrying costs at all. At page 6 of her Direct Testimony Ms. Jaress does acknowledge that Global contends that the ICFA fees are necessary to (partially) offset carrying costs. However, carrying costs are not even mentioned anywhere else in Ms. Jaress' Direct Testimony. So Staff does not address the carrying cost issue at all in Direct Testimony.

**Q. How was Staff able to avoid addressing the carrying cost issue in their Direct Testimony?**

A. Staff appears to have been very selective when laying out Global's position on the ICFA fees. For instance, at page 9 of her Direct Testimony, Ms. Jaress quotes the testimony of Global witness Cindy Liles from a previous case.[16] Ms. Jaress selects the quote "(T)he ICFA model allows Global Parent to infuse significant equity into its utility

[16] Arizona Water Company complaint against Global Docket No. W-01445A-06-0200 et. al. Ms. Liles has not provided testimony in the current rate case.

subsidiaries..." In Ms. Liles' testimony there is a reference to carrying costs immediately above this quote but Ms. Jaress selectively chose not to address that. A more complete quote that effectively conveys what Ms. Liles was attempting to communicate is provided here:

> Palo Verde and Santa Cruz added approximately $136 million of infrastructure in these first six years. If customers covered these carrying costs – or this plant was added to rate base before many customers joined the system – rates would have skyrocketed. But doing nothing would have made integrated, regional systems unaffordable. Global Parent could not absorb carrying costs on this $136 million for years. By using the ICFA model, Global Parent was able to finance the staggering growth while maintaining stable, reasonable rates that furthered conservation. The ICFA fees are paid entirely by developers.... Utility customers will not bear any of the costs of ICFA fees through rates. The Global Utilities will not seek any revenue from customers associated with ICFA fees. While the ICFA model allows Global Parent to infuse significant equity into its subsidiaries, ICFAs do not require any particular capital structure.... However, the ICFA model allows customers to enjoy the benefits of integrated and financially-healthy water, wastewater and reclaimed water providers that are committed to water conservation and the long-term sustainability of the water supply.[17]

## IV. <u>The Implications of Regional Infrastructure: Conservation, Efficiency and Carrying Costs.</u>

**Q. Please discuss the benefits of regional infrastructure.**

A. Regional infrastructure allows for the realization of economies of scale. This has two very important implications. First, it reduces the operating costs of a utility substantially. Second, it allows for meaningful water conservation. In his Direct Testimony ( pages 7 through 10) , Global witness Graham Symmonds explains in detail how Global's model of installing regional infrastructure results in economies of scale.

[17] Direct Testimony of Cindy Liles, Docket No. W-01445A-06-0200 et. al. page 7 line 21 through page 8 line 10.

**Q. While in theory deploying infrastructure on a regional basis should allow for lower operating costs and water conservation, is there any evidence that these effects actually occur in reality?**

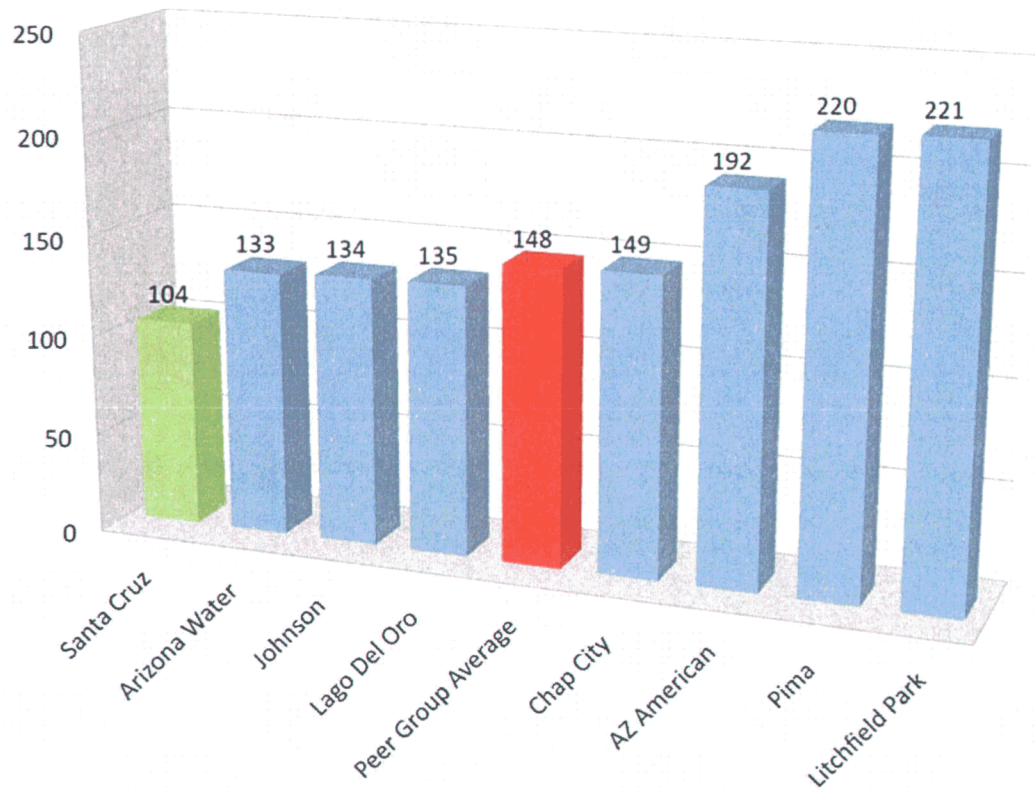
A. Yes. In his Direct Testimony, Mr. Symmonds compares the operations of Global Water-Santa Cruz Water Company to that of Valencia Water Company. The Santa Cruz system was built with Global's regional approach. Whereas Valencia's system was built using the traditional developer-directed method. Mr. Symmonds shows that Santa Cruz's customers on average use considerably less water than Valencia's. Also, power consumption per customer, consumables (chemical, supplies, treatment media) cost per customer, and labor costs per customer are all substantially less for Santa Cruz than for Valencia.[18] This is clear evidence that the benefits of regional infrastructure are real and are not just theoretical.

**Q. Besides Mr. Symmonds' comparison of Santa Cruz with Valencia, is there further evidence that Global's regional infrastructure approach results in lower operating costs and water consumption?**

A. Yes. Using information available in the 2008 annual reports, I compared Santa Cruz's water consumption per customer with that of a sample of other large Arizona water companies. Additionally, I compared the operating costs of both Santa Cruz and Palo Verde with those of a sample of other large Arizona water and wastewater companies. These comparisons show that Santa Cruz's water consumption per customer and Santa Cruz's and Palo Verde's operating costs are extremely low compared to their peers. Chart 2 below shows Santa Cruz's 2008 water customer per customer compared to a sample of Santa Cruz's peers.

[18] Direct Testimony of Graham Symmonds pages 11 through 15.

**Chart 2: 2008 Annual Water Consumption Per Customer in 1000s.**




Santa Cruz's per customer water consumption is only 70% of the peer group average. This means that relative to the average consumption Santa Cruz saves 722 million gallons a year (44,000 gallons X 16,370 customers.)

Chart 3 below shows the total operating costs per customer of Santa Cruz and a sample of Santa Cruz's peers.

**Chart 3: Operating Costs Per Customer (2008 Annual Reports)**

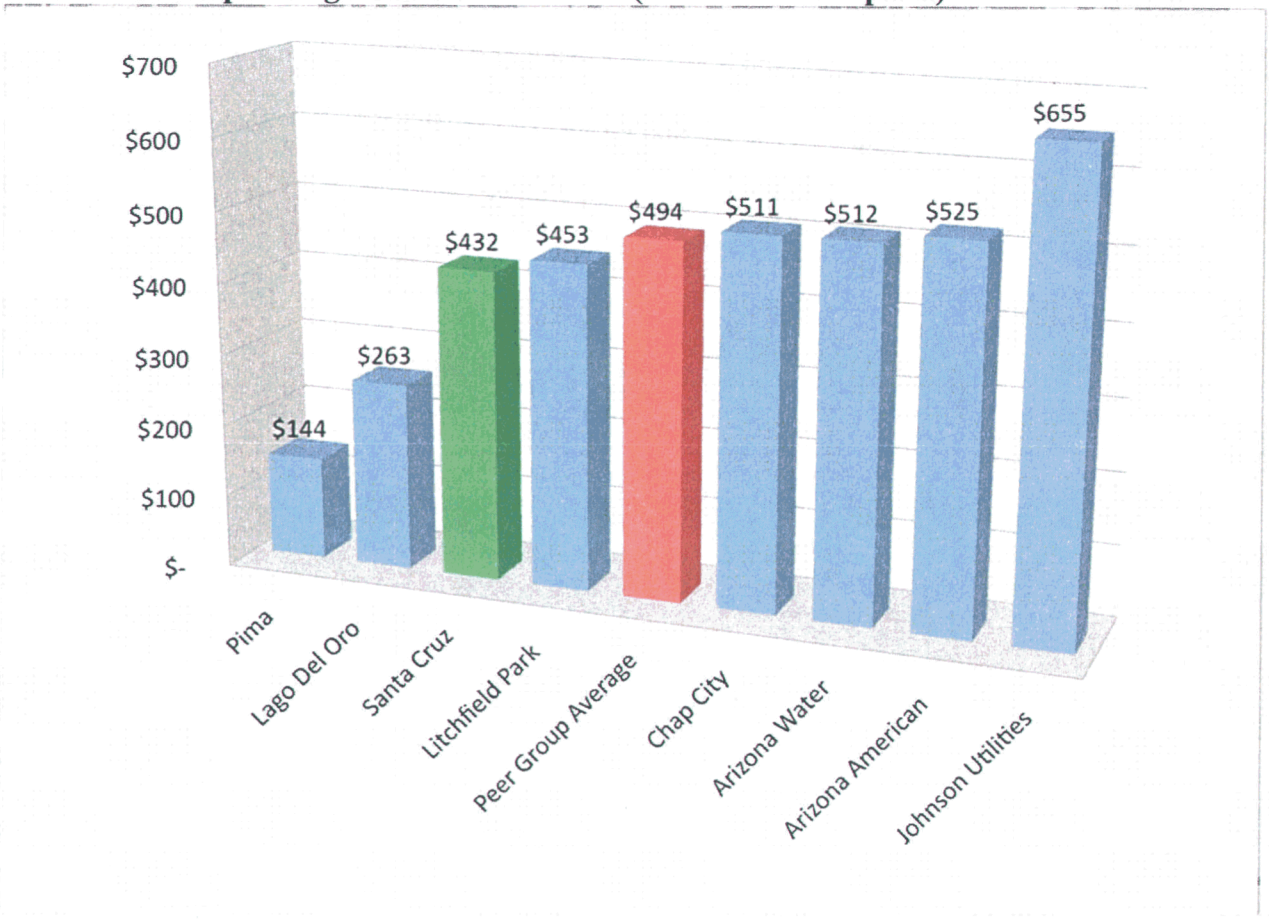



Chart 3 clearly shows that Santa Cruz's operating costs per customer are well below most of its peers. Santa Cruz's operating costs per customer are $62 less than the average of the peer group. Since operating costs are passed on dollar for dollar to the customers this represents a significant saving for Santa Cruz's customers.

Chart 4 below focuses on the labor costs of Santa Cruz and the peer group.

**Chart 4: Labor Costs Per Customer (2008 Annual Report)**[19]

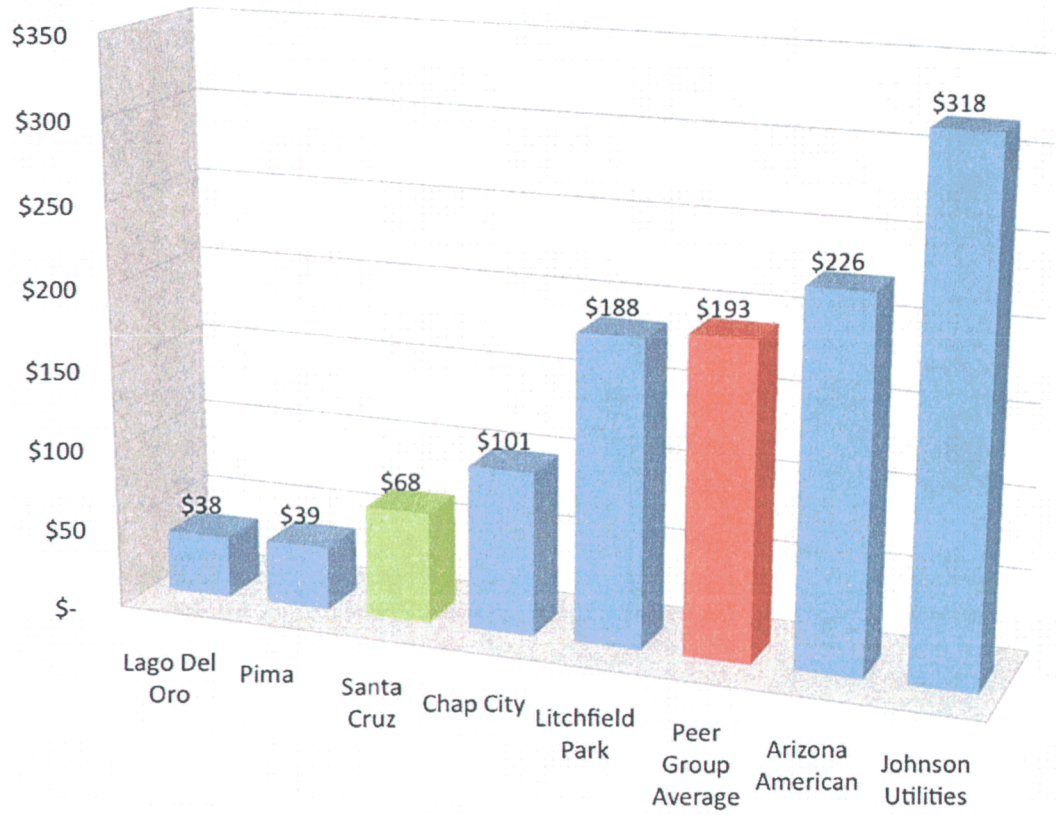



Chart 4 clearly shows that Santa Cruz's labor costs are significantly below most of its peers.

[19] Labor Costs are defined as the sum of operating expense accounts 601 Salaries and Wages, 604 Employee Pension and benefits, 630/634 Outside Services/Contract Services, 636 Contractual Services Other, and 659 Insurance Health/Life. Arizona Water was excluded from Charts 4 and 5 because the layout of its annual report makes extracting the relevant information difficult.

Chart 5 below shows the Repair and Maintenance expenses of Santa Cruz and the Peer Group.

**Chart 5: Repairs and Maintenance Expense Per Customer (2008 Annual Report)**

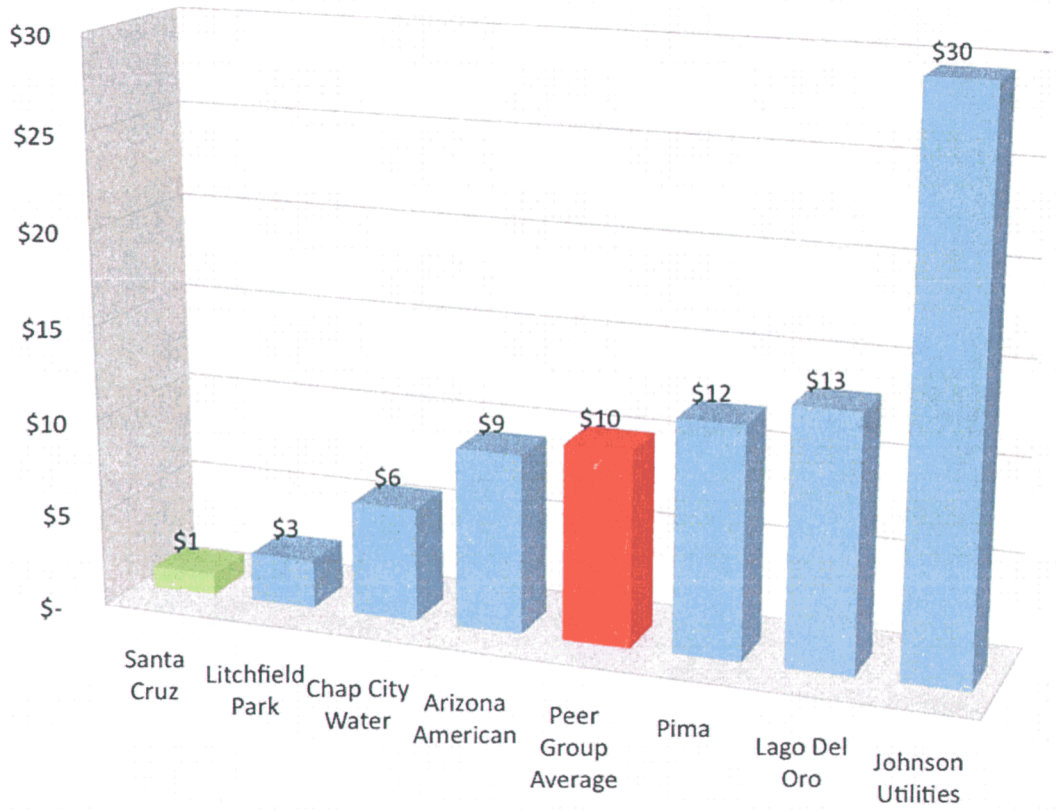
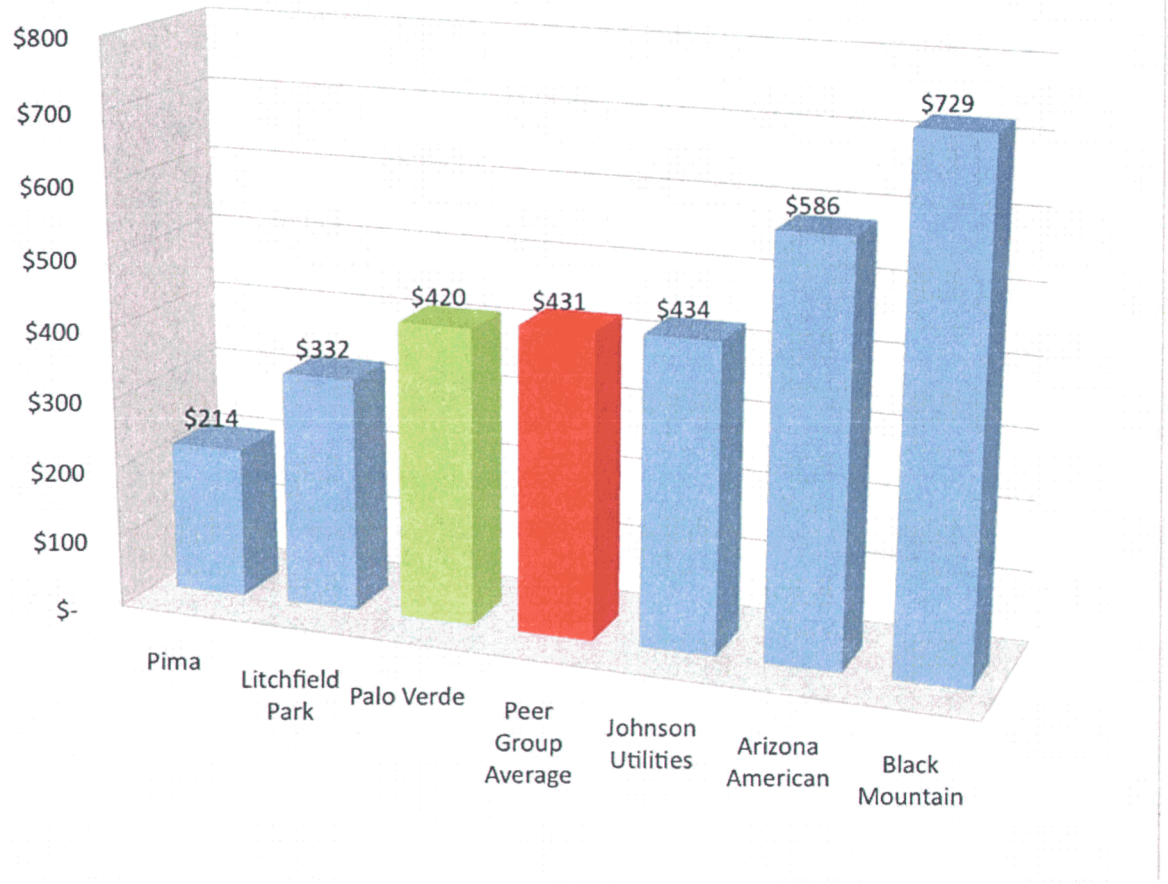



Chart 5 clearly shows that Santa Cruz's maintenance expenses are dramatically lower than its peers. While it is true that this may partially be attributable to Santa Cruz's relative youth, it is still quite impressive.

Turning to the wastewater industry Chart 6 below shows Palo Verde's total operating costs relative to a peer group of other large wastewater operations.

**Chart 6 Wastewater Operating Costs Per Customer (2008)**




While not as dramatic as on the water side, Palo Verde's operating costs are below the average of the peer group. These results are all the more impressive when we consider that Palo Verde provides reclaimed water on a *distributed* basis. This is in contrast to the other wastewater companies that produce reclaimed water but do not distribute it to any significant degree, except perhaps to a few select customers. So Palo Verde is able to keep its operating expenses low relative to the peer group even though it provides this significant additional service.

Chart 7 below focuses on labor costs of Palo Verde and its peers and thus is instructive regarding their relative efficiency.

**Chart 7: Wastewater Labor Costs Per Customer (2008 Annual Reports)[20]**

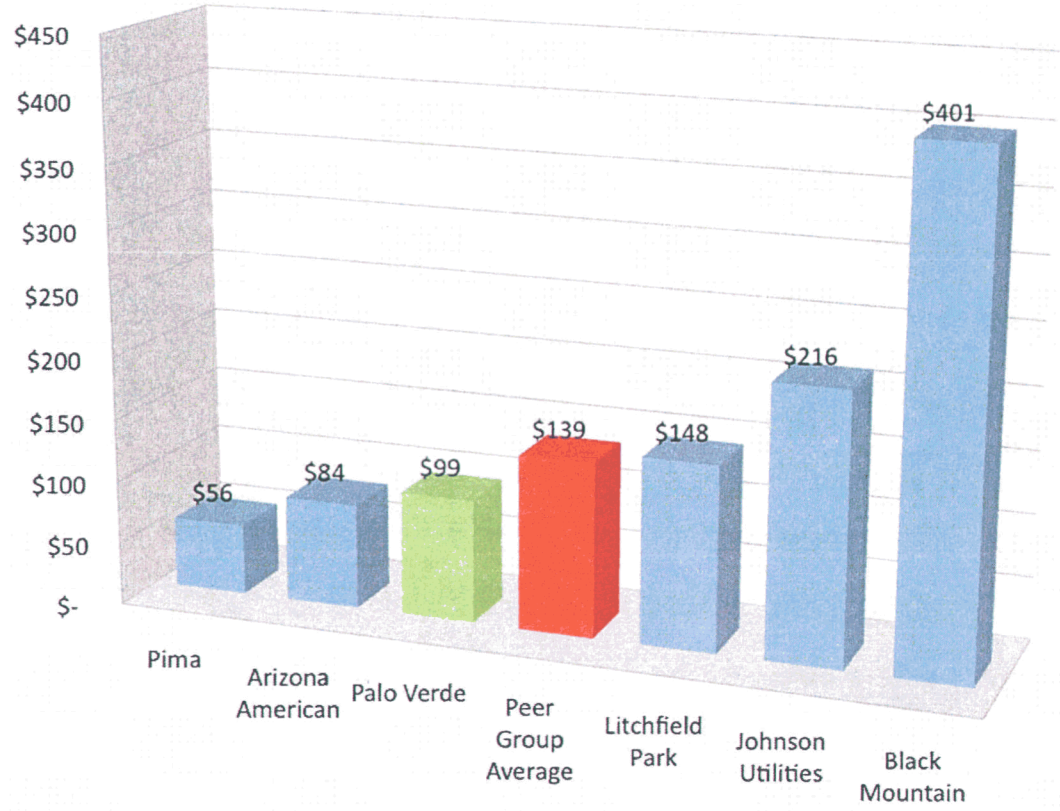



Chart 7 demonstrates that Palo Verde's labor costs per customer are low relative to its peers which indicates that its operations are relatively efficient.

**Q. What do you conclude based on the analysis presented above in Charts 2 through 7?**

A. The above analysis demonstrates that Global's contention – that installing regionally scaled infrastructure has inherent efficiency and conservation benefits – isn't just a theoretical argument. Global's contention is supported by the facts.

[20] Labor Costs are defined as the sum of operating expense accounts 701 Salaries and Wages, 704 Employee Pension and benefits, 731/734/735/736 Contractual Services

**Q. The above discussion highlights the positive implications of regionally-scaled infrastructure. But doesn't regionally-scaled infrastructure also have relatively high capital costs?**

A. Global's position all along has been that the above demonstrated conservation and efficiency benefits require relatively large plant investments. In some cases those plant investments must occur in advance of developments building out. In almost all cases these significant plant investments will be excluded from rate base for a number of years (unless the Company comes in for rate cases more or less constantly *and* the Commission allows un-utilized or under-utilized plant in rate base.) Thus, a company pursuing a strategy of installing regionally scaled infrastructure is faced with the prospect of making major investments for which it will not receive any return for a substantial period of time. These unrecoverable costs are what is known as carrying costs.

**Q. What is the amount of the carrying costs incurred by Global as a result of their strategy of emplacing regionally based infrastructure?**

A. The carrying costs incurred by Global (net of Global Parents net income) come to $14,946,406.

**Q. You stated above that the Staff did not address the carrying cost issue at all in their Direct Testimony. Did Staff address the conservation and efficiency issues you discussed above?**

A. No. Staff's direct testimony contains no discussion of the conservation and efficiency benefits associated with the deployment of regionally-scaled infrastructure.

## V. The Implications of Staff's Recommendation to Treat 100% of the ICFA Fees Collected as Contributions.

**Q. Please discuss why Staff's recommendation to treat 100% of the ICFA fees collected as contributions is problematic.**

A. Staff's recommendation is problematic for at least three reasons. First, as I discussed above, Staff acknowledges that the ICFA fees could have been used for several purposes (such as to purchase utilities) but their recommendation focuses exclusively on one potential use. Second, Staff's recommendation will leave the Water Utility of Greater Tonopah ("WUGT") with a negative rate base. Third, Staff's recommendation ignores the tax effects of the ICFA fees.

### A. Acquisition Premiums.

**Q. Please describe the acquisitions Global has made since it started utilizing ICFA agreements.**

A. Global has spent $43,871,802 to acquire the following utilities: West Maricopa Combine, Sonoran (387 districts), Francisco Grande, CP Water Company, and Balterra Sewer Company.[21] The rate base of each of these utilities was negligible, and in some cases it was negative, at the time that they were purchased. Thus, the $43,871,802 also approximates the acquisition premium incurred by Global. Because many of the acquired utilities had negative rate bases the actual acquisition premium is more than the $43,871,802 cost of the acquisitions. For instance, the acquisition premium associated with just the Western Maricopa Combine utilities totaled $44,374,498.

[21] Global also purchased Palo Verde and Santa Cruz but that was prior to its use of ICFAs. The West Maricopa Combine Consists of Valencia Town Division, Valencia Greater Buckeye Division, WUGT and Willow Valley Water Company.

**Q. What is an acquisition premium?**

A. An acquisition premium is the difference between the rate base of a utility and the price paid to purchase that utility. For instance, if a utility has a rate base of $100,000 and it is purchased for $150,000 the acquisition premium is $50,000.

**Q. Can the acquiring utility earn a return on the acquisition premium?**

A. Typically no. Acquisition premiums are generally not included in rate base during the rate making process. This means that in the above example the acquiring utility would *never* earn a return on the $50,000.

**Q. Is Global seeking to include the acquisition premiums it paid in the rate base of the Global Utilities?**

A. No. Global is not seeking any adjustment to its utilities' rate bases to account for the acquisition premiums. This means that Global will *never* earn a return on the $43,871,802.

**Q. Why did Global pay such a high acquisition premium for the acquired utilities?**

A. Developers in that area approached Global Water because they were growing concerned with the dramatic increase in development activity, the proliferation of analyses of assured water supplies, and the continued drought. Many of the developers were concerned that the West Maricopa Combine (which was the parent for the utilities) was not structured to confront those challenges from a financial or a utility-based approach. West Maricopa Combine had little financial strength, and no wastewater utilities from which they could generate recycled water. Global Water negotiated for several months with the then-owners of West Maricopa Combine. The acquired utilities had little and in some cases negative rate bases, and their previous owners were not in a position to make the investments in them necessary to serve future demand. The previous owners were aware that

development was coming to their service areas and that made their CC&Ns valuable. They were able to leverage their possession of the CC&Ns into a higher price for their utilities.

**Q. If an acquiring utility were to use "cost-free capital" to offset an acquisition adjustment would rate payers be harmed?**

A. No. Consider the simple example above where a utility with $100,000 in rate base is purchased for $150,000 so that the acquisition premium is $50,000. Suppose that the acquiring utility used $50,000 in cost-free capital (i.e., a contribution from a developer) to partially fund the purchase. Since the $50,000 in cost-free capital is totally offset by the acquisition premium (on which no return can be earned) it is *not* the case that the acquiring utility would earn a return on cost-free capital.

**Q. Does Staff cite the potential to earn a return on cost-free capital as a reason for treating ICFA fees as contributions?**

A. Ms. Jaress is clear that protecting rate payers from the prospect of paying returns on cost-free capital is the primary driver behind Staff's recommendation to adjust the rate bases of the Global Utilities downward to account for the ICFA fees.[22]

**Q. In formulating their recommendation did Staff account for the substantial acquisition premiums paid by Global?**

A. No. Staff ignores the fact that Global will *never* earn a return on over $40 million of its investments in Arizona utilities. Thus, even if ICFA fees were considered to be cost-free sources of capital the over $40 million in acquisition premiums means that rate payers will not be paying a return on over $40 million of that cost-free capital.

[22] Linda Jaress Direct Testimony, page 13, lines 1 through 6.

**B. Negative Rate Base.**

**Q. Does Staff's recommendation result in a negative rate base for any of the Global Utilities?**

A. Yes, Staff's recommendation to strip $9 million out of WUGT's rate base will leave WUGT with a rate base of *negative* $6.4 million.

**Q. How are utilities with negative rate base handled in a rate case?**

A. Typically, when a utility with a negative rate base comes before the Commission for a rate case, its rate base is simply ignored and its rates are set on an operating margin basis. That is, a margin is simply added to its operating costs to obtain its revenue requirement. So for a utility with positive rate base the basic revenue requirement formula is:

Revenue requirement = (Rate Base x Rate of Return) + Operating Costs[23]

But for a utility with negative rate base the basic revenue requirement formula is:

Revenue Requirement = Operating Costs + Operating Margin

So when rate base is negative the revenue requirement is determined with no reference to the rate base or the rate of return on rate base.

**Q. What is the principal problem associated with utilities that have a negative rate base?**

A. *The biggest problem with a negative rate base is that it destroys the incentive to invest in utility plant. Since the negative rate base will "eat in" to any investment made in utility*

[23] Throughout this testimony "operating costs" includes depreciation, taxes and all other allowable expenses. Also, "rate base" refers to used and useful plant adjusted for depreciation.

*plant, the return on that investment will be degraded or obliterated.* For example, suppose there is a utility with a rate base of negative $100,000 and the utility would benefit from $50,000 worth of capital improvements. If the utility were to make that $50,000 investment it would receive no return on that investment. This is because the rate base would still be negative: ($100,000) + $50,000 = ($50,000). Thus, for rate making purpose the rate base is still irrelevant and the utility will *never* earn a return on the $50,000 investment.

**Q. What does this mean for Global?**

A. When Global purchased WUGT, it paid a premium of $31.7 million above WUGT's then rate base. As discussed above Global will *never* earn any return on that acquisition premium. Since then, Global made $2.6 million of investments in WUGT. Under Staff's recommendation Global will never earn a return on that $2.6 million. Additionally, since Staff's proposal leaves WUGT with a negative $6.4 million rate base Global will never be able to earn a return on the *next* $6.4 million of investments it makes in WUGT. So in total under Staff's recommendation Global will never earn a return on $40.7 million of investments it made or will make in WUGT.

**Q. What is Staff's rationale for adjusting WUGT's rate base into the negative range?**

A. Staff indicates that protecting ratepayers from paying a return on cost-free capital is the reason why it is adjusting the rate bases of the Global Utilities to account for the ICFA fees. Staff allocates $9 million of the ICFA fees to WUGT. WUGT's current rate base is $2.6 million. Netting out Staff's proposed $9 million adjustment and WUGT's $2.6 million rate base provides a negative rate base of $6.4 million.

**Q. In the current rate case, is there any danger that WUGT might earn a return on $9 million in allegedly cost-free capital?**

A. No. Since WUGT's rate base is currently $2.6 million, the most capital of any kind that WUGT can earn a return on is $2.6 million. So driving the rate base below zero is not necessary to achieve Staff's goal of preventing rate payers from paying a return on cost-free capital. To achieve Staff's goal it would only be necessary to drive WUGT's rate base to zero. In spite of this, Staff recommends saddling WUGT with a $6.4 million negative rate base even though it is completely unnecessary to achieve Staff's stated goal. That Staff would make such an extreme and unnecessary recommendation is disconcerting.

**Q. Did Staff address the significant disincentive to invest created by negative rate base in their direct testimony?**

A. Not really. However, in response to data requests, Ms. Jaress states that "If a utility has a negative rate base, the Commission allows a reasonable operating margin. Operating margin is profit and can be calculated as a return on plant. A return would still be earned, but calculated in a different manner."[24] While this statement is true, it misses the point. The minimal profit related to operating margin would be earned regardless of any new investment in plant. Thus, in economic terms, the return on investment is zero. In other words, an investor would not see a single extra dollar in return, even for a $ 1 million investment in WUGT. Indeed, Staff witness Crystal Brown concedes that a $1 million investment in WUGT would not generate any return: "If $1 million was the only investment in plant, then Staff would not recommend that the Company earn a rate of return until such time as the Company's investment in plant exceeded the $6,123,255 in CIAC."[25] Thus, in reality, Staff's recommendation, if adopted, would create a very strong economic disincentive towards investing in WUGT, or any other utility with a negative rate base.

[24] Staff Response to Global 2.21.b.
[25] Staff Response to Global 2.24.b.

1 **C. Taxes.**

2

3 **Q. Do the ICFA fees generate tax liabilities?**

4 A. Yes. The $60 million in ICFA fees received by Global generated $24 million in tax
5 liabilities.

6

7 **Q. Did Staff account for this tax liability when formulating their recommended rate base**
8 **adjustment?**

9 A. No. Staff's rate base adjustment is based on the pre-tax revenue generated by the ICFA
10 fees.

11

12 **Q. Does Staff offer an explanation for why they used the pre-tax revenue generated by**
13 **the ICFA fees rather than netting out the taxes when formulating their adjustment?**

14 A. No. As I stated above, Staff does not even mention the tax liability generated by the ICFA
15 fees in their Direct Testimony.

16

17 **Q. Do you believe it is appropriate to ignore the tax liability generated by the ICFA fees**
18 **when formulating an adjustment based on those fees?**

19 A. No. Staff's stated goal is to protect ratepayers from paying a return on (allegedly) cost-free
20 capital. Achieving that goal requires *only that the actual amount* of (allegedly) cost-free
21 capital available to Global be adjusted out of rate base. Since the tax liability associated
22 with the ICFA fees is 40%, only 60% of those fees are actually available to Global. Thus
23 Staff's adjustment should only have been based on at most 60% of the ICFA fees received.

24

25 **Q. Could the tax liability associated with the ICFA fees been avoided?**

26 A. For water companies, Capital raised through the traditional CIAC process is generally
27 considered to be tax-free. So one could argue that Global could have avoided the above

discussed tax liability by using traditional CIAC instead of the ICFA process. However, this is a faulty argument for at least two reasons. First, had Global used the traditional CIAC approach it would not have been able to implement its plan of building plant on a regional scale. Relying on tax-free CIAC to build plant puts developers in control of the plant that is built. Providing for the carrying costs of regionally scaled infrastructure and the acquisition premiums associated with purchasing undercapitalized utilities would not have been possible with traditional CIAC arrangements. Had Global used the traditional tax-free CIAC model and not pursued the ICFA option, Global's utilities would have had all of the problems typically associated with developer-funded plant. Additionally, all of the demonstrated conservation and efficiency benefits associated with Global's regional approach to infrastructure deployment would have been obliterated. In short, avoiding the tax liability associated with ICFAs would also mean avoiding the benefits of regional infrastructure.

Second, counterfactual arguments (such as Global could have avoided the tax liability had they done things differently) are generally not accepted in rate making proceedings.

## VI. <u>Adjustments to Rate Base.</u>

**Q. Have you reviewed Staff's adjustments to rate base?**

A. Yes. In relation to its view on GWR's ICFA's, Staff has recommended the imputation of CIAC on Santa Cruz, Palo Verde and WUGT.

**Q. Do you agree with this adjustment?**

A. No. The Company maintains that ICFAs are a financing arrangement at the Parent Company and should have no impact on the utilities' rate base.

The Company has not requested the inclusion of any acquisition premiums in rate base as acquisition of under-capitalized and poorly-run utilities is one of the uses of ICFAs, as discussed in Mr. Hill's direct testimony. The purchase of the West Maricopa Combine and 387 Domestic Water & Wastewater Improvement Districts was made possible due to the use of ICFAs. These systems are a perfect example of why utilities need to use regional planning as opposed to each developer building systems according to its own individual requirements. GWR could only purchase these companies due to its use of ICFAs.

Staff's imputation of CIAC effectively triple-hits the respective Company and GWR:

1. The Company has already excluded the inclusion of an acquisition premium, a burden that could not have been afforded absent ICFAs.
2. There is no recognition of the tax liability incurred in relation to the ICFA fees at GWR's level.
3. Actual Company expenditures on plant are being removed from rate base, while other actual costs related to the ICFAs are ignored

It is important to note that this "triple-hit" doesn't even take into account that the parent company is bearing the majority of the burden of executive costs, public outreach and education costs related to conservation programs, etc.

Looking at WUGT alone, Staff's imputation of CIAC to WUGT totals $9,022,750, almost twice the total amount of WUGT plant, which is $4,764,593. Due to the illogical difference in these balances, this seemingly indicates that Staff is essentially ignoring all of the factors in their entirety in regards to ICFAs in a predetermined effort to impute CIAC. This imputation also has a significant impact on the factors regarding the consolidation of West Valley rates, as noted in the extreme disparity in revenue requirement calculation between the Company and Staff.

## VII. Alternatives to Staff's ICFA Recommendation.

**Q. Has Global's position on the regulatory treatment of the ICFA fees changed since you filed your direct testimony?**

A. No. Global continues to believe that the proper regulatory treatment of the ICFA fees is to leave them out of the rate making process. However, in light of Staff's recommendation and acknowledging Staff's concern regarding the ICFA fees, we believe that it would be helpful to provide the Commission with alternative recommendations to consider.

### A. RUCO's Position on ICFAs.

**Q. What is RUCO's recommendation regarding the ICFAs?**

A. RUCO witness William A. Rigsby indicates that "ICFA funds that are intended to provide utility plant that is used to serve new development should be treated as CIAC." Mr. Rigsby goes on to recommend that the CIAC treatment of ICFA funds should only be implemented on a going-forward basis because the Commission has made no determination regarding ICFA fees to date. Thus, RUCO does not recommend any rate base adjustment based on ICFA fees in this rate case.

**Q. Please comment on RUCO's recommendation regarding the ICFA fees.**

A. While I disagree with RUCO's conclusion that the ICFA fees can be tied to plant additions, RUCO's position is reasonable, relative to the Staff's position, for two reasons.

First, RUCO acknowledges, at least implicitly, that directly funding plant is not the only use of the ICFA funds. Mr. Rigsby is clear that only the funds directly intended to build plant should be treated as CIAC. Additionally, in response to Global data request 2.2, RUCO indicated that using ICFA fees to offset acquisition premiums may be appropriate

and should be evaluated on a case- by-case basis. This is inherently more reasonable than Staff's recommendation to treat all of the ICFA funds as CIAC regardless of how they were used.

Second, RUCO acknowledges that the Commission has made no determination regarding ICFA fees and thus their recommendation should be implemented on a going-forward basis only. The ICFA model was adopted as an innovative approach to emplacing regionally-scaled infrastructure while avoiding the pitfalls of developer-funded infrastructure. Imposing Staff's recommendation to deduct 100% of the ICFA fees from rate base in this rate case would punish Global for being innovative and send the signal to the industry that innovation has inherent regulatory risks. RUCO's more reasonable approach of only implementing rate base disallowances on a going-forward basis avoids these pitfalls.

**B. Potential Modifications to Staff's Recommendation.**

**Q. Why are you offering potential modifications to the Staff's recommendations?**

A. While on the whole Staff's recommendation is rather unreasonable, we acknowledge that the Commission may be inclined to agree with some aspects of Staff's analysis. Given that, it is appropriate to explore potential modifications to Staff's recommendation that would lead to a more reasonable result. Given that Staff's principal concern is that the ratepayers not pay a return on (allegedly) cost-free capital we propose potential modifications to Staff's recommendation that would limit it to specifically addressing that concern:

- **Netting out the acquisition premiums:** Since Global will never earn a return on any of the acquisition premiums it has paid, netting the amount of those premiums (or some portion of those premiums) out of any rate base adjustment would not affect Staff's

stated goal of preventing rate payers from paying a return on allegedly cost-free capital. This could be done in two ways. First, it could be done on a system-wide basis whereby the total amount of Global's acquisition premiums are netted against the post-tax ICFA funds before any rate base adjustment is calculated. Alternatively, it could be done on a system-by-system basis whereby the acquisition premiums associated with specific utilities could be netted against the post-tax ICFA funds allocated to those utilities.

- **Netting out the tax liability:** As I discussed above the ICFA fees generated a significant tax liability. Since Global is unable to use amounts paid in taxes for any purpose, any adjustment to rate base resulting from the ICFA fees must start from the post-tax amount of the ICFA fees.

- **Netting out GWR level expenses:** Staff acknowledges that the ICFA revenues are offset by GWR's expenses. Thus, any adjustment to rate base based on the ICFA fees should be offset by the GWR expenses (or at least some portion of those expenses) that were not allocated to the utilities.

The following table shows the total amount of ICFA fees collected, the tax liability generated by those ICFA fees, the total of the acquisition premiums paid by Global and the amount of GWR expenses that were not allocated to the utilities.

| | |
|---|---|
| Total ICFA Fees Received | $60,084,123 |
| Tax Liability Generated by the ICFA fees | $24,057,683 |
| Total Acquisition Premiums Paid | $43,871,802 |
| Global Parent annual expenses not allocated to utilities | $3,930,676 |

**Q. Do you have any further comments on Staff's recommendation?**

A. In allocating the ICFA revenues to the Global utilities in order to determine its recommended adjustment, Staff excluded the ICFAs related to HUC because that utility is not involved in this rate case. However, the ICFAs related to Francisco Grande and C.P. Water which are also not included in this rate case were not excluded from Staff's adjustment. Since neither Francisco Grande or C.P. Water are participating in this rate case ICFA fees related to them should be excluded in any adjustment made based on Staff's recommendation.

## VIII. Cost of Capital.

### A. Cost of Equity.

**Q. Have the Global Utilities' position on the cost of equity changed since you filed your Direct Testimony?**

A. No. We continue to maintain that there is no need to conduct a full and detailed cost of equity analysis for this case. As I stated in my Direct Testimony:

Developing an independent cost of equity recommendation is a time consuming and expensive task. Arguments regarding return on equity can also take up a considerable amount of time at a hearing. Such lengthy arguments are costly both in terms of dollars for the Global Utilities and in terms of time for Global Water personnel attending the hearing. The Commission, Staff, the Hearing Division, and interveners also bear a burden in terms of time and dollars from lengthy arguments in a hearing and in developing pre-filed testimony. Usually, the utility's costs of that analysis and debate are returned to the utility as 'rate case expense' – borne by customers.

Thus, the Global Utilities decision to not provide a full cost of capital analysis is based on a desire to simplify the case and reduce the time and expense for all parties.[26]

We continue to believe that our recommended 10% cost of equity is appropriate for this case.

Recent Staff recommendations on coat of equity for wastewater companies are in line with our recommendation. For example, on September 21, 2009 Staff issued testimony in the Black Mountain rate case (Docket No. SW-02361A-08-0609) that is consistent with our requested 10% cost of equity. Additionally, Staff is recommending a 10% cost of equity in the ongoing Arizona Water Company rate case (Docket No. W-01445A-08-0440.) Also, on October 21, 2009 the Commission issued Decision No. 71308 in the Chaparral City Water Company rate case which adopted a 9.9% cost of equity.

Given that recent Staff recommendations and Commission Decisions are in line with our original recommendation, there is no reason for the Global Utilities to change their position on the cost of equity at this time.

**Q. Please discuss Staff's position on the cost of equity laid out in the Direct Testimony of Ms. Jaress.**

A. Ms. Jaress has taken a reasonable position on the cost of equity. Staff recognizes that typically arguments surrounding the cost of equity generate significant expenses and take up a considerable amount of time during the hearing process. Ms. Jaress also points out that recent Commission Decisions and Staff recommendations are in line with the Global Utilities' recommended cost of equity. Staff acknowledges that the fundamental analysis used to determine the cost of equity is the same regardless of which utility that analysis is

[26] Rowell Direct pages 27 and 28.

applied to. Therefore, conducting that analysis for Global will yield little if any new insight into the Global Utilities' cost of equity.

**Q. Please discuss RUCO's position on the Cost of Equity as laid out in the testimony of Mr. Rigsby.**

A. Mr. Rigsby has conducted a traditional cost of equity analysis whereby he applies the Discounted Cash Flow ("DCF") and the Capital Asset Pricing Model ("CAPM") to a sample of utilities. The results of these models are averaged to come to RUCOs's recommended cost of equity of 8.01%.

**Q. Will the Global Utilities counter RUCO's analysis by developing its own cost of equity analysis?**

A. As discussed above, the Global Utilities initially elected not to perform a full cost of equity analysis in order to save itself, the Staff, the Commission and RUCO the expense of contesting the cost of equity issue. Given that recent Staff recommendations and Commission decisions are consistent with Global's initial cost of equity recommendation, and in light of the Staff's recommendation in this case, we do not believe it is necessary to deviate from our original strategy. Therefore, we will not be countering Mr. Rigsby's analysis with a full blown cost of equity analysis of our own.

**Q. Do you have any comments of Mr. Rigsby's testimony?**

A. I have reviewed Mr. Rigsby's testimony and find it consistent with previous RUCO testimony. Given the above discussion I do not believe that a point-by-point rebuttal of Mr. Rigsby's testimony is necessary or appropriate. I will only point out that RUCO's recommended cost of equity is well below that recommended by Staff in this and other recent water and wastewater rate cases. RUCO's recommended cost of equity is also less

than that approved by the Commission in Decision No. 71308 in the Chaparral City Water Company rate case issued on October 21, 2009.

**B. Capital Structure and Cost of Debt.**

**Q. Please discuss Staff's recommendations regarding the capital structures of the Global Utilities.**

A. Staff accepts the Global Utilities' recommended capital structures for Palo Verde and Santa Cruz. For Willow Valley, Valencia – Town Divisions and Valencia – Greater Buckeye Division Staff recommends hypothetical capital structures. Ironically, Staff basis their recommendation to adopt hypothetical capital structures for these companies on the acquisition premiums paid for them by Global.

**Q. Why do you believe it is ironic that Staff would use the acquisition premiums paid for these companies as a basis for adopting a hypothetical capital structure?**

A. As I discussed in the ICFA section of my testimony, in Staff's discussion of the ICFA issue they chose to completely ignore the significant acquisition premiums paid by Global for these utilities. Yet when discussing capital structure, Staff relies on the acquisition premiums to justify their position.

**Q. Please discuss RUCO's recommended capital structures for the Global Utilities.**

A. Mr. Rigsby has developed a composite capital structure based on the combined amounts of long-term debt and equity of the six utilities involved in this rate case. This provides a capital structure of 37.89% debt and 62.11% equity. RUCO also recommends a composite cost of debt of 6.44% based on the weighted average of the six utilities' costs of debt.

**Q. Do you agree with Staff and RUCO's recommendation to adopt a hypothetical capital structure?**

A. I could take issue with both the methodologies used and the results obtained by Staff and RUCO. However, in the spirit of compromise, the Global Utilities will accept RUCO's recommended cost of debt and capital structures for Willow Valley, Valencia – Town Division, Valencia – Greater Buckeye and WUGT.

**Q. Why is Global not also accepting RUCO's recommended cost of debt and capital structure for Palo Verde and Santa Cruz?**

A. We are accepting RUCO's costs of debt and capital structure as a compromise position. Adopting RUCO's cost of debt and capital structure along with Global's recommended cost of equity would result in an increase in the overall cost of capital for those utilities relative to our original request. Thus, including those utilities would not be a compromise and would rightly be considered to be self-serving. Therefore, for Palo Verde and Santa Cruz we continue to recommend the adoption of the capital structure, cost of debt and cost of equity as laid out in my Direct Testimony.

**Q. What is the effect of adopting RUCO's cost of debt and capital structure on the relevant utilities?**

A. The compromise we are presenting here results in reductions to the utilities' overall costs of capital is shown below:

| **Company** | Cost of Capital Global Direct | Cost of Capital Global Rebuttal | Difference |
|---|---|---|---|
| Valencia – TD | 9.24% | 8.65% | 0.59% |
| Valencia – GBD | 9.72% | 8.65% | 1.07% |
| WUGT | 9.94% | 8.65% | 1.29% |
| Willow Valley | 9.24% | 8.65% | 0.59% |

# EXHIBIT A-14

**DOCKET NOs. SW-02445A-09-0077 *et al.***

# Rate Design Rebuttal Testimony
# of
# Matthew J. Rowell

**November 30, 2009**

EXHIBIT
A-14
ADMITTED

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## I. Introduction.

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

A. This testimony compares Global's proposal to consolidate the rates of WUGT, Greater Buckeye and Town Division with the criteria laid out by Staff in Docket No. W-10303A-08-0227. My testimony also responds to Staff's and RUCO's recommendations to reject the consolidation proposal. Finally, I show the impacts on typical residential customers of the consolidation proposal.

## II. Staff's Rate Consolidation Criteria.

**Q. Since filing your direct testimony has anything been filed with the Commission that is relevant to Global's consolidation idea?**

A. Yes, on March 13, 2009 Mr. Elijiah O. Abinah filed surrebuttal testimony on behalf of Staff in the Arizona-American rate case (Docket No. W-10303A-08-0227) which directly addressed the concept of rate consolidation. In that testimony Mr. Abinah laid out a list of criteria that should be considered when evaluating a rate consolidation proposal.

**Q. How does Global's proposal for consolidation of the West Valley utilities compare to Staff's criteria laid out in Mr. Abinah's testimony?**

A. I believe Global's proposal compares quite favorably with Staff's criteria. Staff listed the following criteria for evaluating consolidation proposals:

- Public health and safety
- Proximity and location
- Community of interest
- Economies of scale/rate case expense
- Price shock/mitigation

- Public policy
- Other jurisdictions

**Q. Please discuss the public health and safety factor.**

A. Staff presents a hypothetical example of a small utility that needs to substantially upgrade its system in order to "alleviate health or public safety issues such as water quality." Staff points out that with few customers to bear the costs of such an investment, the rate increase associated with such improvements could be quite large for the individual customers of the small utility. However, if the small system were consolidated with one or more other systems the rate impact would be mitigated because the cost of the necessary investments can be spread across many more customers.[1] Staff's hypothetical example is remarkably similar to the actual circumstances faced by Global's West Valley utilities. Water Utility of Greater Tonopah ("WUGT") has a small number of customers (about 350). The WUGT systems have required substantial upgrades, including arsenic and fluoride removal systems, and other infrastructure mandated by Commission decisions (e.g. a secondary water source for WUGT's Sun Valley system). Without consolidation, rate recovery for these improvements falls entirely on these few customers. Combined, the three West Valley utilities have 6,000 customers, and the infrastructure costs can be spread across this larger customer base.

Staff also states that "One of the most valuable outcomes of consolidated rates is that it allows the purchase of these systems by larger, more stable companies who can in turn spread this investment over a much larger customer base."[2] We agree with Staff on this point, rate consolidation makes the purchase of small utilities much more attractive because it avoids the rate shock problems associated with making necessary upgrades to small systems.

[1] Surrebuttal Testimony of Elijah O. Abinah, Docket Nos. W-01303A-08-0227 et al., page 9 line 26.
[2] Ibid, page 9, line 2.

**Q. Please discuss the proximity factor.**

A. Staff believes that proximity is an important but not necessary factor in evaluating a consolidation proposal. Additionally, Staff believes that physical interconnection should be required when technically and financially feasible. Valencia's Greater Buckeye Division and Town Division are both located in or near Buckeye in the West Valley. WUGT's service territory is located in Tonopah about twenty miles west of Buckeye. All three of the utilities are served by operators from Global's west valley regional center in Buckeye.. So the three utilities are in the same general area and share the same employees. While these three utilities are in relative proximity to each other, interconnection of their systems is not technically or financially feasible. In fact, there are separate public water systems *within* each utility that are not physically interconnected. Interestingly the rates of the separate public water systems within each utility are consolidated.

**Q. Please discuss the community of interest factor.**

A. Staff indicates that consideration of a "community of interest" should also influence decisions regarding consolidation. For instance, Staff suggests that whether the relevant "districts/systems have a common interest such as, schools, hospitals, recreational parks, churches, etc."[3] should be considered when deciding whether those systems should be consolidated. A community of interest exists amongst the three utilities' service areas as they use common recreational and medical facilities. In fact, most amenities (other than schools) require travel into the Buckeye area (or even further into the Phoenix metro area.)

**Q. Please discuss the economies of scale / rate case expense factor.**

A. Staff asserts that the potential for economies of scale in rate case expense and other areas is a factor to consider when evaluating consolidation proposals. There are definitely economies of scale associated with these three utilities. In terms of rate case expense,

[3] Ibid, page 9, lines 16-20.

putting together one consolidated set of rate case schedules instead of three separate ones would save a considerable amount of time and effort. This reduction in time and effort applies to the Staff and interveners as well as the utility. My experience assisting Global personnel putting this rate case filing together allows me to testify from first-hand knowledge that consolidating these three systems would result in a significant reduction in time and effort in future rate cases. In addition to rate case expense, these three utilities achieve economies of scale in operations as well. As I stated above, all three of the utilities are served out of Global's west valley regional center in Buckeye.

**Q. Please discuss the price shock / rate mitigation factor.**

A. Staff posits that the potential for price shock and mitigation efforts should be considered when evaluating consolidation proposals.[4] Global's consolidation proposal will substantially mitigate the impact of the rate increase on WUGT's customers while having a much less dramatic effect on Valencia – Greater Buckeye Division's and Valencia's – Town Division's customers. See section IV below for further discussion of this topic.

**Q. Please discuss the public policy factor.**

A. Staff asserts that public policy considerations should be considered when evaluating consolidation proposals. Specifically, Staff cites three "key public benefits" arising from rate consolidation[5] and all three of these benefits apply to Global's current proposal:

1. The opportunity for efficient consolidation of small troubled water companies, some of which may be some distance from other companies' current foot print.

[4] Ibid page 10 lines 4-22.
[5] Ibid page 11 lines 1-13.

The three utilities involved were all undercapitalized and in need of improvements when purchased by Global. Rate consolidation will promote future consolidation of similar systems.

2. The ability to minimize severe price shocks experienced by one or two communities as a new facility or major upgrade is undertaken.

Global's consolidation proposal is specifically intended to mitigate the rate shock for WUGT's customers (discussed further below.)

3. Improving the effectiveness of certain key programs such as low income tariffs by including resources from across the state.

Global's proposed low income tariff (discussed in the Rebuttal Testimony of Mr. Symmonds) is designed to operate across all the Global Utilities. Therefore, it will be largely unaffected by the outcome of the rate consolidation proposal. Without cross-utility subsidies, the low income tariff would be untenable for smaller utilities like WUGT.

Also, Global's tiered rate structure will be easier to administer and educational material will be easier to prepare and disseminate with one set of rates rather than three.

While it was not specifically identified as a public policy factor by Staff, Global believes that in cases where the utilities rely on a common aquifer and must jointly coordinate water use there is a strong public policy factor supporting consolidation.

**Q. Please discuss the other jurisdictions & municipalities factor.**

A. Staff suggests that examining other jurisdictions' treatment of rate consolidation is appropriate.[6] The issue of rate consolidation for water utilities has been reviewed by

[6] Ibid page 11 lines 15-16.

NARUC and in 2005 rate consolidation was adopted as a "best practice" by the NARUC board of directors.[7]

**Q. Are there other aspects of the Arizona-American rate case that are relevant to Global's consolidation proposal?**

A. Yes. In its Decision in the Arizona-American docket the Commission specifically recognized the benefits of rate consolidation and held the docket open to allow for a discussion of rate consolidation. Also, Staff was directed to propose at least one consolidation proposal in Arizona-American's "next rate case." This shows a clear and positive interest in consolidation by the Commission. Therefore, the issue should be given due consideration in this case.

## III. <u>Response to Staff's and RUCO's Direct Testimony</u>.

**Q. Please discuss Staff's position on Global's rate consolidation proposal.**

A. Staff's rejection of the consolidation proposal stems from Staff's recommended revenue requirements for the three utilities. Staff states that: "A benefit of that subsidization can be that spreading costs among the customers of larger systems helps to mitigate a significant rate impact to customers of smaller systems."[8] Under Global's recommended revenue requirements the consolidation proposal would have this benefit: WUGT's (the smallest of the three companies) 240% stand-alone revenue increase would be significantly mitigated through consolidation with Valencia's Greater Buckeye and Town Divisions. But under Staff's recommended revenue requirements (which strip WUGT of its rate base), WUGT actually receives a revenue decrease. Under Staff's proposed revenue requirements

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[7] *Resolution Supporting Consideration of Regulatory Policies Deemed as "Best Practices"*, Sponsored by the Committee on Water, Adopted by the NARUC Board of Directors, July 27 2005. Available at: http://www.naruc.org/Resolutions/BestPractices_s0705.pdf.

[8] Direct Testimony of Crystal Brown, page 29 lines 21-22.

Global's consolidation proposal would result in WUGT and the Greater Buckeye Division subsidizing the Town Division (the largest of the three companies). Since Staff did not file a consolidated rate design, we cannot determine the extent of such subsidization. However, if Global's revenue requirement (or a similar revenue requirement) is adopted, the rate consolidation of WUGT, Greater Buckeye and Town Division would provide the benefits that Staff recognizes.

**Q. What is RUCO's position on Global's rate consolidation proposal?**

A. RUCO opposes the consolidation proposal because they believe that the small number of WUGT customers implies that there will likely never be an opportunity for reciprocity. That is, RUCO believes that it is unlikely that WUGT customers will ever subsidize Greater Buckeye and/or Town Division plant additions in the future.[9] In other words, RUCO is opposed to consolidation where the goal is to "to mitigate the rate increase of the smaller system by having the larger system pay more than its fair share."[10]

**Q. How do you respond to RUCO's position on the consolidation proposal?**

A. First, I am unaware of the potential for future reciprocity being used to evaluate consolidation proposals. Staff does not cite the potential for reciprocity as a factor in evaluating consolidation either in this case or in the Arizona-American testimony discussed above. Generally, the point of consolidation is for larger systems to subsidize smaller ones. In an environment where growth is static, the smaller systems would never be in a position to subsidize the larger ones. Thus, if the potential for reciprocity is a determining factor, almost all consolidation proposals would be rejected.

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[9] Rate Design Testimony of William A. Rigsby, page 4 line 21.
[10] Rate Design Testimony of William A. Rigsby, page 5 lines 14-16.

Second, the WUGT system has a greater potential for growth than Greater Buckeye and Town Division. The Belmont (and other) developments are located within WUGT's CC&N area. These developments could bring substantial customer growth to WUGT over the next decade. The Commission recognized the potential for growth in WUGT's service territory in Docket No. W-02450A-06-0626. Additionally, the Town Division is land locked and thus has no potential to extend its CC&N boundaries. The Greater Buckeye Division does have some growth potential but current projections indicate substantially more growth in WUGT's service territory. If, as expected, WUGT's customer base grows at a faster rate than Greater Buckeye's and Town Division's it will eventually catch up to their customer levels. Thus, at some point in the future, WUGT may be in a position to provide a subsidy to Greater Buckeye and Town Division.

## IV. Impacts of the Consolidation Proposal.

**Q. Has Staff provided an analysis of the customer impact of the consolidated rate proposal?**

A. Not really. At Page 9 of her Direct Testimony, Staff witness Crystal Brown presents a table showing Staff's recommended percent increase under consolidated rates to be 45.72% for each of the three utilities. This 45.72% increase under consolidated rates does not demonstrate the actual customer impact for each system or the overall revenue increase for *each* system. The 45.72% is the overall required increase in revenues for all three utilities *combined.* Thus, Staff's analysis does not demonstrate the actual impact to customers of any of the utilities under consolidated rates, nor if there is any derived benefit or detriment from consolidating rates. Consolidated and unconsolidated rate designs would need to be developed in order to perform an actual comparison of rates. This rate design comparison is necessary to truly see each company's average customer bill impact

to determine if there is or is not reasonable benefit derived from the implementation of consolidation.

**Q. Has Global developed consolidated and unconsolidated rate designs that can be used for comparison purposes?**

A. Global did provide such comparative rate designs with its Direct Testimony (see Schedule H-4.) The following tables summarize the impact of Global's requested rate increase on residential customers (5/8" meters) with average consumption with and without consolidation. Table 1 shows the rate impact on the three companies without consolidation:

**Table 1 Rate Impact 5/8"Residential Customers *No* Consolidation[11]**

| | Present Rates | Unconsolidated Increase | Unconsolidated % Increase |
|---|---|---|---|
| **Town Division** | **$29.64** | **$10.33** | **34.9%** |
| **Greater Buckeye** | **$40.94** | **$10.67** | **26.1%** |
| **WUGT** | **$47.62** | **$52.21** | **109.6%** |

As can be seen, WUGT's customers will experience a substantial rate increase absent consolidation.

[11] Source: Schedule H-4 Typical Bill Analysis.

Table 2 below shows the rate impact on the three companies with consolidation:

**Table 2 Rate Impact 5/8"Residential Customers *With* Consolidation**

| | Present Rates | Consolidated Increase | Consolidated % Increase |
|---|---|---|---|
| **Town Division** | **$29.64** | **$15.1** | **50.9%** |
| **Greater Buckeye** | **$40.94** | **$18.95** | **46.3%** |
| **WUGT** | **$47.62** | **$7.62** | **16.0%** |

So with consolidation the impact on WUGT's customers is mitigated substantially.

Table 3 below shows the difference between the consolidated and unconsolidated rate designs:

**Table 3 Difference Between Consolidated and Unconsolidated Increases for 5/8"Residential Customers**

| | Consolidate Rate Increase | Unconsolidated Rate Increase | Difference |
|---|---|---|---|
| **Town Division** | **$15.10** | **$10.33** | **$4.77** |
| **Greater Buckeye** | **$18.95** | **$10.67** | **$8.28** |
| **WUGT** | **$7.62** | **$52.21** | **($44.59)** |

Table 3 shows that the benefits to each WUGT customer from consolidation far exceed the costs of each Greater Buckeye and Town Division customer.

**Q. Please summarize your testimony.**

A. My testimony demonstrates that Global' proposed rate consolidation proposal should be approved based on Staff's proposed criteria for evaluating such proposals. I have explained that Staff's rejection of the proposal is a result of Staff's proposed revenue requirement (which strips WUGT of its rate base – a point we contested in our Rebuttal

testimony[12]) and not a result of any problems inherent in the rate design proposal itself. I have also explained that RUCO's use of potential reciprocity as a criterion for evaluating consolidation proposals would result in the rejection of almost all such proposals. However, WUGT's potential for relative growth means there is a potential for reciprocity in this case. Finally, I have shown that consolidation's benefit to each WUGT customer far exceeds the cost to each Greater Buckeye Division and Town Division customer. For all these reasons Global continues to recommend that its proposed consolidation of WUGT, Greater Buckeye and Town Division be approved by the Commission.

**Q. Does this conclude your rate design testimony?**

A. Yes.

[12] See Rebuttal Testimony of Matt Rowell, 20 November 2009

# EXHIBIT A-15

**DOCKET NOs. SW-02445A-09-0077 *et al.***

**Rejoinder Testimony**
**of**
**Matthew J. Rowell**

**December 10, 2009**

EXHIBIT
A-15
ADMITTED

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## I. Introduction

**Q. Can you outline your rejoinder testimony?**

A. In this testimony, I respond to Staff's treatment of ICFA revenues, and their assertion that ICFA revenue funded plant. I speak to the taxation issue and rebut Ms. Jaress' assessment that Palo Verde and Santa Cruz have higher plant/connection metrics than do other utilities.

## II. Staff's Treatment of ICFAs

**Q. Have any additional implications of Staff's recommendation regarding ICFA fees come to light since your Rebuttal Testimony was filed?**

A. Yes. In response to Global's Data Request 3.3, Staff indicated that their recommendation not only excludes $17,591,204[1] of investment from Palo Verde's and Santa Cruz's rate base in this case, it also intended to exclude the $32,391,318 Global invested in the Southwest Maricopa region from *future* rate base treatment. As I discussed in my Direct Testimony, the Southwest plant was built in order to comply with Commission Decision No. 68448 and it now sits unused. Global voluntarily excluded this plant from rate base consideration in this rate case. Because of this Staff netted the Southwest plant investment out of its recommended rate base disallowance. It is now clear that Staff intends to extend its recommended disallowance to the Southwest plant in a future rate case.

**Q. What are the implications of Staff's intent to preclude rate base treatment of the Southwest plant in a future rate case?**

A. Essentially this means that the total effect of Staff's recommended disallowance for Palo Verde and Santa Cruz is not just $17,591,204 but is $49,982,522. It also means that under Staff's recommendation not only is Global not earning a return on the Southwest plant

[1] See page 14 lines 17 and of Direct Testimony of Lind Jaress. Staff recommends rate base reductions of $10,991,128 for Palo Verde and $6,600,076 for Santa Cruz.

now, but that Global will never earn any return on that plant. In short, Staff recommendation is that Palo Verde and Santa Cruz bear not only the carrying costs of this plant forever, rather than until it is placed into rate base, and that Palo Verde and Santa Cruz also bear the original cost of the plant.

**Q. Do you have any general comments on Ms. Jaress' Surrebuttal Testimony?**

A. Ms. Jaress' Surrebuttal Testimony does not address the *primary* flaw in Staff's analysis of the ICFAs. As I stated in my Rebuttal Testimony, Staff has concluded that there are several potential and actual uses for the ICFA fees but Staff recommends treating these fees as if they were all used for one purpose: funding plant. Thus there is a fundamental disparity between Staff's analysis and its recommendation. Ms. Jaress' Surrebuttal Testimony does not dispute that this disparity is real. Ms. Jaress' Surrebuttal Testimony reconfirms Staff's belief that the ICFA fees could have been used for multiple purposes but does not attempt to reconcile this fact with Staff's recommendation to treat *all* of the ICFA fees as if they were used for one purpose. In fact, Ms. Jaress characterizes Staff's conclusion that the ICFA fees were used as plant as an assumption.[2]

**Q. Ms. Jaress points out that equity financing is "the most expensive form of financing plant" and raises protecting rate payers from this expensive form of financing as an additional reason for treating the ICFA revenues as contributions.[3] Do you find this argument persuasive?**

A. No. It is true that the Global Utilities have relatively high equity balances. However, Global has agreed to hypothetical capital structures for the utilities involved in this rate case so rate payers will not be impacted by these high equity balances. Global's acceptance of the hypothetical capital structures alleviates the impact of the relatively high

[2] Jaress St at p. 2 line 1
[3] Id. at p. 2 line 3-5

cost of equity. Thus, treating ICFA revenues as contributions is not necessary to "protect the ratepayer from uneconomic financing of plant"[4] as Staff suggests.

## III. Staff's treatment of Taxes and Expenses associated with ICFAs

**Q. Please comment on Ms. Jaress' explanation of why Staff does not recognize the tax liability generated by the ICFA revenues.[5]**

A. Staff's analysis of the tax liability issue is flawed for several reasons. First, Ms. Jaress implies that an LLC's earnings only generate a tax liability when the LLC's members do not have "offsetting tax losses." This is simply not true. LLC earnings generate a tax liability for the members whether there are other offsetting tax losses or not. Further, and more importantly, the discussion regarding corporate structure is irrelevant to the subject at hand (the treatment of the tax liability generated by the ICFA revenues.) Irrespective of how Global Parent is organized the ICFA revenues generate a tax liability (and Staff does not dispute that.) If Global Parent were organized as a corporation rather than as an LLC the ICFA revenues would still generate a tax liability. Irrespective of the corporate structure, the tax liability generated by the ICFAs means that a significant portion of the ICFA revenues received is not available to use for any purpose other than to cover the tax liability. I understand that the tax liability generated by a regulated entity organized as an LLC is generally not recognized by the Commission for ratemaking purposes. However, the discussion above does not pertain to that point. Rather, the issue at hand is what portion of the ICFA revenues received were actually available to be put to use. And if we are discussing Ms. Jaress' belief that *all* ICFA revenue went to fund plant, then she must use the actual dollars.

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[4] Id. at p. 2 line 4
[5] Id. at p. 4-5

**Q. But does not Ms. Jaress also argue that there would be no tax liability had the ICFA revenues been treated as traditional contributions?**

A. Ms. Jaress may be correct on that point, if the IRS agrees that ICFA fess may qualify for the tax-free status of traditional water and wastewater contributions. At this point, we simply don't know what the IRS would do in that situation. However, relying on traditional contributions would have made Global's strategy of building plant on a regional basis impossible to implement. This point is addressed further in Mr. Hill's Rejoinder Testimony.

**Q. At page 5 of her Surrebuttal Testimony Ms. Jaress summarizes the problem with the ICFA arrangement. Please comment.**

A. Ms Jaress states as follows: "The problem with this arrangement is that *after* the ICFA revenues flow through the income statement and become net income, Global Parent invests the net income into the Global Utilities as equity and has asked the Commission to allow a 10 percent return on that equity. If the Commission allowed that return, ratepayers would be paying a 10 percent return on cost-free capital." (Emphasis added.) As I stated in my Rebuttal testimony, Staff concedes that only the portion of the ICFA revenues that remains *after* the revenues flow through the Global Parent's income statement are available to the utilities. In spite of this open acknowledgement Staff's recommendation assumes that *all* of the ICFA revenues are available to the utilities. Further, Staff acknowledges that the ICFA revenues could have been used for purposes that do not add plant and that do not generate any return (such as covering the acquisition premiums of purchased utilities.) Yet Staff continues to argue that ratepayers will be paying a return on all of the ICFA revenue if their recommendation is not adopted. Finally, Global's acceptance of hypothetical capital structures ensures that ratepayers will not be paying a 10% return on equity injected into the utilities by Global Parent.

**Q. In discussing Global's purchase of WUGT Ms. Jaress states that "The Commission has never indicated that the acquisition of small water companies should be rewarded by allowing a return on plant paid for with cost-free capital."[6] Is Global seeking to be rewarded by receiving a return on cost-free capital?**

A. No. The significant acquisition premium paid for WUGT and the other West Maricopa Combine ("WMC") utilities ensures that Global will not earn a return on a significant portion of its investment in those utilities. In other words, whether the source of capital used to fund the acquisition of the WMC utilities was cost-free or not, Global will not be earning a return on it.

In addition, Ms. Jaress is not correct to assume that there is "plant paid for with cost-free capital" related to the WMC acquisition. In fact, there is no plant at all in the areas covered by the WMC-related ICFAs. Moreover, the original cost of the WMC assets did not change simply due to the closing of the WMC acquisition or the receipt of the related ICFA funds, as Staff concedes.[7]

**Q. At page 15 of her Surrebuttal Testimony Ms. Jaress argues that Global did not use "cost-free capital" to finance the purchase of the WMC. How do you respond?**

A. Here Ms. Jaress relies on Global Parent's 2008 annual audited financial statements. Based on information contained on page 19 of that report she concludes that the purchase of WMC was financed with debt. Ms. Jaress' interpretation of that document is incorrect as the WMC purchase was not debt financed and financial statements do not state that it was. Additionally, on the same page of the financial statements it is stated explicitly that the ICFA fees were used to finance the WMC purchase. It should be noted that these financial statements are audited by Global's independent auditors. Thus, the independently-audited

[6] Id. at p. 8-9
[7] See Staff Response to Global Data Request 2.24.A.

financial statements in this case prove that the ICFA fees were used to finance the purchase and Ms. Jaress overlooks that fact to reach her conclusion.

**Q. Further along on page 15 of her Surrebuttal Testimony Ms. Jaress argues that Global has failed to identify the expenses and costs that should offset the ICFA fees. How do you respond?**

A. My discussion in Rebuttal Testimony of the expenses that should offset the ICFA fees was not a formal proposal but rather was a reaction to Staff's open acknowledgement that only the portion of ICFA fees that are not offset by Parent Level expenses are available to the Utilities. I discuss this issue above in this Rejoinder Testimony and at length in my Rebuttal Testimony.

**Q. Can you please clarify this issue of Parent Level expenses?**

A. Yes. Staff removes all ICFA fees from Global Parent revenues and imputes them as CIAC, but effectively leaves all expenses at the Global Parent, many of which would be borne by the utilities if Global parent wasn't carrying them.

For example, as shown in Global Parent's 2008 financial statements (pg 38 column 4), GWR had $11.26 million of expenses in 2008, of which $2.13 million were public offering costs that Global has agreed never to impute to its utility customers, leaving up to $9.13 million of expenses which could have been passed down to the utilities were it not for the revenue provided by the ICFAs. This example only considers 2008; similar expenses were borne by Global Parent in previous years as well.

**Q. Why did the Company focus its arguments on carrying costs and acquisition costs rather than these parent level expenses?**

A. Perhaps naively, the Company focused on acquisition costs and unrecovered carrying costs related to investment in regional plant because they are not as apparent as the actual Global

Parent expenses which are provided in the financial statements. The Company attempted to focus on the issues it thought would be debatable, not the basic information provided in the financial statements which had not been questioned at any point. Simply put, these are the hard costs which have been accounted for at Global Parent. Thus these are costs that were carried by Global Parent.

**Q. What has Staff done with these expenses?**

A. Staff has ignored all expenses borne by Global Parent, although they have removed essentially all of Global Parent's revenues. This unbalanced adjustment will cause great hardship on Global Parent and the utilities.

## IV. Plant per Connection Metrics

**Q. In your rebuttal testimony you presented several charts that demonstrate the lower operating costs of Palo Verde and Santa Cruz relative to a sample of other Arizona water and sewer utilities. Ms. Jaress counters this analysis by pointing out that that the Global Utilities have high plant values relative to other Arizona utilities.[8] How do you respond?**

A. I believe that Ms. Jaress' analysis on this point is flawed. Ms. Jaress contends that plant is the "largest component of service and the largest cost component of regional planning."[9] If Ms. Jaress is implying here that plant has a greater impact on revenue requirement (and thus customer rates) than operating costs then she is incorrect. Typically, operating costs are a larger component of the revenue requirement than the return on plant. Since operating costs are recovered on a dollar for dollar basis and plant is only afforded a return, operating costs have a much greater impact on rates than plant costs. Using Global's requested 8.49% rate of return this means that every dollar of additional plant results in 8.49 cents of revenue requirement while every dollar of additional expense results in a

[8] Id. at p.13-14
[9] Id. at p. 23

dollar of revenue requirement. Ms. Jaress also fails to take into account the dramatic reduction in operating expenses obtained through the deployment of Total Water Management as described in Mr. Symmonds' direct testimony.

Additionally, the plant costs that Ms. Jaress displays in her Exhibit LAJ - 1 include CWIP (specifically the SW Plant in the case of Palo Verde and Santa Cruz.) CWIP is not included in rate base in this application and thus has no effect on customer rates. A more appropriate comparison is of utility plant less depreciation per customer. Table 1 and 2 below show utility plant less depreciation ("OCLD") per customer for a sample of Arizona water and sewer companies.

**Table 1: OCLD Per Customer Sample of Water Companies**

| | Customers | OCLD | OCLD/Customers |
|---|---|---|---|
| Lago Del Oro (Robson) | 6,346 | $7,194,217 | $1,134 |
| Pima (Robson) | 10,187 | $11,909,587 | $1,169 |
| Chap City Water | 13,423 | $44,194,491 | $3,292 |
| Litchfield Park Service Company (water) | 16,023 | $62,611,426 | $3,908 |
| Santa Cruz | 16,654 | $79,661,216 | $4,783 |
| Johnson Utilities (water) | 19,625 | $72,664,001 | $3,703 |
| Arizona Water | 83,721 | $298,653,724 | $3,567 |
| Arizona American (water) | 106,039 | $430,758,887 | $4,062 |
| Sample Average | | | $3,704 |

**Table 2: OCLD Per Customer Sample of Wastewater Companies**

| | Customers | OCLD | OCLD/Customers |
|---|---|---|---|
| Black Mountain Sewer | 2,130 | $7,512,988 | $3,527 |
| Pima (Waste Water) | 10,046 | $10,490,285 | $1,044 |
| Palo Verde | 15,262 | $91,187,165 | $5,975 |
| Litchfield Park Service Company (waste water) | 17,907 | $52,612,921 | $2,938 |
| Arizona American (waste water) | 21,965 | $146,550,046 | $6,672 |
| Johnson Utilities (waste water) | 25,680 | $120,867,771 | $4,707 |
| Sample Average | | | $4,616 |

Using this methodology, the differences are not nearly as dramatic as Ms. Jaress asserts.

Staff concludes that the relatively high plant costs of the Global Utilities are "due to regional planning."[10] This is a fair conclusion and Global has never disputed that its strategy for deploying regionally scaled infrastructure results in higher plant costs. However, by the same token it is reasonable to conclude that the offsetting low operating costs of the Global Utilities are also a result of regional planning.

**Q. Do you have any concluding comments?**

A. Yes, I would like to address the issue of regional infrastructure (i.e., Total Water Management.) Ms. Jaress indicates that Global has not provided a clear and concise definition of Total Water Management.[11] It may be true that Global has not been concise on this point but they have been clear. Total Water Management is not just the use of recycled water (as Ms. Jaress implies) it is also the use of regionally scaled infrastructure which has real efficiency benefits. As an outside and independent consultant I have to

[10] Id. at p. 14
[11] Id. at p. 3

admit that for a time I was somewhat fuzzy on this Total Water Management concept as well. Global witness Graham Symmonds' Direct Testimony comparing Santa Cruz's operations with Valencia's lays out the real and tangible benefits of the Total Water Management approach.[12] It was this testimony that crystallized the concept in my mind and I suggest that anyone who has confusion or doubts about the Total Water Management approach review that testimony closely.

**Q. Does this conclude your rejoinder testimony?**

A. Yes.

[12] Direct Testimony of Graham Symmonds pages 11 through 15.

# EXHIBIT A-16

**BEFORE THE ARIZONA CORPORATION COMMISSION**

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
PAUL NEWMAN
Commissioner
SANDRA D. KENNEDY
Commissioner
BOB STUMP
Commissioner

| | | |
|---|---|---|
| IN THE MATTER OF THE APPLICATION OF ARIZONA-AMERICAN WATER COMPANY FOR DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS AGUA FRIA WATER DISTRICT, HAVASU WATER DISTRICT, MOHAVE WATER DISTRICT, PARADISE VALLEY WATER DISTRICT, AND TUBAC WATER DISTRICT | ) | DOCKET NO. W-01303A-08-0227 |
| IN THE MATTER OF THE APPLICATION OF ARIZONA-AMERICAN WATER COMPANY FOR DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES BASED THEREON FOR UTILITY SERVICE BY ITS MOHAVE WASTEWATER DISTRICT | ) | DOCKET NO. SW-01303A-08-0227 |

DIRECT

TESTIMONY

OF

DAVID C. PARCELL

ON BEHALF OF

UTILITIES DIVISION STAFF

ARIZONA CORPORATION COMMISSION

JANUARY 12, 2009

PENGAD 800-631-6989
EXHIBIT
A-16
ADMIN. NOTICE

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## INTRODUCTION

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

A. My name is David C. Parcell. I am President and Senior Economist of Technical Associates, Inc. My business address is Suite 601, 1051 East Cary Street, Richmond, Virginia 23219.

**Q. Please summarize your educational background and professional experience.**

A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with Technical Associates since 1970. I have provided cost of capital testimony in public utility ratemaking proceedings, dating back to 1972. In connection with this, I have previously filed testimony and/or testified in over 400 utility proceedings before about 40 regulatory agencies in the United States and Canada. Attachment 1 provides a more complete description of my education and relevant work experience.

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

A. I have been retained by the Utilities Division Staff to evaluate the cost of capital aspects of the current filing of Arizona-American Water Company ("AAWC" or "Company"). I have performed independent studies and am making recommendations of the current cost of capital for AAWC. In addition, since AAWC is a subsidiary of American Water Works Company, Inc. ("AWW"), I have also evaluated this entity in my analyses.

**Q. Have you prepared an Exhibit in support of your testimony?**

A. Yes, I have prepared one exhibit, made up of twelve Schedules, identified as Schedule 1 through Schedule 14. These Schedules were prepared either by me or under my direction.

The information contained in these schedules is correct to the best of my knowledge and belief.

## SUMMARY OF TESTIMONY AND RECOMMENDATIONS

**Q. What are your recommendations in this proceeding?**

A. My overall cost of capital recommendations for AAWC are:

| | Percent | Cost | Return |
|---|---|---|---|
| Short-Term Debt | 10.98% | 5.367% | 0.59% |
| Long-Term Debt | 47.70% | 5.463% | 2.59% |
| Common Equity | 41.62% | 9.5-10.5% | 3.95-4.37% |
| Total | 100.00% | | 7.13-7.55% |

AAWC's application requests a return on common equity of 11.75 percent and overall rate of return of 8.40 percent. I propose a return on common equity of 10.0 percent and an overall rate of return of 7.34 percent.

**Q. Please summarize your cost analyses and related conclusions for AAWC.**

A. This proceeding is concerned with AAWC's regulated water utility operations in Arizona. My analyses are concerned with the Company's total cost of capital. The first step in performing an analysis of the Company's cost of capital is the development of the appropriate capital structure. AAWC's proposed capital structure is comprised of 46.75 percent common equity and 53.25 percent long-term debt. This capital structure is the projected December 1, 2008, capital structure of the Company. I use a capital structure in my cost of capital analyses that contains short-term debt.

The second step in a cost of capital calculation is a determination of the embedded cost rates of debt. AAWC's application uses a long-term debt cost rate of 5.463 percent, which

reflects the Company's projected cost at December 31, 2008. I have used the same rate for this item as is proposed by the Company. For the cost of short-term debt, I use the rate cited in the Company's filing.

The third step in the cost of capital calculation is the estimation of the cost of common equity. I have employed three recognized methodologies to estimate the cost of equity for AAWC. Each of these methodologies is applied to three groups of proxy water utilities. These three methodologies and my findings are:

| Methodology | Range |
|---|---|
| Discounted Cash Flow | 9.5-10.5% |
| Capital Asset Pricing Model | 10.2-10.5% |
| Comparable Earnings | 9.5-10.5% |

Based upon these findings, I conclude that the cost of common equity for AAWC is within a range of 9.5 percent to 10.5 percent. I recommend the mid-point of my cost of equity range (10.0 %).

Combining these three steps into a weighted cost of capital results in an overall rate of return range of 7.13 percent to 7.55 percent. My recommended 10.0 percent cost of equity results in an overall cost of capital of 7.34 percent.

## ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES

**Q. What are the primary economic and legal principles that establish the standards for determining a fair rate of return for a regulated utility?**

A. Public utility rates are normally established in a manner designed to allow the recovery of their costs, including capital costs. This is frequently referred to as "cost of service" ratemaking. Rates for regulated public utilities traditionally have been primarily

established using the "rate base - rate of return" concept. Under this method, utilities are allowed to recover a level of operating expenses, taxes, and depreciation deemed reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of return on the assets used and useful (*i.e.*, rate base) in providing service to their customers.

The rate base is derived from the asset side of the utility's balance sheet as a dollar amount and the rate of return is developed from the liabilities/owners' equity side of the balance sheet as a percentage. The revenue impact of the cost of capital is thus derived by multiplying the rate base by the rate of return (including income taxes).

The rate of return is developed from the cost of capital, which is estimated by weighting the capital structure components (*i.e.*, debt, preferred stock, and common equity) by their percentages in the capital structure and multiplying these by their cost rates. This is also known as the weighted cost of capital.

Technically, "fair rate of return" is a legal and accounting concept that refers to an *ex post* (after the fact) earned return on an asset base, while the cost of capital is an economic and financial concept which refers to an *ex ante* (before the fact) expected or required return on a liability base. In regulatory proceedings, however, the two terms are often used interchangeably, as I have done in my testimony.

From an economic standpoint, a fair rate of return is normally interpreted to mean that an efficient and economically managed utility will be able to maintain its financial integrity, attract capital, and establish comparable returns for similar risk investments. These concepts are derived from economic and financial theory and are generally implemented using financial models and economic concepts.

Although I am not a lawyer and I do not offer a legal opinion, my testimony is based on my understanding that two United States Supreme Court decisions provide the main standards for a fair rate of return. The first decision is Bluefield Water Works and Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923). In this decision, the Court stated:

> *What annual rate will constitute **just compensation** depends upon many circumstances and must be **determined by** the **exercise of fair and enlightened judgment**, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to **earn a return** on the value of the property which it employs for the convenience of the public equal to that **generally being made** at the same time and in the same general part of the country on **investments in other business undertakings** which are **attended by corresponding risks and uncertainties**; but it has no **constitutional right to profits** such as are realized or anticipated in **highly profitable enterprises or speculative ventures**. The **return** should be reasonably sufficient to assure confidence in the **financial soundness** of the utility, and should be adequate, **under efficient and economical management**, to maintain and **support its credit** and **enable it to raise the money** necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.* **[Emphasis added.]**

It is my understanding that the Bluefield decision established the following standards for a fair rate of return: comparable earnings, financial integrity, and capital attraction. It also noted the changing level of required returns over time as well as an underlying assumption that the utility be operated in an efficient manner.

The second decision is Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1942). In that decision, the Court stated:

> *The rate-making process under the [Natural Gas] Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the **investor** and **consumer interests** . . . . From the investor or company point of view it is*

> *important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the* ***return*** *to the equity* ***owner*** *should be* ***commensurate*** *with* ***returns*** *on* ***investments*** *in* ***other enterprises having corresponding risks****. That return, moreover, should be sufficient to assure confidence in the* ***financial integrity*** *of the enterprise, so as to* ***maintain its credit*** *and to* ***attract capital****.* **[Emphasis added.]**

The three economic and financial parameters in the Bluefield and Hope decisions - comparable earnings, financial integrity, and capital attraction - reflect the economic criteria encompassed in the "opportunity cost" principle of economics. The opportunity cost principle provides that a utility and its investors should be afforded an opportunity (not a guarantee) to earn a return commensurate with returns they could expect to achieve on investments of similar risk. The opportunity cost principle is consistent with the fundamental premise, on which regulation rests, namely, that it is intended to act as a surrogate for competition.

I understand that because Arizona is a "Fair Value" state, Hope and Bluefield do not set forth the legal requirements applicable to determining fair rate of return in Arizona. In Simms v. Round Valley Light & Power Co., 294 P.2d 378 (1956), the Arizona Supreme Court took exception to application of the following principle in Arizona since the Constitution mandates consideration of fair value:

> *"In the Hope case the court, in testing the reasonableness of rates fixed by the Federal Power Commission under the Natural Gas Act, 15 U.S.C.A. Section 717 et seq., after holding that congress had provided no formula by which just and reasonable rates were to be determined, ruled that it was the final result reached and not the method used in reaching the result that was controlling and that it was unimportant to 'determine the various permissible ways in which any rate base on which the return in computed might be arrived at."*

My testimony does not advocate that the Commission ignore the Simms holding in this regard, or the fair value of AAWC's property, which it is required to consider under article 15, section 14 of the Arizona Constitution. Rather, I find the Hope and Bluefield decisions to be helpful in their discussion of comparable earnings, financial integrity and capital attraction.

**Q. How can these parameters be employed to estimate the cost of capital for a utility?**

A. Neither the courts nor economic/financial theory have developed exact and mechanical procedures for precisely determining the cost of capital. This is the case because the cost of capital is an opportunity cost and is prospective-looking, which dictates that it must be estimated.

There are several useful models that can be employed to assist in estimating the cost of equity capital, which is the capital structure item that is the most difficult to determine. These include the Discounted Cash Flow ("DSC"), Capital Asset Pricing Model ("CAPM"), Comparable Earnings ("CE") and Risk Premium ("RP") methods. Each of these methods (or models) differs from the others and each, if properly employed, can be a useful tool in estimating the cost of common equity for a regulated utility.

**Q. Which methods have you employed in your analyses of the cost of common equity in this proceeding?**

A. I have utilized three methodologies to determine AAWC's cost of common equity: the DCF, CAPM, and CE methods. I have not employed a RP model in my analyses although, as I indicate later, my CAPM analysis is a form of the RP methodology. Each of these methodologies will be described in more detail in my testimony that follows.

## GENERAL ECONOMIC CONDITIONS

**Q. Why are economic and financial conditions important in determining the costs of capital?**

A. The costs of capital, for both fixed-cost (debt and preferred stock) components and common equity, are determined in part by current and prospective economic and financial conditions. At any given time, each of the following factors has an influence on the costs of capital: the level of economic activity (*i.e.*, growth rate of the economy), the stage of the business cycle (*i.e.*, recession, expansion, or transition), and the level of inflation, and expected economic conditions. My understanding is that this position is consistent with the Supreme Court Bluefield decision that noted "[a] rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally."

**Q. What indicators of economic and financial activity have you evaluated in your analyses?**

A. I have examined several sets of economic statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over three full business cycles plus the current cycle to date, allowing for an assessment of changes in long-term trends. This period also approximates the beginning and continuation of active rate case activities by public utilities.

A business cycle is commonly defined as a complete period of expansion (recovery and growth) and contraction (recession). A full business cycle is a useful and convenient period over which to measure levels and trends in long-term capital costs because it incorporates the cyclical (*i.e.*, stage of business cycle) influences, and thus, permits a comparison of structural (or long-term) trends.

**Q. Please describe the timeframe of the three prior business cycles and the most recent cycle.**

A. The three prior complete cycles and current cycle cover the following periods:

| Business Cycle | Expansion Cycle | Contraction Period |
|---|---|---|
| 1975-1982 | Mar. 1975-July 1981 | Aug. 1981-Oct. 1982 |
| 1982-1991 | Nov. 1982-July 1990 | Aug. 1990-Mar. 1991 |
| 1991-2001 | Apr. 1991-Mar. 2001 | Apr. 2001-Nov. 2001 |
| Current | Dec. 2001-Nov. 2007 | Dec. 2007-Present |

**Q. Do you have any general observations concerning the recent trends in economic conditions and their impact on capital costs over this broad period?**

A. Yes, I do. As I will describe below, until recently the U.S. economy has enjoyed general prosperity and stability over the period since the early 1980s. This period has been characterized by longer economic expansions, relatively tame contractions, relatively low and declining inflation, and declining interest rates and other capital costs. The current business cycle began in late 2001, following a somewhat modest recession earlier in the year.

Over the past two years, on the other hand, the economy has slowed significantly, initially as a result of the 2007 collapse of the "sub-prime" mortgage market and related liquidity crises in the financial sector of the economy. During 2008, this financial crisis intensified with a more broad-based decline, initially based on an intensive increase in petroleum prices and an increasing decline in the U.S. financial sector culminating with the collapse and/or bailouts of a substantial number of long-standing institutions such as Bear Stearns, Lehman Brothers, Merrill Lynch, Freddie Mac, Fannie Mae and AIG. This crisis has recently been described as the worst financial crisis since the Great Depression. The U.S. government is in the process of implementing unprecedented actions to attempt to correct

or minimize this crisis. As of this time the effects of these potential actions are unclear. There is presently a general acceptance that the economy is already in a recession. Should the economy incur a significant recession, which is increasingly evident, the impacts on cost of capital would likely be characterized by lower utility growth and declining capital costs due to a decline in corporate profits and expected earnings growth. It is also clear that a serious recession would have negative impacts on AAWC's customers, in terms of income levels, unemployment and profits. Clearly, this is no environment in which to increase the profit levels for a regulated monopoly such as AAWC.

**Q. Please describe recent and current economic and financial conditions and their impact on the costs of capital.**

A. Schedule 2 shows several sets of economic data. Pages 1 and 2 contain general macroeconomic statistics while pages 4 through 6 contain financial market statistics. Pages 1 and 2 show that the U.S. economy ended 2007 as the sixth year of an economic expansion although, as indicated previously, the economy apparently entered a recession at the end of the year. This is indicated by the growth in real (*i.e.*, adjusted for inflation) Gross Domestic Product, industrial production, and the unemployment rate. This recent expansion was characterized as slower growth, in comparison to prior expansions. This resulted in lower inflationary pressures and interest rates. Economic indicators in 2008 reflect significantly declining growth in GDP and industrial production and a substantial increase in the unemployment rate, all of which are indicative of a recession.

The rate of inflation is also shown on pages 1 and 2. As is reflected in the Consumer Price Index ("CPI"), for example, inflation rose significantly during the 1975-1982 business cycle and reached double-digit levels in 1979-1980. The rate of inflation declined substantially in 1981 and remained at or below 6.1 percent during the 1983-1991 business

cycle. Since 1991, the CPI has been 4.1 percent or lower. The 4.1 percent rate of inflation in 2007 was slightly above the levels since 2000, but is well below the levels of the past thirty years. Inflation increased in the first half of 2008, largely as a result of a significant increase in petroleum costs. However, consistent with an economic contraction and lower equity returns, both petroleum prices and inflation in general have dramatically declined in recent months.

**Q. What have been the trends in interest rates?**

A. Pages 3 and 4 show several series of interest rates. Rates rose sharply to record levels in 1975-1981 when the inflation rate was high and generally rising. Interest rates declined substantially in conjunction with inflation rates throughout the remainder of the 1980s and throughout the 1990s. Interest rates declined even further from 2000-2005 and generally recorded their lowest levels since the 1960s.

During the past several years, long-term interest rates have remained low by historic standards. During the 2001 recession and early in the succeeding expansion, the Federal Reserve lowered interest rates (*i.e.*, Federal Funds rate) eleven times in 2001 and twice in 2003 in an effort to stimulate the economy. Following this, the Federal Reserve increased short-term interest rates on seventeen occasions between 2004 and 2006, although each time by only 0.25 percent, in an attempt to ensure that any perceived inflationary expectations would not stifle continued economic growth. Nevertheless, the Federal Reserve actions did not result in a pronounced increase in long-term rates. Most recently, however, the Federal Reserve has lowered the Federal Funds rate (*i.e.*, short-term rate) on several occasions and it presently is 0.25 percent, an all-time low. Over the past few years, long-term interest rates have remained relatively stable, by historic standards. The first several months of 2008 have experienced declines in short-term rates and in long-

term U.S. Treasury Securities, and an increase in corporate bond yields. This apparent contradiction reflects a "flight to quality," as cautious (or concerned) investors are avoiding corporate securities (stocks and debt) and are placing their funds in more secure government securities. This has the effect of driving yields on government securities to extremely low levels and the yields on corporate debt to high levels. Such a "flight to quality" will likely remain until the economy and investor confidence returns.

**Q. What have been the trends in common share prices?**

A. Pages 5 and 6 show several series of common stock prices and ratios. These indicate that share prices were essentially stagnant during the high inflation/interest rate environment of the late 1970s and early 1980s. On the other hand, the 1983-1991 business cycle and the most recent cycles witnessed a significant upward trend in stock prices. Since the beginning of the current financial crisis, on the other hand, stock prices have declined precipitously and have been very volatile. Stock prices in 2008 are down significantly from 2007 levels, reflecting the financial/economic crises.

**Q. What conclusions do you draw from this discussion of economic and financial conditions?**

A. It is apparent that capital costs are volatile and inconsistent with relationships in comparison to the levels that have prevailed over the past three decades. In addition, the current weakness in the economy has resulted in a decline in capital costs, as measured by the expected returns of competitive firms. Therefore, it can reasonably be expected that cost of equity models currently indicate returns that are lower than returns experienced in prior years. As noted elsewhere in my testimony, this is a factor that should be considered in establishing the current cost of equity for AAWC.

**AAWC'S OPERATIONS AND RISKS**

**Q. Please summarize AAWC and its operations.**

A. AAWC is a public utility that delivers water and wastewater through its services distribution system in Arizona. AAWC provides service to about 100,000 water customers and 50,000 sewer customers in about ten districts in the state. AAWC is a subsidiary of AWW.

**Q. Please describe AWW.**

A. AWW is a holding company whose major subsidiaries provide water and wastewater services in nineteen states. AWW is the largest investor-owned water and wastewater company in the United States.

AWW has undertaken several ownership changes over the past several years. Until 2003, AWW was a publicly-traded company headquartered in Voorhees, N.J. In 2003, AWW's stock was acquired by RWE Aktiengesellschaft (a German company) and became a wholly-owned subsidiary of RWE. In 2005, RWE announced its intention to exit its water activities in the U.S. and elsewhere and, in connection with this, sold about 63.2 million shares in an initial public offering ("IPO") of AWW's shares. This sale amounted to approximately 40 percent of AWW's shares now being owned by the investing public and the remaining 60 still owned by RWE. RWE intends to divest its remaining ownership of AWW through the consummation of additional public offerings in the future as dictated by market conditions.

As noted above, AWW owns a number of water and wastewater subsidiaries that operate in thirty two states throughout the U.S. One of these is AAWC. AWW also owns non-

regulated subsidiaries. AWW raises debt capital for its subsidiaries through its financing subsidiary American Water Capital Corp.

## CAPITAL STRUCTURE AND COST OF DEBT

**Q. What is the importance of determining a proper capital structure in a regulatory framework?**

A. A utility's capital structure is important because the concept of rate base – rate of return regulation requires that a utility's capital structure be determined and utilized in estimating the total cost of capital. Within this framework, it is proper to ascertain whether the utility's capital structure is appropriate relative to its level of business risk and relative to other utilities.

As discussed in section III of my testimony, the purpose of determining the proper capital structure for a utility is to help ascertain its capital costs. The rate base – rate of return concept recognizes the assets employed in providing utility services and provides for a return on these assets by identifying the liabilities and common equity (and their cost rates) used to finance the assets. In this process, the rate base is derived from the asset side of the balance sheet and the cost of capital is derived from the liabilities/owners' equity side of the balance sheet. The inherent assumption in this procedure is that the dollar values of the capital structure and the rate base are approximately equal and the former is utilized to finance the latter.

The common equity ratio (*i.e.*, the percentage of common equity in the capital structure) is the capital structure item which normally receives the most attention. This is the case because common equity: (1) usually commands the highest cost rate; (2) generates

associated income tax liabilities; and, (3) causes the most controversy since its cost cannot be precisely determined.

**Q. How have you evaluated the capital structure of AAWC?**

A. All of AAWC's capital is provided by AWW. The reported capital of AAWC is actually "allocated" to the Company from AWW. I have therefore examined the historic (2006-2008) capital structure ratios of AWW. These are shown on Schedule 3. I have summarized below the common equity ratios for AWW:

| | Including S-T Debt | Excluding S-T Debt |
|---|---|---|
| 2006 | 39.4% | 43.9% |
| 2007 | 47.5% | 49.3% |
| Sept. 30, 2008 | 44.8% | 47.0% |

**Q. How do these capital structures compare to those of investor-owned water utilities?**

A. Schedule 4 shows the common equity ratios (including short-term debt in capitalization) for the three groups of water utilities utilized in my cost of equity analyses. These are:

| Year | Value Line Group | AUS Utility Group | Villadsen Group |
|---|---|---|---|
| 2003 | 46% | 46% | 48% |
| 2004 | 52% | 50% | 51% |
| 2005 | 49% | 48% | 49% |
| 2006 | 50% | 50% | 51% |
| 2007 | 51% | 50% | 50% |

These common equity ratios are slightly higher than those of AWW.

**Q. What capital structure ratios has AAWC requested in this proceeding?**

A. The Company requests use of the following capital structure:

| | |
|---|---|
| Long-Term Debt | 53.25% |
| Common Equity | 46.75% |

According to schedule D-1 of AAWC's filing, this is the projected capital structure of the Company at December 31, 2008.

**Q. What capital structure do you propose to use in this proceeding?**

A. I use the capital structure ratios as proposed by AAWC, with one exception. I have included short-term debt, which is consistent with this Commission's practice. I have used the amounts of capital for AAWC as contained in Schedule D-2 of the Company's application.

**Q. What are the cost rates of debt in the company's application?**

A. The Company's filing cites a cost of long-term debt of 5.463 percent. This is represented to be the Company's projected cost at December 31, 2008. I also use this cost of long-term debt in my cost of capital analyses. For the cost of short-term debt, I use the 5.367 percent rate shown on Schedule D-2.

**Q. Can the cost of common equity be determined with the same degree of precision as the costs of debt?**

A. No. The cost rates of debt are largely determined by interest payments, issue prices, and related expenses. The cost of common equity, on the other hand, cannot be precisely quantified, primarily because this cost is an opportunity cost. There are, however, several

models which can be employed to estimate the cost of common equity. Three of the primary methods – DCF, CAPM, and CE – are developed in the following sections of my testimony.

## SELECTION OF PROXY GROUPS

**Q. How have you estimated the cost of common equity for AAWC?**

A. AAWC is not a publicly-traded company. AWW, AAWC's parent company, is a publicly-traded company. Consequently, it is possible to directly apply cost of equity models to AWW. However, it is generally desirable to analyze groups of comparison or "proxy" companies as a substitute for AAWC to determine its cost of common equity.

I have examined three such groups for comparison to AAWC. I have first selected the group of four water utilities that are contained in the Standard Edition of Value Line. Second, I have used the group of eight water utilities covered in AUS utility Reports. Third, I have conducted studies of the cost of equity for the proxy group of water utilities selected by AAWC's witness Bente Villadsen.

## DISCOUNT CASH FLOW ANALYSIS

**Q. What is the theory and methodological basis of the DCF model?**

A. The DCF model is one of the oldest, as well as the most commonly-used, models for estimating the cost of common equity for public utilities. The DCF model is based on the "dividend discount model" of financial theory, which maintains that the value (price) of any security or commodity is the discounted present value of all future cash flows.

The most common variant of the DCF model assumes that dividends are expected to grow at a constant rate. This variant of the dividend discount model is known as the constant

growth or Gordon DCF model. In this framework cost of capital is derived by the following formula:

$$K = \frac{D}{P} + g$$

where: K = discount rate (cost of capital)

P = current price

D = current dividend rate

g = constant rate of expected growth

This formula essentially recognizes that the return expected or required by investors is comprised of two factors: the dividend yield (current income) and expected growth in dividends (future income).

**Q. Please explain how you have employed the DCF model.**

A. I have utilized the constant growth DCF model. In doing so, I have combined the current dividend yield for each group of proxy utility stocks described in the previous section with several indicators of expected dividend growth.

**Q. How did you derive the dividend yield component of the DCF equation?**

A. There are several methods that can be used for calculating the dividend yield component. These methods generally differ in the manner in which the dividend rate is employed; *i.e.*, current versus future dividends or annual versus quarterly compounding of dividends. I believe the most appropriate dividend yield component is the version listed below:

$$Yield = \frac{D_0(1+0.5g)}{P_0}$$

This dividend yield component recognizes the timing of dividend payments and dividend increases.

The $P_0$ in my yield calculation is the average (of high and low) stock price for each proxy company for the most recent three month period (September-November, 2008). The $D_0$ is the current annualized dividend rate for each proxy company.

**Q. How have you estimated the dividend growth component of the DCF equation?**

A. The dividend growth rate component of the DCF model is usually the most crucial and controversial element involved in using this methodology. The objective of estimating the dividend growth component is to reflect the growth expected by investors that is embodied in the price (and yield) of a company's stock. As such, it is important to recognize that individual investors have different expectations and consider alternative indicators in deriving their expectations. This is evidenced by the fact that every investment decision resulting in the purchase of a particular stock is matched by another investment decision to sell that stock. Obviously, since two investors reach different decisions at the same market price, their expectations differ.

A wide array of indicators exists for estimating the growth expectations of investors. As a result, it is evident that no single indicator of growth is always used by all investors. It therefore is necessary to consider alternative indicators of dividend growth in deriving the growth component of the DCF model.

I have considered five indicators of growth in my DCF analyses. These are:

1. 2003-2007 (5-year average) earnings retention, or fundamental growth (per Value Line);
2. 5-year average of historic growth in earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS") (per Value Line);
3. 2008, 2009, and 2011-2013 projections of earnings retention growth (per Value Line);
4. 2005-2007 to 2011-2013 projections of EPS, DPS, and BVPS (per Value Line); and
5. 5-year projections of EPS growth as reported in First Call (per Yahoo! Finance).

I believe this combination of growth indicators is a representative and appropriate set with which to begin the process of estimating investor expectations of dividend growth for the groups of proxy companies. I also believe that these growth indicators reflect the types of information that investors consider in making their investment decisions. As I indicated previously, investors have an array of information available to them, all of which should be expected to have some impact on their decision-making process.

**Q. Please describe your initial DCF calculations.**

A. Schedule 5 presents my DCF analysis. Page 1 shows the calculation of the "raw" (i.e., prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3 show the growth rate for the groups of proxy companies. Page 4 shows the "raw" DCF calculations, which are presented on several bases: mean, median, and high values. These results can be summarized as follows:

| | Mean | Median | Mean High[1] | Median High[2] |
|---|---|---|---|---|
| Value Line Group | 7.8% | 7.6% | 9.2% | 9.2% |
| AUS Group | 8.8% | 9.1% | 11.4% | 11.5% |
| Villadsen Group | 8.8% | 9.2% | 11.6% | 11.5% |

I note that the individual DCF calculations shown on Schedule 5 should not be interpreted to reflect the expected cost of capital for the proxy group; rather, the individual values shown should be interpreted as alternative information considered by investors. The individual DCF calculations also demonstrate how the focus on a single growth rate, such as EPS projections, can produce a DCF conclusion that is not reflective of a broader perspective of available information.

The results in Schedule 5 indicate average (mean and median) DCF cost rates of 7.8 percent to 9.2 percent. The "high" DCF rates (i.e., using the highest growth rates only) are about 9.2 percent to 11.6 percent on an average basis and 9.2 percent to 11.5 percent on a median basis.

**Q. What do you conclude from your DCF analyses?**

A. This analysis reflects a broad DCF range of about 7.8 percent to about 11.6 percent for the proxy groups. This is approximated by the average/mean values for the proxy groups examined in the previous analysis. I give less weight to the extreme upper and lower ends of the groups which are impacted by outlier results. I believe that 9.0 percent to 10.0 percent reflects the proper DCF cost for AAWC.

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1 Using only the highest growth rate.

2 Using only the highest growth rate.

**CAPITAL ASSET PRICING MODEL ANALYSIS**

**Q. Please describe the theory and methodological basis of the CAPM.**

A. The CAPM is a version of the RP method. The CAPM describes and measures the relationship between a security's investment risk and its market rate of return. The CAPM was developed in the 1960s and 1970s as an extension of modern portfolio theory ("MPT"), which studies the relationships among risk, diversification, and expected returns.

**Q. How is the CAPM derived?**

A. The general form of the CAPM is:

$$K = R_f + \beta(R_m - R_f)$$

where: K = cost of equity

$R_f$ = risk free rate

Rm = return on market

β = beta

$R_m$-$R_f$ = market risk premium

As noted previously, the CAPM is a variant of the RP method. I believe the CAPM is generally superior to the simple RP method because the CAPM specifically recognizes the risk of a particular company or industry (*i.e.*, beta), whereas the simple RP method assumes the same risk premium for all companies exhibiting similar bond ratings.

**Q. What groups of companies have you utilized to perform your CAPM analyses?**

A. I have performed CAPM analyses for the same groups of proxy utilities evaluated in my DCF analyses.

**Q. Please explain the risk-free rate as used in your CAPM and indicate what rate you employed.**

A. The first term of the CAPM is the risk-free rate ($R_f$). The risk-free rate reflects the level of return that can be achieved without accepting any risk.

In CAPM applications, the risk-free rate is generally recognized by use of U.S. Treasury securities. Two general types of U.S. Treasury securities are often utilized as the $R_f$ component - short-term U.S. Treasury bills and long-term U.S. Treasury bonds.

I have performed CAPM calculations using the three-month average yield (September-November, 2008) for 20-year U.S. Treasury bonds. Over this three-month period, these bonds had an average yield of 4.35 percent.

**Q. What is beta and what betas did you employ in your CAPM?**

A. Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation to the overall market. Betas of less than 1.0 are considered less risky than the market, whereas betas greater than 1.0 are more risky. Utility stocks traditionally have had betas below 1.0. I utilized the most recent Value Line betas for each company in the groups of proxy utilities.

**Q. How did you estimate the market risk premium component in your CAPM analysis?**

A. The market risk premium component ($R_m$-$R_f$) represents the investor-expected premium of common stocks over the risk-free rate, or government bonds. For the purpose of estimating the market risk premium, I considered alternative measures of returns of the Standard & Poor's ("S&P") 500 (a broad-based group of large U.S. companies) and 20-year U.S. Treasury bonds.

First, I have compared the actual annual returns on equity of the S&P 500 with the actual annual yields of U.S. Treasury bonds. Schedule 6 shows the return on equity for the S&P 500 group for the period 1978-2007 (all available years reported by S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds, as well as the annual differentials (*i.e.*, risk premiums) between the S&P 500 and U.S. Treasury 20-year bonds. Based upon these returns, I conclude that this version of the risk premium is about 6.46 percent.

I have also considered the total returns (i.e., dividends/interest plus capital gains/losses) for the S&P 500 group as well as for the long-term government bonds, as tabulated by Morningstar (formerly Ibbotson Associates), using both arithmetic and geometric means. I have considered the total returns for the entire 1926-2007 period, which are as follows:

| | S&P 500 | L-T Gov't Bonds | Risk Premium |
|---|---|---|---|
| Arithmetic | 12.3% | 5.8% | 6.5% |
| Geometric | 10.4% | 5.5% | 4.9% |

I conclude from this that the expected risk premium is about 5.9 percent (i.e., average of all three risk premiums). I believe that a combination of arithmetic and geometric means

is appropriate since investors have access to both types of means and, presumably, both types are reflected in investment decisions and thus stock prices and cost of capital.

Schedule 7 shows my CAPM calculations using the risk premium. The results are:

| | Mean | Median |
|---|---|---|
| Value Line Group | 10.4% | 10.4% |
| AUS Group | 9.8% | 10.1% |
| Villadsen Group | 9.8% | 10.1% |

**Q. What is your conclusion concerning the CAPM cost of equity?**

A. The CAPM results collectively indicate a cost of 9.8 percent to 10.4 percent for the groups of comparison utilities. I conclude that the CAPM cost of equity for AAWC is 9.8 percent to 10.4 percent.

**COMPARABLE EARNINGS ANALYSIS**

**Q. Please describe the basis of the CE methodology.**

A. The CE method is derived from the "corresponding risk" standard of the Bluefield and Hope cases. This method is thus based upon the economic concept of opportunity cost. As previously noted, the cost of capital is an opportunity cost: the prospective return available to investors from alternative investments of similar risk.

The CE method is designed to measure the returns expected to be earned on the original cost book value of similar risk enterprises. Thus, this method provides a direct measure of the fair return, because the CE method translates into practice the competitive principle upon which regulation is based.

The CE method normally examines the experienced and/or projected returns on book common equity. The logic for examining returns on book equity follows from the use of original cost rate base regulation for public utilities, which uses a utility's book common equity to determine the cost of capital. This cost of capital is, in turn, used as the fair rate of return which is then applied (multiplied) to the book value of rate base to establish the dollar level of capital costs to be recovered by the utility. This technique is thus consistent with the rate base methodology used to set utility rates.

**Q. How have you employed the CE methodology in your analysis of AAWC's common equity cost?**

A. I conducted the CE methodology by examining realized returns on equity for several groups of companies and evaluating the investor acceptance of these returns by reference to the resulting market-to-book ratios. In this manner it is possible to assess the degree to which a given level of return equates to the cost of capital. It is generally recognized for utilities that market-to-book ratios of greater than one (*i.e.*, 100%) reflect a situation where a company is able to attract new equity capital without dilution (*i.e.*, above book value). As a result, one objective of a fair cost of equity is the maintenance of stock prices above book value.

I would further note that the CE analysis, as I have employed it, is based upon market data (through the use of market-to-book ratios) and is thus essentially a market test. As a result, my analysis is not subject to the criticisms occasionally made by some who maintain that past earned returns do not represent the cost of capital. In addition, my analysis uses prospective returns and thus is not confined to historical data.

**Q. What time periods have you examined in your CE analysis?**

A. My CE analysis considers the experienced equity returns of the proxy groups of utilities for the period 1992-2007 (*i.e.,* the last sixteen years). The CE analysis requires that I examine a relatively long period of time in order to determine trends in earnings over at least a full business cycle. Further, in estimating a fair level of return for a future period, it is important to examine earnings over a diverse period of time in order to avoid any undue influence from unusual or abnormal conditions that may occur in a single year or shorter period. Therefore, in forming my judgment of the current cost of equity I have focused on two periods: 2003-2007 (the last five years - the average length of a business cycle) and 1992-2001 (the most recent complete business cycle).

**Q. Please describe your CE analysis.**

A. Schedules 8 and 9 contain summaries of experienced returns on equity for several groups of companies, while Schedule 10 presents a risk comparison of utilities versus unregulated firms.

Schedule 7 shows the earned returns on average common equity and market-to-book ratios for the groups of proxy utilities. These can be summarized as follows:

| | Value Line Group | AUS Group | Villadsen Group |
|---|---|---|---|
| Historic ROE | | | |
| Mean | 8.0-10.5% | 9.2-11.0% | 9.2-11.0% |
| Median | 8.6-11.0% | 9.5-11.1% | 9.8-11.3% |
| Historic M/B | | | |
| Mean | 177-238% | 178-236% | 178-241% |
| Median | 173-220% | 178-225% | 175-229% |
| Prospective ROE | | | |
| Mean | 8.4-11.4% | 8.4-11.4% | 8.4-11.4% |
| Median | 9.0-11.5% | 9.0-11.5% | 9.0-11.5% |

These results indicate that historic returns of 8.0-11.1 percent have been adequate to produce market-to-book ratios of 171-241 percent for the groups of proxy utilities. Furthermore, projected returns on equity for 2008, 2009, and 2011-2013 are within a range of 8.4 percent to 11.5 percent for the utility groups. These relate to 2007 market-to-book ratios of 200 percent or higher.

**Q. Have you also reviewed earnings of unregulated firms?**

A. Yes. As an alternative, I also examined a group of largely unregulated firms. I have examined the S&P 500 Composite group, since this is a well-recognized group of firms that is widely utilized in the investment community and is indicative of the competitive sector of the economy. Schedule 8 presents the earned returns on equity and market-to-book ratios for the S&P 500 group over the past sixteen years. As this Schedule indicates, over the two periods this group's average earned returns ranged from 14.7 percent to 15.0 percent with market-to-book ratios ranging between 288 percent and 341 percent.

**Q. How can the above information be used to estimate the cost of equity for AAWC?**

A. The recent earnings of the proxy utility and S&P 500 groups can be utilized as an indication of the level of return realized and expected in the regulated and competitive sectors of the economy. In order to apply these returns to the cost of equity for proxy utilities, however, it is necessary to compare the risk levels of the utility industry with those of the competitive sector. I have done this in Schedule 10, which compares several risk indicators for the S&P 500 group and the utility groups. The information in this schedule indicates that the S&P 500 group is more risky than the utility proxy groups.

**Q. What return on equity is indicated by the CE analysis?**

A. Based on the recent earnings and market-to-book ratios, I believe the CE analysis indicates that the cost of equity for the proxy utilities is no more than 9.5 percent to 10.5 percent. Recent returns of 8.0 percent to 11.1 percent have resulted in market-to-book ratios of 170 and greater. Prospective returns of 8.8 percent to 11.5 percent result in anticipated market-to-book ratios of over 200 percent. As a result, it is apparent that returns below this level would result in market-to-book ratios of well above 100 percent. An earned return of 9.5 percent to 10.5 percent should thus result in a market-to-book ratio of over 100 percent. As I indicated earlier, the fact that market-to-book ratios substantially exceed 100 percent indicates that historic and prospective returns of over 10 percent reflect earnings levels that exceed the cost of equity for those regulated companies.

Please also note that my CE analysis is not based on a mathematic formula approach, as are the DCF and CAPM methodologies. Rather, it is based on recent trends and current conditions in equity markets. Further, it is based on the direct relationship between returns on common stock and market-to-book ratios of common stock. In utility rate setting, a fair rate of return is based on the utility's assets (*i.e.*, rate base) and the book value of the utility's capital structure. As stated earlier, maintenance of a financially stable utility's market-to-book ratio at 100 percent, or a bit higher, is fully adequate to maintain the utility's financial stability. On the other hand, a market price of a utility's common stock that is 170 percent or more above the stock's book value is indicative of earnings that exceed the utility's reasonable cost of capital. Thus, actual or projected earnings do not directly translate into a utility's reasonable cost of equity. Rather, they must be viewed in relation to the market-to-book ratios of the utility's common stock.

My 9.5 percent to 10.5 percent CE recommendation is not designed to result in market-to-book ratios as low as 1.0 for AAWC. Rather, it is based on current market conditions and the proposition that ratepayers should not be required to pay rates based on earnings levels that result in excessive market-to-book ratios.

**RETURN ON EQUITY RECOMMENDATIONS**

**Q. Please summarize the results of your three cost of equity analyses.**

A. My three methodologies produce the following:

| | |
|---|---|
| Discounted Cash Flow | 9.0-10.0% |
| Capital Asset Pricing Model | 9.8-10.4% |
| Comparable Earnings | 9.5-10.5% |

**Q. What is your cost of equity recommendation for AAWC?**

A. I recommend a cost of equity of 9.5 percent to 10.5 percent for AAWC. This reflects each of my three cost of equity model results. Within this range, I recommend the 10.0 percent mid-point level.

**Q. Please explain how the recent and current economic and financial crisis impacts the cost of equity for AAWC.**

A. It is well chronicled that, over the past year and especially over the past few months, the United States and global financial markets have been in turmoil. The impacts of this have been far-reaching and extreme, with global credit markets virtually coming to a standstill. This crisis and its impact, however, do not imply that the cost of equity for water utilities such as AAWC have increased. I say this for the following reasons.

First, it must be emphasized that depressed economic conditions and the financial crisis affects virtually all sectors of the economy – households, small businesses, larger

commercial and industrials – and, in most cases, the impact is greater than is the case for AAWC. AAWC is a regulated utility that sells a product that has no real substitutes and is a product that consumers can do little to control the amount they use. As such, AAWC and utilities are partially, if not largely, insulated from the impacts of depressed economic conditions.

Second, if a recession is a significant one, the major impact will be to depress the profits of most enterprises. As a result, it is to be expected that capital costs will decrease if a significant recession occurs. There is no justification for increasing the profit level of a regulated utility such as AAWC at the same time that other enterprises are experiencing lower profits.

Third, even if AAWC were to incur higher costs of debt and/or other capital costs, these costs can be passed along to ratepayers at the next rate proceeding. Unregulated firms cannot do this.

Fourth, the United States and global governments have taken, and continue to take, extraordinary measures to avoid a further worsening of the current market turmoil. Most of these measures are designed to put liquidity into the credit markets and make credit more accessible again and, in the process, restore more confidence to the financial markets. All of these measures are clearly designed to lower the cost of capital. In this environment, it would be counter-productive to make any claim that AAWC should have a higher return at this time due to the above-cited market turmoil.

## TOTAL COST OF CAPITAL

**Q. What is the total cost of capital for AAWC?**

A. Schedule 1 reflects the total cost of capital for the Company using AAWC's capital structure and costs of debt along with the range of common equity costs my analyses support. The resulting total cost of capital is a range from 7.13 percent to 7.55 percent. I recommend that a 7.34 percent total cost of capital be established for AAWC.

**Q. Does your cost of capital recommendation provide the Company with a sufficient level of earnings to maintain its financial integrity?**

A. Yes, it does. Schedule 11 shows the pre-tax coverage that would result if AAWC earned my cost of capital recommendation. As the results indicate, my recommended range would produce a coverage level within the benchmark range for a BBB[3] rated utility. In addition, the debt ratio (which reflects the Company's proposed capital structure) is within the benchmark for a BBB rated utility.

**Q. Are you proposing a fair value rate of return in this proceeding?**

A. No, I am not. In several recent testimonies I have filed before this Commission, I developed a fair value rate of return ("FVROR") that was to be used in conjunction with a fair value rate base ("FVRB"). In the present proceeding, AAWC is not requesting a FVRB that differs from its original cost rate base; thus there is no reason to develop a FVROR.

## COMMENTS ON COMPANY TESTIMONY

**Q. Have you reviewed the testimony of AAWC witness Bente Villadsen?**

A. Yes, I have. Dr. Villadsen is the Company's cost of equity witness.

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[3] A rating indicating medium grade investment quality.

**Q. Please summarize your understanding of Dr. Villadsen's methodologies and conclusions.**

A. Dr. Villadsen's cost of equity analyses begins with the application of two methodologies (DCF and Risk-Positioning [CAPM]) which are performed for two groups of proxy utilities (a group of eight water utilities and a group of ten natural gas local distribution companies ["LDC"s]). Her ultimate recommendation, however, relies primarily on the risk-positioning results for the LDC sample.[4]

Next, she used her cost of equity estimates for each proxy company, along with the respective market costs of debt and preferred stock, to calculate each firm's overall cost of capital ("WTWACC") using the company market value capital structure. Then, she calculates the samples' average ATWACC and the cost of equity for a capital structure with 46.9 percent common equity (i.e., common equity ratio of AAWC).

Her conclusion is a cost of equity range of 11.5 percent to 12.5 percent. The request of AAWC of 11.75 percent is within this range and at the mid-point.[5]

**Q. Do you agree with parts of Dr. Villadsen's analyses?**

A. Yes, I do. The first step in her cost of equity analyses, as noted above, is the application of DCF and CAPM (risk-positioning) methods to the two groups of proxy utilities. I have prepared Schedule 12 to summarize the results of her DCF and CAPM analyses to the water utility and LDC samples. These DCF and CAPM results all generally fall within a range of 9 percent to 10 percent, which are consistent with my cost of equity results.

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4 Page 2, lines 15-25.

5 Page 3, lines 23-28.

**Q. Do you agree with the second step of Dr. Villadsen's cost of equity analyses?**

A. No, I do not. I note that her development of WTWACC is an unnecessary step in the cost of capital development for a utility and is clearly unconventional. I further note that use of a market value capital structure is inappropriate and inconsistent with several decades of public utility regulation.

**Q. Why is it improper to employ a market value capital structure, rather than a book value capital structure, in developing the cost of capital for a utility?**

A. Virtually every regulatory commission in the U.S. uses the book value of utility capital structures to calculate the total cost of capital for ratemaking purposes. This is also the case for this Commission. In addition, AAWC proposes to use its book value capital structure to develop its total cost of capital.

It is inconsistent to use market value capital structures to develop a cost of equity that is to be applied to a book value capital structure. It also improperly inflates the required cost of equity for regulated utilities.

**Q. Does Dr. Villadsen's testimony provide any indications that her methodologies produce excessive results?**

A. Yes. Page 46 of her testimony indicates that recent (2002-2008) cost of equity awards of this Commission have averaged 9.2 percent, with the vast majority being below 10.0 percent. This contrasts sharply with her 11.75 percent recommendation in this proceeding.

**Q. Does this conclude your Direct Testimony?**

A. Yes, it does.

# BACKGROUND AND EXPERIENCE PROFILE
# DAVID C. PARCELL, MBA, CRRA
# PRESIDENT/SENIOR ECONOMIST

## EDUCATION

| | |
|---|---|
| 1985 | M.B.A., Virginia Commonwealth University |
| 1970 | M.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech) |
| 1969 | B.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech) |

## POSITIONS

| | |
|---|---|
| 2007-Present | President, Technical Associates, Inc. |
| 1995-2007 | Executive Vice President and Senior Economist, Technical Associates, Inc. |
| 1993-1995 | Vice President and Senior Economist, C. W. Amos of Virginia |
| 1972-1993 | Vice President and Senior Economist, Technical Associates, Inc. |
| 1969-1972 | Research Economist, Technical Associates, Inc. |
| 1968-1969 | Research Associate, Department of Economics, Virginia Polytechnic Institute and State University |

## ACADEMIC HONORS

Omicron Delta Epsilon - Honor Society in Economics
Beta Gamma Sigma - National Scholastic Honor Society of Business Administration
Alpha Iota Delta - National Decision Sciences Honorary Society
Phi Kappa Phi - Scholastic Honor Society

## PROFESSIONAL DESIGNATIONS

Certified Rate of Return Analyst - Founding Member
Member of Association for Investment Management and Research (AIMR)

## RELEVANT EXPERIENCE

Financial Economics -- Advised and assisted many Virginia banks and savings and loan associations on organizational and regulatory matters. Testified approximately 25 times before the Virginia State Corporation Commission and the Regional Administrator of National Banks on matters related to branching and organization for banks, savings and loan associations, and consumer finance companies. Advised financial institutions on interest rate structure and loan maturity. Testified before Virginia State Corporation Commission on maximum rates for consumer finance companies.

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Conducted studies with respect to cost of service and indexing for determining utility rates, the development of annual review procedures for regulatory control of utilities, fuel and power plant cost recovery adjustment clauses, power supply agreements among affiliates, utility franchise fees, and use of short-term debt in capital structure.

Presented expert testimony before federal regulatory agencies Federal Energy Regulatory Commission, Federal Power Commission, and National Energy Board (Canada), state regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, West Virginia, Washington, Wisconsin, and Yukon Territory (Canada).

Published articles in law reviews and other periodicals on the theory and purpose of regulation and other regulatory subjects.

Clients served include state regulatory agencies in Alaska, Arizona, Delaware, Missouri, North Carolina, Ontario (Canada), and Virginia; consumer advocates and attorneys general in Alabama, Arizona, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maryland, Nevada, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, and West Virginia; federal agencies including Defense Communications Agency, the Department of Energy, Department of the Navy, and General Services Administration; and various organizations such as Bath Iron Works, Illinois Citizens' Utility Board, Illinois Governor's Office of Consumer Services, Illinois Small Business Utility Advocate, Wisconsin's Environmental Decade, Wisconsin's Citizens Utility Board, and Old Dominion Electric Cooperative.

Insurance Economics -- Conducted analyses of the relationship between the investment income earned by insurance companies on their portfolios and the premiums charged for insurance. Analyzed impact of diversification on financial strength of Blue Cross/Blue Shield Plans in Virginia.

Conducted studies of profitability and cost of capital for property/casualty insurance industry. Evaluated risk of and required return on surplus for various lines of insurance business.

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commercial bank resulting from publication of adverse information concerning solvency. Testimony has been presented on behalf of private individuals and business firms.

**MEMBERSHIPS**

American Economic Association
Virginia Association of Economists
Richmond Society of Financial Analysts
Financial Analysts Federation
Society of Utility and Regulatory Financial Analysts

| | |
|---|---|
| Board of Directors | 1992-2000 |
| Secretary/Treasurer | 1994-1998 |
| President | 1998-2000 |

**RESEARCH ACTIVITY**

**Books and Major Research Reports**

"Stock Price As An Indicator of Performance," Master of Arts Thesis, Virginia Tech, 1970

"Revision of the Property and Casualty Insurance Ratemaking Process Under Prior Approval in the Commonwealth of Virginia," prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Charles Schotta and Michael J. Ileo, 1971

"An analysis of the Virginia Consumer Finance Industry to Determine the Need for Restructuring the Rate and Size Ceilings on Small Loans in Virginia and the Process by which They are Governed," prepared for the Virginia Consumer Finance Association, with Michael J. Ileo, 1973

State Banks and the State Corporation Commission: A Historical Review, Technical Associates, Inc., 1974

"A Study of the Implications of the Sale of Wine by the Virginia Department of Alcoholic Beverage Control", prepared for the Virginia Wine Wholesalers Association, Virginia Retail Merchants Association, Virginia Food Dealers Association, Virginia Association of Chain Drugstores, Southland Corporation, and the Wine Institute, 1983.

"Performance and Diversification of the Blue Cross/Blue Shield Plans in Virginia: An Operational Review", prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Michael J. Ileo and Alexander F. Skirpan, 1988.

The Cost of Capital - A Practitioners' Guide, Society of Utility and Regulatory Financial

Analysts, 1997 (previous editions in 1991, 1992, 1993, 1994, and 1995).

**Papers Presented and Articles Published**

"The Differential Effect of Bank Structure on the Transmission of Open Market Operations," Western Economic Association Meeting, with Charles Schotta, 1971

"The Economic Objectives of Regulation: The Trend in Virginia," (with Michael J. Ileo), William and Mary Law Review, Vol. 14, No. 2, 1973

"Evolution of the Virginia Banking Structure, 1962-1974: The Effects of the Buck-Holland Bill", (with Michael J. Ileo), William and Mary Law Review, Vol. 16, No. 3, 1975

"Banking Structure and Statewide Branching: The Potential for Virginia", William and Mary Law Review, Vol. 18, No. 1, 1976

"Bank Expansion and Electronic Banking: Virginia Banking Structure Changes Past, Present, and Future," William and Mary Business Review," Vol. 1, No. 2, 1976

"Electronic Banking - Wave of the Future?" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 1, 1976

"The Pricing of Electricity" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 2, 1976

"The Public Interest - Bank and Savings and Loan Expansion in Virginia" (with Richard D. Rogers), University of Richmond Law Review, Vol. 11, No. 3, 1977

"When Is It In the 'Public Interest' to Authorize a New Bank?", University of Richmond Law Review, Vol. 13, No. 3, 1979

"Banking Deregulation and Its Implications on the Virginia Banking Structure," William and Mary Business Review, Vol. 5, No. 1, 1983

"The Impact of Reciprocal Interstate Banking Statutes on The Performance of Virginia Bank Stocks", with William B. Harrison, Virginia Social Science Journal, Vol. 23, 1988

"The Financial Performance of New Banks in Virginia", Virginia Social Science Journal, Vol. 24, 1989

"Identifying and Managing Community Bank Performance After Deregulation", with William B. Harrison, Journal of Managerial Issues, Vol. II, No. 2, Summer 1990

"The Flotation Cost Adjustment To Utility Cost of Common Equity - Theory, Measurement and Implementation," presented at Twenty-Fifth Financial Forum, National Society of Rate of Return Analysts, Philadelphia, Pennsylvania, April 28, 1993.

Biography of Myon Edison Bristow, Dictionary of Virginia Biography, Volume 2, 2001.

Exhibit___(DCP-1)
Schedule 1

# ARIZONA-AMERICAN WATER COMPANY
## TOTAL COST OF CAPITAL

| Item | Amount | Percent | Cost | | Weighted Cost | |
|---|---|---|---|---|---|---|
| Short-Term Debt | $43,811,094.00 | 10.98% | 5.367% | | 0.59% | |
| Long-Term Debt | $189,208,140.00 | 47.40% | 5.463% | | 2.59% | |
| Common Equity | $166,123,326.00 | 41.62% | 9.50% | 10.50% | 3.95% | 4.37% |
| Total | $399,142,560.00 | 100.00% | | | **7.13%** | **7.55%** |
| | | | | | **Mid-Point** | **7.34%** |

# BACKGROUND AND EXPERIENCE PROFILE
# DAVID C. PARCELL, MBA, CRRA
# PRESIDENT/SENIOR ECONOMIST

## EDUCATION

| | |
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| 1970 | M.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech) |
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State Banks and the State Corporation Commission: A Historical Review, Technical Associates, Inc., 1974

"A Study of the Implications of the Sale of Wine by the Virginia Department of Alcoholic Beverage Control", prepared for the Virginia Wine Wholesalers Association, Virginia Retail Merchants Association, Virginia Food Dealers Association, Virginia Association of Chain Drugstores, Southland Corporation, and the Wine Institute, 1983.

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Exhibit___(DCP-1)
Schedule 1

# ARIZONA-AMERICAN WATER COMPANY
## TOTAL COST OF CAPITAL

| Item | Amount | Percent | Cost | | Weighted Cost | |
|---|---|---|---|---|---|---|
| Short-Term Debt | $43,811,094.00 | 10.98% | 5.367% | | 0.59% | |
| Long-Term Debt | $189,208,140.00 | 47.40% | 5.463% | | 2.59% | |
| Common Equity | $166,123,326.00 | 41.62% | 9.50% | 10.50% | 3.95% | 4.37% |
| Total | $399,142,560.00 | 100.00% | | | **7.13%** | **7.55%** |
| | | | | | **Mid-Point** | **7.34%** |

# ECONOMIC INDICATORS

| Year | Real GDP Growth* | Industrial Production Growth | Unemploy-ment Rate | Consumer Price Index | Producer Price Index |
|---|---|---|---|---|---|
| | | **1975 - 1982 Cycle** | | | |
| 1975 | -1.1% | -8.9% | 8.5% | 7.0% | 6.6% |
| 1976 | 5.4% | 10.8% | 7.7% | 4.8% | 3.7% |
| 1977 | 5.5% | 5.9% | 7.0% | 6.8% | 6.9% |
| 1978 | 5.0% | 5.7% | 6.0% | 9.0% | 9.2% |
| 1979 | 2.8% | 4.4% | 5.8% | 13.3% | 12.8% |
| 1980 | -0.2% | -1.9% | 7.0% | 12.4% | 11.8% |
| 1981 | 1.8% | 1.9% | 7.5% | 8.9% | 7.1% |
| 1982 | -2.1% | -4.4% | 9.5% | 3.8% | 3.6% |
| | | **1983 - 1991 Cycle** | | | |
| 1983 | 4.0% | 3.7% | 9.5% | 3.8% | 0.6% |
| 1984 | 6.8% | 9.3% | 7.5% | 3.9% | 1.7% |
| 1985 | 3.7% | 1.7% | 7.2% | 3.8% | 1.8% |
| 1986 | 3.1% | 0.9% | 7.0% | 1.1% | -2.3% |
| 1987 | 2.9% | 4.9% | 6.2% | 4.4% | 2.2% |
| 1988 | 3.8% | 4.5% | 5.5% | 4.4% | 4.0% |
| 1989 | 3.5% | 1.8% | 5.3% | 4.6% | 4.9% |
| 1990 | 1.8% | -0.2% | 5.6% | 6.1% | 5.7% |
| 1991 | -0.5% | -2.0% | 6.8% | 3.1% | -0.1% |
| | | **1992 - 2001 Cycle** | | | |
| 1992 | 3.0% | 3.1% | 7.5% | 2.9% | 1.6% |
| 1993 | 2.7% | 3.3% | 6.9% | 2.7% | 0.2% |
| 1994 | 4.0% | 5.4% | 6.1% | 2.7% | 1.7% |
| 1995 | 2.5% | 4.8% | 5.6% | 2.5% | 2.3% |
| 1996 | 3.7% | 4.3% | 5.4% | 3.3% | 2.8% |
| 1997 | 4.5% | 7.2% | 4.9% | 1.7% | -1.2% |
| 1998 | 4.2% | 5.9% | 4.5% | 1.6% | 0.0% |
| 1999 | 4.5% | 4.3% | 4.2% | 2.7% | 2.9% |
| 2000 | 3.7% | 4.2% | 4.0% | 3.4% | 3.6% |
| 2001 | 0.8% | -3.4% | 4.7% | 1.6% | -1.6% |
| | | **Current Cycle** | | | |
| 2002 | 1.6% | -0.1% | 5.8% | 2.4% | 1.2% |
| 2003 | 2.5% | 1.2% | 6.0% | 1.9% | 4.0% |
| 2004 | 3.6% | 2.5% | 5.5% | 3.3% | 4.2% |
| 2005 | 2.9% | 3.3% | 5.1% | 3.4% | 5.4% |
| 2006 | 2.8% | 2.2% | 4.6% | 2.5% | 1.1% |
| 2007 | 2.0% | 1.7% | 4.6% | 4.1% | 6.2% |

*GDP=Gross Domestic Product

Source: Council of Economic Advisors, Economic Indicators, various issues.

# ECONOMIC INDICATORS

| Year | Real GDP Growth* | Industrial Production Growth | Unemploy-ment Rate | Consumer Price Index | Producer Price Index |
|---|---|---|---|---|---|
| **2002** | | | | | |
| 1st Qtr. | 2.7% | -3.8% | 5.6% | 2.8% | 4.4% |
| 2nd Qtr. | 2.2% | -1.2% | 5.9% | 0.9% | -2.0% |
| 3rd Qtr. | 2.4% | 0.8% | 5.8% | 2.4% | 1.2% |
| 4th Qtr. | 0.2% | 1.4% | 5.9% | 1.6% | 0.4% |
| **2003** | | | | | |
| 1st Qtr. | 1.2% | 1.1% | 5.8% | 4.8% | 5.6% |
| 2nd Qtr. | 3.5% | -0.9% | 6.2% | 0.0% | -0.5% |
| 3rd Qtr. | 7.5% | -0.9% | 6.1% | 3.2% | 3.2% |
| 4th Qtr. | 2.7% | 1.5% | 5.9% | -0.3% | 2.8% |
| **2004** | | | | | |
| 1st Qtr. | 3.0% | 2.8% | 5.6% | 5.2% | 5.2% |
| 2nd Qtr. | 3.5% | 4.9% | 5.6% | 4.4% | 4.4% |
| 3rd Qtr. | 3.6% | 4.6% | 5.4% | 0.8% | 0.8% |
| 4th Qtr. | 2.5% | 4.3% | 5.4% | 3.6% | 7.2% |
| **2005** | | | | | |
| 1st Qtr. | 3.0% | 3.8% | 5.3% | 4.4% | 5.6% |
| 2nd Qtr. | 2.6% | 3.0% | 5.1% | 1.6% | -0.4% |
| 3rd Qtr. | 3.8% | 2.7% | 5.0% | 8.8% | 14.0% |
| 4th Qtr. | 1.3% | 2.9% | 4.9% | -2.0% | 4.0% |
| **2006** | | | | | |
| 1st Qtr. | 4.8% | 3.4% | 4.7% | 4.8% | -0.2% |
| 2nd Qtr. | 2.7% | 4.5% | 4.6% | 4.8% | 5.6% |
| 3rd Qtr. | 0.8% | 5.2% | 4.7% | 0.4% | -4.4% |
| 4th Qtr. | 1.5% | 3.5% | 4.5% | 0.0% | 3.6% |
| **2007** | | | | | |
| 1st Qtr. | 0.1% | 2.5% | 4.5% | 4.8% | 6.4% |
| 2nd Qtr. | 4.8% | 1.6% | 4.5% | 5.2% | 6.8% |
| 3rd Qtr. | 4.8% | 1.8% | 4.6% | 1.2% | 1.2% |
| 4th Qtr. | -0.2% | 2.2% | 4.8% | 6.4% | 10.8% |
| **2008** | | | | | |
| 1st Qtr. | 0.9% | 1.8% | 4.9% | 2.8% | 9.6% |
| 2nd Qtr. | 2.8% | 0.3% | 5.3% | 7.6% | 14.0% |
| 3rd Qtr. | -0.3% | -2.1% | 6.0% | 2.8% | -0.4% |

Source: Council of Economic Advisors, Economic Indicators, various issues.

# INTEREST RATES

| Year | Prime Rate | US Treas T Bills 3 Month | US Treas T Bonds 10 Year | Utility Bonds Aaa | Utility Bonds Aa | Utility Bonds A | Utility Bonds Baa |
|---|---|---|---|---|---|---|---|
| | | | **1975 - 1982 Cycle** | | | | |
| 1975 | 7.86% | 5.84% | 7.99% | 9.03% | 9.44% | 10.09% | 10.96% |
| 1976 | 6.84% | 4.99% | 7.61% | 8.63% | 8.92% | 9.29% | 9.82% |
| 1977 | 6.83% | 5.27% | 7.42% | 8.19% | 8.43% | 8.61% | 9.06% |
| 1978 | 9.06% | 7.22% | 8.41% | 8.87% | 9.10% | 9.29% | 9.62% |
| 1979 | 12.67% | 10.04% | 9.44% | 9.86% | 10.22% | 10.49% | 10.96% |
| 1980 | 15.27% | 11.51% | 11.46% | 12.30% | 13.00% | 13.34% | 13.95% |
| 1981 | 18.89% | 14.03% | 13.93% | 14.64% | 15.30% | 15.95% | 16.60% |
| 1982 | 14.86% | 10.69% | 13.00% | 14.22% | 14.79% | 15.86% | 16.45% |
| | | | **1983 - 1991 Cycle** | | | | |
| 1983 | 10.79% | 8.63% | 11.10% | 12.52% | 12.83% | 13.66% | 14.20% |
| 1984 | 12.04% | 9.58% | 12.44% | 12.72% | 13.66% | 14.03% | 14.53% |
| 1985 | 9.93% | 7.48% | 10.62% | 11.68% | 12.06% | 12.47% | 12.96% |
| 1986 | 8.33% | 5.98% | 7.68% | 8.92% | 9.30% | 9.58% | 10.00% |
| 1987 | 8.21% | 5.82% | 8.39% | 9.52% | 9.77% | 10.10% | 10.53% |
| 1988 | 9.32% | 6.69% | 8.85% | 10.05% | 10.26% | 10.49% | 11.00% |
| 1989 | 10.87% | 8.12% | 8.49% | 9.32% | 9.56% | 9.77% | 9.97% |
| 1990 | 10.01% | 7.51% | 8.55% | 9.45% | 9.65% | 9.86% | 10.06% |
| 1991 | 8.46% | 5.42% | 7.86% | 8.85% | 9.09% | 9.36% | 9.55% |
| | | | **1992 - 2001 Cycle** | | | | |
| 1992 | 6.25% | 3.45% | 7.01% | 8.19% | 8.55% | 8.69% | 8.86% |
| 1993 | 6.00% | 3.02% | 5.87% | 7.29% | 7.44% | 7.59% | 7.91% |
| 1994 | 7.15% | 4.29% | 7.09% | 8.07% | 8.21% | 8.31% | 8.63% |
| 1995 | 8.83% | 5.51% | 6.57% | 7.68% | 7.77% | 7.89% | 8.29% |
| 1996 | 8.27% | 5.02% | 6.44% | 7.48% | 7.57% | 7.75% | 8.16% |
| 1997 | 8.44% | 5.07% | 6.35% | 7.43% | 7.54% | 7.60% | 7.95% |
| 1998 | 8.35% | 4.81% | 5.26% | 6.77% | 6.91% | 7.04% | 7.26% |
| 1999 | 8.00% | 4.66% | 5.65% | 7.21% | 7.51% | 7.62% | 7.88% |
| 2000 | 9.23% | 5.85% | 6.03% | 7.88% | 8.06% | 8.24% | 8.36% |
| 2001 | 6.91% | 3.45% | 5.02% | 7.47% | 7.59% | 7.78% | 8.02% |
| | | | **Current Cycle** | | | | |
| 2002 | 4.67% | 1.62% | 4.61% | | [1] 7.19% | 7.37% | 8.02% |
| 2003 | 4.12% | 1.02% | 4.01% | | 6.40% | 6.58% | 6.84% |
| 2004 | 4.34% | 1.38% | 4.27% | | 6.04% | 6.16% | 6.40% |
| 2005 | 6.19% | 3.16% | 4.29% | | 5.44% | 5.65% | 5.93% |
| 2006 | 7.96% | 4.73% | 4.80% | | 5.84% | 6.07% | 6.32% |
| 2007 | 8.05% | 4.41% | 4.63% | | 5.94% | 6.07% | 6.33% |

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

## INTEREST RATES

| Year | Prime Rate | US Treas T Bills 3 Month | US Treas T Bonds 10 Year | Utility Bonds Aaa | Utility Bonds Aa | Utility Bonds A | Utility Bonds Baa |
|---|---|---|---|---|---|---|---|
| **2003** | | | | | | | |
| Jan | 4.25% | 1.17% | 4.05% | [1] | 6.87% | 7.08% | 7.47% |
| Feb | 4.25% | 1.16% | 3.90% | | 6.66% | 6.93% | 7.17% |
| Mar | 4.25% | 1.13% | 3.81% | | 6.56% | 6.79% | 7.05% |
| Apr | 4.25% | 1.14% | 3.96% | | 6.47% | 6.64% | 6.94% |
| May | 4.25% | 1.08% | 3.57% | | 6.20% | 6.36% | 6.47% |
| June | 4.00% | 0.95% | 3.33% | | 6.12% | 6.21% | 6.30% |
| July | 4.00% | 0.90% | 3.98% | | 6.37% | 6.57% | 6.67% |
| Aug | 4.00% | 0.96% | 4.45% | | 6.46% | 6.78% | 7.08% |
| Sept | 4.00% | 0.95% | 4.27% | | 6.30% | 6.56% | 6.87% |
| Oct | 4.00% | 0.93% | 4.29% | | 6.28% | 6.43% | 6.79% |
| Nov | 4.00% | 0.94% | 4.30% | | 6.26% | 6.37% | 6.69% |
| Dec | 4.00% | 0.90% | 4.27% | | 6.18% | 6.27% | 6.61% |
| **2004** | | | | | | | |
| Jan | 4.00% | 0.89% | 4.15% | | 6.08% | 6.15% | 6.47% |
| Feb | 4.00% | 0.92% | 4.08% | | 6.10% | 6.15% | 6.28% |
| Mar | 4.00% | 0.94% | 3.83% | | 5.93% | 5.97% | 6.12% |
| Apr | 4.00% | 0.94% | 4.35% | | 6.33% | 6.35% | 6.46% |
| May | 4.00% | 1.04% | 4.72% | | 6.66% | 6.62% | 6.75% |
| June | 4.00% | 1.27% | 4.73% | | 6.30% | 6.46% | 6.84% |
| July | 4.25% | 1.35% | 4.50% | | 6.09% | 6.27% | 6.67% |
| Aug | 4.50% | 1.46% | 4.28% | | 5.95% | 6.14% | 6.45% |
| Sept | 4.75% | 1.65% | 4.13% | | 5.79% | 5.98% | 6.27% |
| Oct | 4.75% | 1.75% | 4.10% | | 5.74% | 5.94% | 6.17% |
| Nov | 5.00% | 2.06% | 4.19% | | 5.79% | 5.97% | 6.16% |
| Dec | 5.25% | 2.20% | 4.23% | | 5.78% | 5.92% | 6.10% |
| **2005** | | | | | | | |
| Jan | 5.25% | 2.32% | 4.22% | | 5.68% | 5.78% | 5.95% |
| Feb | 5.50% | 2.53% | 4.17% | | 5.55% | 5.61% | 5.76% |
| Mar | 5.75% | 2.75% | 4.50% | | 5.76% | 5.83% | 6.01% |
| Apr | 5.75% | 2.79% | 4.34% | | 5.56% | 5.64% | 5.95% |
| May | 6.00% | 2.86% | 4.14% | | 5.39% | 5.53% | 5.88% |
| June | 6.25% | 2.99% | 4.00% | | 5.05% | 5.40% | 5.70% |
| July | 6.25% | 3.22% | 4.18% | | 5.18% | 5.51% | 5.81% |
| Aug | 6.50% | 3.45% | 4.26% | | 5.23% | 5.50% | 5.80% |
| Sept | 6.75% | 3.47% | 4.20% | | 5.27% | 5.52% | 5.83% |
| Oct | 6.75% | 3.70% | 4.46% | | 5.50% | 5.79% | 6.08% |
| Nov | 7.00% | 3.90% | 4.54% | | 5.59% | 5.88% | 6.19% |
| Dec | 7.25% | 3.89% | 4.47% | | 5.55% | 5.80% | 6.14% |
| **2006** | | | | | | | |
| Jan | 7.50% | 4.20% | 4.42% | | 5.50% | 5.75% | 6.06% |
| Feb | 7.50% | 4.41% | 4.57% | | 5.55% | 5.82% | 6.11% |
| Mar | 7.75% | 4.51% | 4.72% | | 5.71% | 5.98% | 6.26% |
| Apr | 7.75% | 4.59% | 4.99% | | 6.02% | 6.29% | 6.54% |
| May | 8.00% | 4.72% | 5.11% | | 6.16% | 6.42% | 6.59% |
| June | 8.25% | 4.79% | 5.11% | | 6.16% | 6.40% | 6.61% |
| July | 8.25% | 4.96% | 5.09% | | 6.13% | 6.37% | 6.61% |
| Aug | 8.25% | 4.98% | 4.88% | | 5.97% | 6.20% | 6.43% |
| Sept | 8.25% | 4.82% | 4.72% | | 5.81% | 6.00% | 6.26% |
| Oct | 8.25% | 4.89% | 4.73% | | 5.80% | 5.98% | 6.24% |
| Nov | 8.25% | 4.95% | 4.60% | | 5.61% | 5.80% | 6.04% |
| Dec | 8.25% | 4.85% | 4.56% | | 5.62% | 5.81% | 6.05% |
| **2007** | | | | | | | |
| Jan | 8.25% | 4.96% | 4.76% | | 5.78% | 5.96% | 6.16% |
| Feb | 8.25% | 5.02% | 4.72% | | 5.73% | 5.90% | 6.10% |
| Mar | 8.25% | 4.97% | 4.56% | | 5.66% | 5.85% | 6.10% |
| Apr | 8.25% | 4.86% | 4.69% | | 5.83% | 5.97% | 6.24% |
| May | 8.25% | 4.77% | 4.75% | | 5.86% | 5.99% | 6.23% |
| June | 8.25% | 4.63% | 5.10% | | 6.18% | 6.30% | 6.54% |
| July | 8.25% | 4.84% | 5.00% | | 6.11% | 6.25% | 6.49% |
| Aug | 8.25% | 4.34% | 4.67% | | 6.11% | 6.24% | 6.51% |
| Sept | 7.75% | 4.01% | 4.52% | | 6.10% | 6.18% | 6.45% |
| Oct | 7.50% | 3.97% | 4.53% | | 6.04% | 6.11% | 6.36% |
| Nov | 7.50% | 3.49% | 4.15% | | 5.87% | 5.97% | 6.27% |
| Dec | 7.25% | 3.08% | 4.10% | | 6.03% | 6.16% | 6.51% |
| **2008** | | | | | | | |
| Jan | 6.00% | 2.86% | 3.74% | | 5.87% | 6.02% | 6.35% |
| Feb | 6.00% | 2.21% | 3.74% | | 6.04% | 6.21% | 6.60% |
| Mar | 5.25% | 1.38% | 3.51% | | 5.99% | 6.21% | 6.68% |
| Apr | 5.00% | 1.32% | 3.88% | | 5.99% | 6.29% | 6.82% |
| May | 5.00% | 1.71% | 3.88% | | 6.07% | 6.27% | 6.79% |
| June | 5.00% | 1.90% | 4.10% | | 6.19% | 6.38% | 6.93% |
| July | 5.00% | 1.72% | 4.01% | | 6.13% | 6.40% | 6.97% |
| Aug | 5.00% | 1.79% | 3.89% | | 6.09% | 6.37% | 6.98% |
| Sept | 5.00% | 1.46% | 3.69% | | 6.13% | 6.49% | 7.15% |
| Oct | 4.00% | 0.84% | 3.81% | | 6.95% | 7.56% | 8.58% |
| Nov | 4.00% | | | | 6.83% | 7.60% | 8.98% |

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

# STOCK PRICE INDICATORS

| Year | S&P Composite [1] | NASDAQ Composite [1] | DJIA | S&P D/P | S&P E/P |
|---|---|---|---|---|---|
| | | **1975 - 1982 Cycle** | | | |
| 1975 | | | 802.49 | 4.31% | 9.15% |
| 1976 | | | 974.92 | 3.77% | 8.90% |
| 1977 | | | 894.63 | 4.62% | 10.79% |
| 1978 | | | 820.23 | 5.28% | 12.03% |
| 1979 | | | 844.40 | 5.47% | 13.46% |
| 1980 | | | 891.41 | 5.26% | 12.66% |
| 1981 | | | 932.92 | 5.20% | 11.96% |
| 1982 | | | 884.36 | 5.81% | 11.60% |
| | | **1983 - 1991 Cycle** | | | |
| 1983 | | | 1,190.34 | 4.40% | 8.03% |
| 1984 | | | 1,178.48 | 4.64% | 10.02% |
| 1985 | | | 1,328.23 | 4.25% | 8.12% |
| 1986 | | | 1,792.76 | 3.49% | 6.09% |
| 1987 | | | 2,275.99 | 3.08% | 5.48% |
| 1988 | [1] | [1] | 2,060.82 | 3.64% | 8.01% |
| 1989 | 322.84 | | 2,508.91 | 3.45% | 7.41% |
| 1990 | 334.59 | | 2,678.94 | 3.61% | 6.47% |
| 1991 | 376.18 | 491.69 | 2,929.33 | 3.24% | 4.79% |
| | | **1992 - 2001 Cycle** | | | |
| 1992 | $415.74 | $599.26 | 3,284.29 | 2.99% | 4.22% |
| 1993 | $451.21 | 715.16 | 3,522.06 | 2.78% | 4.46% |
| 1994 | $460.42 | 751.65 | 3,793.77 | 2.82% | 5.83% |
| 1995 | 541.72 | 925.19 | 4,493.76 | 2.56% | 6.09% |
| 1996 | 670.50 | 1,164.96 | 5,742.89 | 2.19% | 5.24% |
| 1997 | 873.43 | 1,469.49 | 7,441.15 | 1.77% | 4.57% |
| 1998 | 1,085.50 | 1,794.91 | 8,625.52 | 1.49% | 3.46% |
| 1999 | 1,327.33 | 2,728.15 | 10,464.88 | 1.25% | 3.17% |
| 2000 | 1,427.22 | 3,783.67 | 10,734.90 | 1.15% | 3.63% |
| 2001 | 1,194.18 | 2,035.00 | 10,189.13 | 1.32% | 2.95% |
| | | **Current Cycle** | | | |
| 2002 | 993.94 | 1,539.73 | 9,226.43 | 1.61% | 2.92% |
| 2003 | 965.23 | 1,647.17 | 8,993.59 | 1.77% | 3.84% |
| 2004 | 1,130.65 | 1,986.53 | 10,317.39 | 1.72% | 4.89% |
| 2005 | 1,207.23 | 2,099.32 | 10,547.67 | 1.83% | 5.36% |
| 2006 | 1,310.46 | 2,263.41 | 11,408.67 | 1.87% | 5.78% |
| 2007 | 1,477.19 | 2,578.47 | 13,169.98 | 1.86% | 5.29% |

[1] Note: this source did not publish the S&P Composite prior to 1988 and the NASDAQ Composite prior to 1991.

Source: Council of Economic Advisors, Economic Indicators, various issues.

# STOCK PRICE INDICATORS

| YEAR | S&P Composite | NASDAQ Composite | DJIA | S&P D/P | S&P E/P |
|---|---|---|---|---|---|
| **2002** | | | | | |
| 1st Qtr. | 1,131.56 | 1,879.85 | 10,105.27 | 1.39% | 2.15% |
| 2nd Qtr. | 1,068.45 | 1,641.53 | 9,912.70 | 1.49% | 2.70% |
| 3rd Qtr. | 894.65 | 1,308.17 | 8,487.59 | 1.76% | 3.68% |
| 4th Qtr. | 887.91 | 1,346.07 | 8,400.17 | 1.79% | 3.14% |
| **2003** | | | | | |
| 1st Qtr. | 860.03 | 1,350.44 | 8,122.83 | 1.89% | 3.57% |
| 2nd Qtr. | 938.00 | 1,521.92 | 8,684.52 | 1.75% | 3.55% |
| 3rd Qtr. | 1,000.50 | 1,765.96 | 9,310.57 | 1.74% | 3.87% |
| 4th Qtr. | 1,056.42 | 1,934.71 | 9,856.44 | 1.69% | 4.38% |
| **2004** | | | | | |
| 1st Qtr. | 1,133.29 | 2,041.95 | 10,488.43 | 1.64% | 4.62% |
| 2nd Qtr. | 1,122.87 | 1,984.13 | 10,289.04 | 1.71% | 4.92% |
| 3rd Qtr. | 1,104.15 | 1,872.90 | 10,129.85 | 1.79% | 5.18% |
| 4th Qtr. | 1,162.07 | 2,050.22 | 10,362.25 | 1.75% | 4.83% |
| **2005** | | | | | |
| 1st Qtr. | 1,191.98 | 2,056.01 | 10,648.48 | 1.77% | 5.11% |
| 2nd Qtr. | 1,181.65 | 2,012.24 | 10,382.35 | 1.85% | 5.32% |
| 3rd Qtr. | 1,225.91 | 2,144.61 | 10,532.24 | 1.83% | 5.42% |
| 4th Qtr. | 1,262.07 | 2,246.09 | 10,827.79 | 1.86% | 5.60% |
| **2006** | | | | | |
| 1st Qtr. | 1,283.04 | 2,287.97 | 10,996.04 | 1.85% | 5.61% |
| 2nd Qtr. | 1,281.77 | 2,240.46 | 11,188.84 | 1.90% | 5.86% |
| 3rd Qtr. | 1,288.40 | 2,141.97 | 11,274.49 | 1.91% | 5.88% |
| 4th Qtr. | 1,389.48 | 2,390.26 | 12,175.30 | 1.81% | 5.75% |
| **2007** | | | | | |
| 1st Qtr. | 1,425.30 | 2,444.85 | 12,470.97 | 1.84% | 5.85% |
| 2nd Qtr. | 1,496.43 | 2,552.37 | 13,214.26 | 1.82% | 5.65% |
| 3rd Qtr. | 1,490.81 | 2,609.68 | 13,488.43 | 1.86% | 5.15% |
| 4th Qtr. | 1,494.09 | 2,701.59 | 13,502.95 | 1.91% | 4.51% |
| **2008** | | | | | |
| 1st Qtr. | 1,350.19 | 2,332.91 | 12,383.86 | 2.11% | 4.55% |
| 2nd Qtr. | 1,371.65 | 2,426.26 | 12,508.59 | 2.10% | 4.01% |
| 3rd Qtr. | 1,251.94 | 2,290.87 | 11,322.40 | 2.29% | |

[1] Note: this source did not publish the S&P Composite prior to 1988 and the NASDAC Composite prior to 1991.

Source: Council of Economic Advisors, Economic Indicators, various issues.

Exhibit___(DCP-1)
Schedule 3

# AMERICAN WATER WORKS
# CAPITAL STRUCTURE RATIOS
# 2006 - 2008

| YEAR | COMMON EQUITY | PREFERRED STOCK | LONG-TERM DEBT | SHORT-TERM DEBT |
|---|---|---|---|---|
| 2006 | $3,817,397 | $1,779,043 | $3,096,404 | $1,007,128 |
| | 39.4% | 18.3% | 31.9% | 10.4% |
| | 43.9% | 20.5% | 35.6% | |
| 2007 | $4,542,046 | $28,864 | $4,674,837 | $316,969 |
| | 47.5% | 0.3% | 48.9% | 3.3% |
| | 49.1% | 0.3% | 50.6% | |
| Sept. 30, 2008 | $4,162,357 | $28,774 | $4,669,502 | $423,021 |
| | 44.8% | | 50.3% | 4.6% |
| | 47.0% | | 52.7% | |

Source: American Water Capital Corp. Prospectus for Senior Notes dated November 21, 2008.

Exhibit___(DCP-1)
Schedule 4

# PROXY WATER UTILITIES
## COMMON EQUITY RATIOS

| COMPANY | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | |
| American States Water Co. | 43% | 48% | 47% | 50% | 50% |
| Aqua America, Inc. | 44% | 45% | 44% | 38% | 43% |
| California Water Service Group | 46% | 51% | 51% | 55% | 57% |
| Southwest Water Co. | 51% | 63% | 53% | 56% | 52% |
| Average | 46% | 52% | 49% | 50% | 51% |
| **AUS Utility Reports Group** | | | | | |
| American States Water Co. | 43% | 48% | 47% | 50% | 50% |
| Aqua America, Inc. | 44% | 45% | 44% | 38% | 43% |
| Artesian Resources Corp. | 37% | 36% | 38% | 38% | 48% |
| California Water Service Group | 46% | 51% | 51% | 55% | 57% |
| Connecticut Water Service, Inc. | 52% | 53% | 55% | 54% | 50% |
| Middlesex Water | 41% | 46% | 42% | 49% | 48% |
| SJW Corporation | 54% | 56% | 57% | 56% | 52% |
| Southwest Water Co. | 51% | 63% | 53% | 56% | 52% |
| York Water Company | 50% | 48% | 46% | 51% | 48% |
| Average | 46% | 50% | 48% | 50% | 50% |
| **Villadsen Water Sample** | | | | | |
| American States Water Co. | 43% | 48% | 47% | 50% | 50% |
| Aqua America, Inc. | 44% | 45% | 44% | 38% | 43% |
| California Water Service Group | 46% | 51% | 51% | 55% | 57% |
| Connecticut Water Service, Inc. | 52% | 53% | 55% | 54% | 50% |
| Middlesex Water | 41% | 46% | 42% | 49% | 48% |
| SJW Corporation | 54% | 56% | 57% | 56% | 52% |
| Southwest Water Co. | 51% | 63% | 53% | 56% | 52% |
| York Water Company | 50% | 48% | 46% | 51% | 48% |
| Average | 48% | 51% | 49% | 51% | 50% |

Source: AUS Utilitly Reports.

# PROXY WATER UTILITIES
# DIVIDEND YIELD

| COMPANY | DPS | September - November, 2008 HIGH | LOW | AVERAGE | YIELD |
|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | |
| American States Water Co. | $1.00 | $41.20 | $27.00 | $34.10 | 2.9% |
| Aqua America, Inc. | $0.54 | $19.14 | $12.20 | $15.67 | 3.4% |
| California Water Service Group | $1.17 | $42.50 | $27.68 | $35.09 | 3.3% |
| Southwest Water Co. | $0.24 | $13.40 | $3.81 | $8.61 | 2.8% |
| Average | | | | | **3.1%** |
| **AUS Utility Reports Group** | | | | | |
| American States Water Co. | $1.00 | $41.20 | $27.00 | $34.10 | 2.9% |
| Aqua America, Inc. | $0.54 | $19.14 | $12.20 | $15.67 | 3.4% |
| Artesian Resources Corp. | $0.71 | $17.53 | $13.00 | $15.27 | 4.7% |
| California Water Service Group | $1.17 | $42.50 | $27.68 | $35.09 | 3.3% |
| Connecticut Water Service, Inc. | $0.89 | $28.95 | $19.26 | $24.11 | 3.7% |
| Middlesex Water | $0.71 | $17.95 | $12.05 | $15.00 | 4.7% |
| SJW Corporation | $0.64 | $30.42 | $20.05 | $25.24 | 2.6% |
| Southwest Water Co. | $0.24 | $13.40 | $3.81 | $8.61 | 2.8% |
| York Water Company | $0.48 | $14.66 | $10.25 | $12.46 | 3.9% |
| Average | | | | | **3.6%** |
| **Villadsen Water Sample** | | | | | |
| American States Water Co. | $1.00 | $41.20 | $27.00 | $34.10 | 2.9% |
| Aqua America, Inc. | $0.54 | $19.14 | $12.20 | $15.67 | 3.4% |
| California Water Service Group | $1.17 | $42.50 | $27.68 | $35.09 | 3.3% |
| Connecticut Water Service, Inc. | $0.89 | $28.95 | $19.26 | $24.11 | 3.7% |
| Middlesex Water | $0.71 | $17.95 | $12.05 | $15.00 | 4.7% |
| SJW Corporation | $0.64 | $30.42 | $20.05 | $25.24 | 2.6% |
| Southwest Water Co. | $0.24 | $13.40 | $3.81 | $8.61 | 2.8% |
| York Water Company | $0.48 | $14.66 | $10.25 | $12.46 | 3.9% |
| Average | | | | | **3.4%** |

Source: Yahoo! Finance.

# PROXY WATER UTILITIES
# RETENTION GROWTH RATES

| COMPANY | 2003 | 2004 | 2005 | 2006 | 2007 | Average | 2008 | 2009 | '11-'13 | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | | | |
| American States Water Co. | -0.7% | 1.2% | 3.3% | 2.6% | 3.8% | 2.0% | 4.5% | 5.5% | 7.5% | 5.8% |
| Aqua America, Inc. | 4.8% | 4.8% | 5.0% | 4.1% | 3.2% | 4.4% | 3.0% | 3.5% | 4.0% | 3.5% |
| California Water Service Group | 0.7% | 2.2% | 2.1% | 1.1% | 1.1% | 1.4% | 2.5% | 4.0% | 5.5% | 4.0% |
| Southwest Water Co. | 6.5% | 1.5% | 2.2% | 2.7% | -1.3% | 2.3% | 0.5% | 1.5% | 4.5% | 2.2% |
| Average | | | | | | **2.5%** | | | | **3.9%** |
| **AUS Utility Reports Group** | | | | | | | | | | |
| American States Water Co. | -0.7% | 1.2% | 3.3% | 2.6% | 3.8% | 2.0% | 4.5% | 5.5% | 7.5% | 5.8% |
| Aqua America, Inc. | 4.8% | 4.8% | 5.0% | 4.1% | 3.2% | 4.4% | 3.0% | 3.5% | 4.0% | 3.5% |
| Artesian Resources Corp. | 1.5% | 2.0% | 2.8% | 4.0% | 2.4% | 2.5% | | | | |
| California Water Service Group | 0.7% | 2.2% | 2.1% | 1.1% | 1.1% | 1.4% | 2.5% | 4.0% | 5.5% | 4.0% |
| Connecticut Water Service, Inc. | 3.0% | 3.1% | 0.6% | -0.4% | 1.6% | 1.6% | | | | |
| Middlesex Water | -0.5% | 0.8% | 0.5% | 1.5% | 1.8% | 0.8% | | | | |
| SJW Corporation | 4.5% | 4.7% | 6.1% | 9.5% | 3.4% | 5.6% | | | | |
| Southwest Water Co. | 6.5% | 1.5% | 2.2% | 2.7% | -1.3% | 2.3% | 0.5% | 1.5% | 4.5% | 2.2% |
| York Water Company | 2.5% | 2.5% | 3.0% | 2.4% | 1.5% | 2.4% | | | | |
| Average | | | | | | **2.6%** | | | | **3.9%** |
| **Villadsen Water Sample** | | | | | | | | | | |
| American States Water Co. | -0.7% | 1.2% | 3.3% | 2.6% | 3.8% | 2.0% | 4.5% | 5.5% | 7.5% | 5.8% |
| Aqua America, Inc. | 4.8% | 4.8% | 5.0% | 4.1% | 3.2% | 4.4% | 3.0% | 3.5% | 4.0% | 3.5% |
| California Water Service Group | 0.7% | 2.2% | 2.1% | 1.1% | 1.1% | 1.4% | 2.5% | 4.0% | 5.5% | 4.0% |
| Connecticut Water Service, Inc. | 3.0% | 3.1% | 0.6% | -0.4% | 1.6% | 1.6% | | | | |
| Middlesex Water | -0.5% | 0.8% | 0.5% | 1.5% | 1.8% | 0.8% | | | | |
| SJW Corporation | 4.5% | 4.7% | 6.1% | 9.5% | 3.4% | 5.6% | | | | |
| Southwest Water Co. | 6.5% | 1.5% | 2.2% | 2.7% | -1.3% | 2.3% | 0.5% | 1.5% | 4.5% | 2.2% |
| York Water Company | 2.5% | 2.5% | 3.0% | 2.4% | 1.5% | 2.4% | | | | |
| Average | | | | | | **2.6%** | | | | **4.4%** |

Source: AUS Utility Reports and Value Line Investment Survey.

# PROXY WATER UTILITIES
# PER SHARE GROWTH RATES

| COMPANY | 5-Year Historic Growth Rates | | | | Est'd '05-'07 to '11-'13 Growth Rates | | | |
|---|---|---|---|---|---|---|---|---|
| | EPS | DPS | BVPS | Average | EPS | DPS | BVPS | Average |
| **Value Line Water Group** | | | | | | | | |
| American States Water Co. | 3.9% | 2.0% | 4.5% | 3.5% | 11.0% | 5.0% | 2.5% | 6.2% |
| Aqua America, Inc. | 5.6% | 8.5% | 10.9% | 8.3% | 7.5% | 5.5% | 5.5% | 6.2% |
| California Water Service Group | 3.7% | 0.7% | 7.1% | 3.8% | 10.0% | 2.0% | 4.0% | 5.3% |
| Southwest Water Co. | -4.5% | 8.9% | 7.0% | 3.8% | 9.5% | 6.0% | 1.0% | 5.5% |
| Average | | | | **4.9%** | | | | **5.8%** |
| **AUS Utility Reports Group** | | | | | | | | |
| American States Water Co. | 3.9% | 2.0% | 4.5% | 3.5% | 11.0% | 5.0% | 2.5% | 6.2% |
| Aqua America, Inc. | 5.6% | 8.5% | 10.9% | 8.3% | 7.5% | 5.5% | 5.5% | 6.2% |
| Artesian Resources Corp. | 3.4% | 5.3% | 7.0% | 5.2% | | | | |
| California Water Service Group | 3.7% | 0.7% | 7.1% | 3.8% | 10.0% | 2.0% | 4.0% | 5.3% |
| Connecticut Water Service, Inc. | -0.4% | 1.2% | 3.6% | 1.5% | | | | |
| Middlesex Water | 3.6% | 1.8% | 6.3% | 3.9% | | | | |
| SJW Corporation | 5.9% | 5.8% | 9.0% | 6.9% | | | | |
| Southwest Water Co. | -4.5% | 8.9% | 7.0% | 3.8% | 9.5% | 6.0% | 1.0% | 5.5% |
| York Water Company | 7.3% | 6.5% | 8.9% | 7.6% | | | | |
| Average | | | | **4.9%** | | | | **5.8%** |
| **Villadsen Water Sample** | | | | | | | | |
| American States Water Co. | 3.9% | 2.0% | 4.5% | 3.5% | 11.0% | 5.0% | 2.5% | 6.2% |
| Aqua America, Inc. | 5.6% | 8.5% | 10.9% | 8.3% | 7.5% | 5.5% | 5.5% | 6.2% |
| California Water Service Group | 3.7% | 0.7% | 7.1% | 3.8% | 10.0% | 2.0% | 4.0% | 5.3% |
| Connecticut Water Service, Inc. | -0.4% | 1.2% | 3.6% | 1.5% | | | | |
| Middlesex Water | 3.6% | 1.8% | 6.3% | 3.9% | | | | |
| SJW Corporation | 5.9% | 5.8% | 9.0% | 6.9% | | | | |
| Southwest Water Co. | -4.5% | 8.9% | 7.0% | 3.8% | 9.5% | 6.0% | 1.0% | 5.5% |
| York Water Company | 7.3% | 6.5% | 8.9% | 7.6% | | | | |
| Average | | | | **4.9%** | | | | **5.8%** |

Source: AUS Utility Reports and Value Line Investment Survey.

# PROXY WATER UTILITIES
## DCF COST RATES

| COMPANY | ADJUSTED YIELD | HISTORIC RETENTION GROWTH | PROSPECTIVE RETENTION GROWTH | HISTORIC PER SHARE GROWTH | PROSPECTIVE PER SHARE GROWTH | FIRST CALL EPS GROWTH | AVERAGE GROWTH | DCF RATES |
|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | |
| American States Water Co. | 3.0% | 2.0% | 5.8% | 3.5% | 6.2% | 4.0% | 4.3% | 7.3% |
| Aqua America, Inc. | 3.5% | 4.4% | 3.5% | 8.3% | 6.2% | 7.0% | 5.9% | 9.4% |
| California Water Service Group | 3.4% | 1.4% | 4.0% | 3.8% | 5.3% | 8.0% | 4.5% | 7.9% |
| Southwest Water Co. | 2.8% | 2.3% | 2.2% | 3.8% | 5.5% | 5.0% | 3.8% | 6.6% |
| Mean | 3.2% | 2.5% | 3.9% | 4.9% | 5.8% | 6.0% | 4.6% | **7.8%** |
| Median | 3.2% | 2.2% | 3.8% | 3.8% | 5.8% | 6.0% | 4.4% | **7.6%** |
| Composite-Mean | | 5.7% | 7.1% | 8.1% | 9.0% | **9.2%** | 7.8% | |
| Composite-Median | | 5.4% | 7.0% | 7.0% | 9.0% | **9.2%** | 7.6% | |
| **AUS Utility Reports Group** | | | | | | | | |
| American States Water Co. | 3.0% | 2.0% | 5.8% | 3.5% | 6.2% | 4.0% | 4.3% | 7.3% |
| Aqua America, Inc. | 3.5% | 4.4% | 3.5% | 8.3% | 6.2% | 7.0% | 5.9% | 9.4% |
| Artesian Resources Corp. | 4.8% | 2.5% | | 5.2% | | 5.0% | 4.2% | 9.0% |
| California Water Service Group | 3.4% | 1.4% | 4.0% | 3.8% | 5.3% | 8.0% | 4.5% | 7.9% |
| Connecticut Water Service, Inc. | 3.8% | 1.6% | | 1.5% | | 15.0% | 6.0% | 9.8% |
| Middlesex Water | 4.8% | 0.8% | | 3.9% | | 8.0% | 4.2% | 9.1% |
| SJW Corporation | 2.6% | 5.6% | | 6.9% | | 10.0% | 7.5% | 10.2% |
| Southwest Water Co. | 2.8% | 2.3% | 2.2% | 3.8% | 5.5% | 5.0% | 3.8% | 6.6% |
| York Water Company | 4.0% | 2.4% | | 7.6% | | 8.0% | 6.0% | 10.0% |
| Mean | 3.7% | 2.6% | 3.9% | 4.9% | 5.8% | 7.8% | 5.2% | **8.8%** |
| Median | 3.5% | 2.3% | 3.8% | 3.9% | 5.8% | 8.0% | 4.5% | **9.1%** |
| Composite-Mean | | 6.2% | 7.5% | 8.6% | 9.4% | **11.4%** | 8.8% | |
| Composite-Median | | 5.9% | 7.3% | 7.5% | 9.4% | **11.5%** | 8.1% | |
| **Villadsen Water Sample** | | | | | | | | |
| American States Water Co. | 3.0% | 2.0% | 5.8% | 3.5% | 6.2% | 4.0% | 4.3% | 7.3% |
| Aqua America, Inc. | 3.5% | 4.4% | 3.5% | 8.3% | 6.2% | 7.0% | 5.9% | 9.4% |
| California Water Service Group | 3.4% | 1.4% | 4.0% | 3.8% | 5.3% | 8.0% | 4.5% | 7.9% |
| Connecticut Water Service, Inc. | 3.8% | 1.6% | | 1.5% | | 15.0% | 6.0% | 9.8% |
| Middlesex Water | 4.8% | 0.8% | | 3.9% | | 8.0% | 4.2% | 9.1% |
| SJW Corporation | 2.6% | 5.6% | | 6.9% | | 10.0% | 7.5% | 10.2% |
| Southwest Water Co. | 2.8% | 2.3% | | 3.8% | | 5.0% | 3.7% | 6.5% |
| York Water Company | 4.0% | 2.4% | | 7.6% | | 8.0% | 6.0% | 10.0% |
| Mean | 3.5% | 2.6% | 4.4% | 4.9% | 5.9% | 8.1% | 5.3% | **8.8%** |
| Median | 3.5% | 2.2% | 4.0% | 3.9% | 6.2% | 8.0% | 5.2% | **9.2%** |
| Composite-Mean | | 6.1% | 8.0% | 8.4% | 9.4% | **11.6%** | 8.8% | |
| Composite-Median | | 5.7% | 7.5% | 7.4% | 9.6% | **11.5%** | 8.7% | |

Note: negative average growth rates excluded from above DCF analyses.

# STANDARD & POOR'S 500 COMPOSITE
# 20-YEAR U.S. TREASURY BOND YIELDS
# RISK PREMIUMS

| Year | EPS | BVPS | ROE | 20-YEAR T-BOND | RISK PREMIUM |
|---|---|---|---|---|---|
| $1,977.00 | | $79.07 | | | |
| $1,978.00 | $12.33 | $85.35 | 15.00% | 7.90% | 7.10% |
| $1,979.00 | $14.86 | $94.27 | 16.55% | 8.86% | 7.69% |
| $1,980.00 | $14.82 | $102.48 | 15.06% | 9.97% | 5.09% |
| $1,981.00 | $15.36 | $109.43 | 14.50% | 11.55% | 2.95% |
| $1,982.00 | $12.64 | $112.46 | 11.39% | 13.50% | -2.11% |
| $1,983.00 | $14.03 | $116.93 | 12.23% | 10.38% | 1.85% |
| $1,984.00 | $16.64 | $122.47 | 13.90% | 11.74% | 2.16% |
| $1,985.00 | $14.61 | $125.20 | 11.80% | 11.25% | 0.55% |
| $1,986.00 | $14.48 | $126.82 | 11.49% | 8.98% | 2.51% |
| $1,987.00 | $17.50 | $134.04 | 13.42% | 7.92% | 5.50% |
| $1,988.00 | $23.75 | $141.32 | 17.25% | 8.97% | 8.28% |
| $1,989.00 | $22.87 | $147.26 | 15.85% | 8.81% | 7.04% |
| $1,990.00 | $21.73 | $153.01 | 14.47% | 8.19% | 6.28% |
| $1,991.00 | $16.29 | $158.85 | 10.45% | 8.22% | 2.23% |
| $1,992.00 | $19.09 | $149.74 | 12.37% | 7.26% | 5.11% |
| $1,993.00 | $21.89 | $180.88 | 13.24% | 7.17% | 6.07% |
| $1,994.00 | $30.60 | $193.06 | 16.37% | 6.59% | 9.78% |
| $1,995.00 | $33.96 | $215.51 | 16.62% | 7.60% | 9.02% |
| $1,996.00 | $38.73 | $237.08 | 17.11% | 6.18% | 10.93% |
| $1,997.00 | $39.72 | $249.52 | 16.33% | 6.64% | 9.69% |
| $1,998.00 | $37.71 | $266.40 | 14.62% | 5.83% | 8.79% |
| $1,999.00 | $48.17 | $290.68 | 17.29% | 5.57% | 11.72% |
| $2,000.00 | $50.00 | $325.80 | 16.22% | 6.50% | 9.72% |
| $2,001.00 | $24.69 | $338.37 | 7.43% | 5.53% | 1.90% |
| $2,002.00 | $27.59 | $321.72 | 8.36% | 5.59% | 2.77% |
| $2,003.00 | $48.73 | $367.17 | 14.15% | 4.80% | 9.35% |
| $2,004.00 | $58.55 | $414.75 | 14.98% | 5.02% | 9.96% |
| $2,005.00 | $69.93 | $453.06 | 16.12% | 4.69% | 11.43% |
| $2,006.00 | $81.51 | $504.39 | 17.03% | 4.68% | 12.35% |
| $2,007.00 | $66.17 | $529.59 | 12.80% | 4.86% | 7.94% |
| Average | | | **14.09%** | **7.69%** | **6.45%** |

Sources: Standard & Poor's Analysts' Handbook and Morningstar 2008 Yearbook.

# PROXY WATER UTILITIES
## CAPM COST RATES

| COMPANY | RISK-FREE RATE | BETA | RISK PREMIUM | CAPM RATES |
|---|---|---|---|---|
| **Value Line Water Group** | | | | |
| American States Water Co. | 4.35% | 0.95 | 5.90% | 10.0% |
| Aqua America, Inc. | 4.35% | 1.00 | 5.90% | 10.3% |
| California Water Service Group | 4.35% | 1.10 | 5.90% | 10.8% |
| Southwest Water Co. | 4.35% | 1.05 | 5.90% | 10.5% |
| Mean | | | | **10.4%** |
| Median | | | | **10.4%** |
| **AUS Utility Reports Group** | | | | |
| American States Water Co. | 4.35% | 0.95 | 5.90% | 10.0% |
| Aqua America, Inc. | 4.35% | 1.00 | 5.90% | 10.3% |
| Artesian Resources Corp. | 4.35% | | 5.90% | |
| California Water Service Group | 4.35% | 1.10 | 5.90% | 10.8% |
| Connecticut Water Service, Inc. | 4.35% | 0.80 | 5.90% | 9.1% |
| Middlesex Water | 4.35% | 0.90 | 5.90% | 9.7% |
| SJW Corporation | 4.35% | 1.15 | 5.90% | 11.1% |
| Southwest Water Co. | 4.35% | 1.05 | 5.90% | 10.5% |
| York Water Company | 4.35% | 0.50 | 5.90% | 7.3% |
| Mean | | | | **9.8%** |
| Median | | | | **10.1%** |
| **Villadsen Water Sample** | | | | |
| American States Water Co. | 4.35% | 0.95 | 5.90% | 10.0% |
| Aqua America, Inc. | 4.35% | 1.00 | 5.90% | 10.3% |
| California Water Service Group | 4.35% | 1.10 | 5.90% | 10.8% |
| Connecticut Water Service, Inc. | 4.35% | 0.80 | 5.90% | 9.1% |
| Middlesex Water | 4.35% | 0.90 | 5.90% | 9.7% |
| SJW Corporation | 4.35% | 1.15 | 5.90% | 11.1% |
| Southwest Water Co. | 4.35% | 1.05 | 5.90% | 10.5% |
| York Water Company | 4.35% | 0.50 | 5.90% | 7.3% |
| Mean | | | | **9.8%** |
| Median | | | | **10.1%** |

Sources: Value Line Investment Survey, Standard & Poor's Analysts' Handbook, Morningstar 2008 Yearbook.

# PROXY WATER UTILITIES
## RATES OF RETURN ON AVERAGE COMMON EQUITY

| COMPANY | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 1992-2001 Average | 2003-2007 Average | 2008 | 2009 | 2011-2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 14.0% | 11.7% | 9.5% | 10.0% | 10.0% | 9.4% | 9.5% | 10.2% | 9.6% | 10.5% | 9.6% | 5.6% | 8.0% | 10.4% | 8.2% | 9.3% | 10.4% | 8.3% | 9.5% | 11.0% | 13.5% |
| Aqua America, Inc. | 11.0% | 11.4% | 11.2% | 12.0% | 11.8% | 12.5% | 14.2% | 13.8% | 13.0% | 14.0% | 13.9% | 12.3% | 11.4% | 11.5% | 11.0% | 10.0% | 12.5% | 11.2% | 11.0% | 11.5% | 12.0% |
| California Water Service Group | 10.4% | 12.6% | 10.6% | 10.0% | 12.6% | 14.5% | 11.0% | 11.4% | 10.3% | 7.5% | 9.6% | 8.7% | 9.8% | 9.3% | 7.6% | 4.9% | 11.1% | 8.1% | 8.5% | 9.5% | 11.0% |
| Southwest Water Co. | 8.0% | 0.4% | 3.7% | 5.0% | 6.5% | 8.3% | 10.0% | 15.5% | 12.2% | 12.0% | 12.1% | 10.2% | 6.8% | 5.4% | 5.6% | -5.0% | 8.2% | 4.6% | 4.5% | 6.0% | 9.0% |
| Mean | 10.9% | 9.0% | 8.8% | 9.3% | 10.2% | 11.2% | 11.2% | 12.7% | 11.3% | 11.0% | 11.3% | 9.2% | 9.0% | 9.1% | 8.1% | 4.8% | **10.5%** | **8.0%** | **8.4%** | **9.5%** | **11.4%** |
| Median | 10.7% | 11.6% | 10.1% | 10.0% | 10.9% | 11.0% | 10.5% | 12.6% | 11.3% | 11.3% | 10.9% | 9.5% | 8.9% | 9.9% | 7.8% | 7.1% | **11.0%** | **8.6%** | **9.0%** | **10.3%** | **11.5%** |
| **AUS Utility Reports Group** | | | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 14.0% | 11.7% | 9.5% | 10.0% | 10.0% | 9.4% | 9.5% | 10.2% | 9.6% | 10.5% | 9.6% | 5.6% | 8.0% | 10.4% | 8.2% | 9.3% | 10.4% | 8.3% | 9.5% | 11.0% | 13.5% |
| Aqua America, Inc. | 11.0% | 11.4% | 11.2% | 12.0% | 11.8% | 12.5% | 14.2% | 13.8% | 13.0% | 14.0% | 13.9% | 12.3% | 11.4% | 11.5% | 11.0% | 10.0% | 12.5% | 11.2% | 11.0% | 11.5% | 12.0% |
| Artesian Resources Corp. | | | | | | | 9.8% | 9.7% | 8.1% | 9.4% | 9.6% | 7.4% | 7.6% | 8.9% | 10.2% | 8.5% | | 8.5% | | | |
| California Water Service Group | 10.4% | 12.6% | 10.6% | 10.0% | 12.6% | 14.5% | 11.0% | 11.4% | 10.3% | 7.5% | 9.6% | 8.7% | 9.8% | 9.3% | 7.6% | 4.9% | 11.1% | 8.1% | 8.5% | 9.5% | 11.0% |
| Connecticut Water Service, Inc. | 12.1% | 12.5% | 12.6% | 12.7% | 12.4% | 12.3% | 12.2% | 12.4% | 11.8% | 13.3% | 11.6% | 11.2% | 11.4% | 12.0% | 7.5% | 8.9% | 12.4% | 10.2% | | | |
| Middlesex Water | 11.7% | 12.6% | 12.1% | 12.0% | 10.3% | 11.2% | 10.7% | 10.2% | 6.5% | 9.0% | 9.8% | 8.2% | 8.3% | 8.4% | 8.6% | 8.8% | 10.6% | 8.5% | | | |
| SJW Corporation | 11.8% | 11.8% | 9.6% | 10.8% | 16.2% | 12.0% | 11.6% | 11.1% | 9.6% | 9.5% | 9.4% | 9.8% | 11.3% | 11.5% | 18.2% | 8.3% | 11.4% | 11.8% | | | |
| Southwest Water Co. | 8.0% | 0.4% | 3.7% | 5.0% | 6.5% | 8.3% | 10.0% | 15.5% | 12.2% | 12.0% | 12.1% | 10.2% | 6.8% | 5.4% | 5.6% | -5.0% | 8.2% | 4.6% | 4.5% | 6.0% | 9.0% |
| York Water Company | 11.9% | 12.6% | 11.7% | 10.7% | 11.1% | 10.9% | 10.3% | 10.3% | 11.9% | 11.5% | 16.7% | 11.7% | 12.2% | 11.8% | 10.5% | 9.7% | 11.3% | 11.2% | | | |
| Mean | 11.4% | 10.7% | 10.1% | 10.4% | 11.4% | 11.4% | 11.0% | 11.6% | 10.3% | 10.7% | 11.4% | 9.5% | 9.6% | 9.9% | 9.7% | 7.0% | **11.0%** | **9.2%** | **8.4%** | **9.5%** | **11.4%** |
| Median | 11.8% | 12.2% | 10.9% | 10.8% | 11.5% | 11.6% | 10.7% | 11.1% | 10.3% | 10.5% | 9.8% | 9.8% | 9.8% | 10.4% | 8.6% | 8.8% | **11.1%** | **9.5%** | **9.0%** | **10.3%** | **11.5%** |
| **Villadsen Water Sample** | | | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 14.0% | 11.7% | 9.5% | 10.0% | 10.0% | 9.4% | 9.5% | 10.2% | 9.6% | 10.5% | 9.6% | 5.6% | 8.0% | 10.4% | 8.2% | 9.3% | 10.4% | 8.3% | 9.5% | 11.0% | 13.5% |
| Aqua America, Inc. | 11.0% | 11.4% | 11.2% | 12.0% | 11.8% | 12.5% | 14.2% | 13.8% | 13.0% | 14.0% | 13.9% | 12.3% | 11.4% | 11.5% | 11.0% | 10.0% | 12.5% | 11.2% | 11.0% | 11.5% | 12.0% |
| California Water Service Group | 10.4% | 12.6% | 10.6% | 10.0% | 12.6% | 14.5% | 11.0% | 11.4% | 10.3% | 7.5% | 9.6% | 8.7% | 9.8% | 9.3% | 7.6% | 4.9% | 11.1% | 8.1% | 8.5% | 9.5% | 11.0% |
| Connecticut Water Service, Inc. | 12.1% | 12.5% | 12.6% | 12.7% | 12.4% | 12.3% | 12.2% | 12.4% | 11.8% | 13.3% | 11.6% | 11.2% | 11.4% | 12.0% | 7.5% | 8.9% | 12.4% | 10.2% | | | |
| Middlesex Water | 11.7% | 12.6% | 12.1% | 12.0% | 10.3% | 11.2% | 10.7% | 10.2% | 6.5% | 9.0% | 9.8% | 8.2% | 8.3% | 8.4% | 8.6% | 8.8% | 10.6% | 8.5% | | | |
| SJW Corporation | 11.8% | 11.8% | 9.6% | 10.8% | 16.2% | 12.0% | 11.6% | 11.1% | 9.6% | 9.5% | 9.4% | 9.8% | 11.3% | 11.5% | 18.2% | 8.3% | 11.4% | 11.8% | | | |
| Southwest Water Co. | 8.0% | 0.4% | 3.7% | 5.0% | 6.5% | 8.3% | 10.0% | 15.5% | 12.2% | 12.0% | 12.1% | 10.2% | 6.8% | 5.4% | 5.6% | -5.0% | 8.2% | 4.6% | 4.5% | 6.0% | 9.0% |
| York Water Company | 11.9% | 12.6% | 11.7% | 10.7% | 11.1% | 10.9% | 10.3% | 10.3% | 11.9% | 11.5% | 16.7% | 11.7% | 12.2% | 11.8% | 10.5% | 9.7% | 11.3% | 11.2% | | | |
| Mean | 11.4% | 10.7% | 10.1% | 10.4% | 11.4% | 11.4% | 11.2% | 11.9% | 10.6% | 10.9% | 11.6% | 9.7% | 9.9% | 10.0% | 9.7% | 6.9% | **11.0%** | **9.2%** | **8.4%** | **9.5%** | **11.4%** |
| Median | 11.8% | 12.2% | 10.9% | 10.8% | 11.5% | 11.6% | 10.9% | 11.3% | 11.1% | 11.0% | 10.7% | 10.0% | 10.6% | 11.0% | 8.4% | 8.9% | **11.3%** | **9.8%** | **9.0%** | **10.3%** | **11.5%** |

Source: AUS Utility Reports and Value Line Investment Survey.

# PROXY WATER UTILITIES
# MARKET TO BOOK RATIOS

| COMPANY | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 1992-2001 Average | 2003-2007 Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 142% | 156% | 124% | 120% | 134% | 137% | 148% | 177% | 168% | 182% | 176% | 178% | 181% | 230% | 205% | 209% | 149% | 201% |
| *Aqua America, Inc.* | 140% | 158% | 151% | 124% | 189% | 237% | 313% | 287% | 302% | 365% | 304% | 280% | 307% | 436% | 332% | 259% | 227% | 323% |
| California Water Service Group | 147% | 172% | 157% | 140% | 160% | 191% | 207% | 202% | 186% | 201% | 199% | 189% | 218% | 264% | 223% | 219% | 176% | 223% |
| Southwest Water Co. | 118% | 112% | 85% | 75% | 109% | 153% | 174% | 223% | 266% | 240% | 202% | 250% | 156% | 241% | 201% | 172% | 156% | 204% |
| Mean | 137% | 150% | 129% | 115% | 148% | 180% | 211% | 222% | 231% | 247% | 220% | 224% | 216% | 293% | 240% | 215% | 177% | 238% |
| Median | 141% | 157% | 138% | 122% | 147% | 172% | 191% | 213% | 226% | 221% | 201% | 220% | 200% | 253% | 214% | 214% | 173% | 220% |
| **AUS Utility Reports Group** | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 142% | 156% | 124% | 120% | 134% | 137% | 148% | 177% | 168% | 182% | 176% | 178% | 181% | 230% | 205% | 209% | 149% | 201% |
| *Aqua America, Inc.* | 140% | 158% | 151% | 124% | 189% | 237% | 313% | 287% | 302% | 365% | 304% | 280% | 307% | 436% | 332% | 259% | 227% | 323% |
| Artesian Resources Corp. | | | | | | | 156% | 168% | 149% | 183% | 159% | 207% | 196% | 215% | 198% | 150% | | 184% |
| California Water Service Group | 147% | 172% | 157% | 140% | 160% | 191% | 207% | 202% | 186% | 201% | 199% | 189% | 218% | 264% | 223% | 219% | 176% | 223% |
| Connecticut Water Service, Inc. | 162% | 180% | 154% | 149% | 156% | 168% | 193% | 216% | 226% | 304% | 275% | 266% | 233% | 216% | 211% | 199% | 191% | 225% |
| Middlesex Water | 111% | 184% | 169% | 150% | 150% | 164% | 176% | 218% | 222% | 248% | 225% | 265% | 214% | 214% | 178% | 184% | 179% | 211% |
| SJW Corporation | 113% | 124% | 117% | 106% | 113% | 133% | 137% | 193% | 195% | 182% | 155% | 193% | 175% | 240% | 307% | 236% | 139% | 230% |
| Southwest Water Co. | 118% | 112% | 85% | 75% | 109% | 153% | 174% | 223% | 266% | 240% | 202% | 250% | 156% | 241% | 201% | 172% | 156% | 204% |
| York Water Company | 189% | 174% | 87% | 197% | 195% | 226% | 198% | 174% | 154% | 284% | 277% | 335% | 275% | 367% | 309% | 266% | 186% | 310% |
| Mean | 136% | 158% | 131% | 133% | 151% | 176% | 189% | 207% | 208% | 241% | 219% | 240% | 217% | 269% | 240% | 210% | 175% | 236% |
| Median | 141% | 165% | 138% | 132% | 153% | 166% | 176% | 202% | 195% | 240% | 202% | 250% | 214% | 240% | 211% | 209% | 171% | 225% |
| **Villadsen Water Sample** | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 142% | 156% | 124% | 120% | 134% | 137% | 148% | 177% | 168% | 182% | 176% | 178% | 181% | 230% | 205% | 209% | 149% | 201% |
| Aqua America, Inc. | | | 151% | 124% | 189% | 237% | 313% | 287% | 302% | 365% | 304% | 280% | 307% | 436% | 332% | 259% | 246% | 323% |
| California Water Service Group | 147% | 172% | 157% | 140% | 160% | 191% | 207% | 202% | 186% | 201% | 199% | 189% | 218% | 264% | 223% | 219% | 176% | 223% |
| *Connecticut Water Service, Inc.* | 162% | 180% | 154% | 149% | 156% | 168% | 193% | 216% | 226% | 304% | 275% | 266% | 233% | 216% | 211% | 199% | 191% | 225% |
| Middlesex Water | 111% | 184% | 169% | 150% | 150% | 164% | 176% | 218% | 222% | 248% | 225% | 265% | 214% | 214% | 178% | 184% | 179% | 211% |
| SJW Corporation | 113% | 124% | 117% | 106% | 113% | 133% | 137% | 193% | 195% | 182% | 155% | 193% | 175% | 240% | 307% | 236% | 139% | 230% |
| Southwest Water Co. | 118% | 112% | 85% | 75% | 109% | 153% | 174% | 223% | 266% | 240% | 202% | 250% | 156% | 241% | 201% | 172% | 156% | 204% |
| York Water Company | 189% | 174% | 87% | 197% | 195% | 226% | 198% | 174% | 154% | 284% | 277% | 335% | 275% | 367% | 309% | 266% | 186% | 310% |
| Mean | 137% | 157% | 131% | 133% | 151% | 176% | 193% | 212% | 215% | 248% | 227% | 245% | 220% | 276% | 246% | 218% | 178% | 241% |
| Median | 142% | 172% | 138% | 132% | 153% | 166% | 185% | 210% | 209% | 244% | 214% | 258% | 216% | 241% | 217% | 214% | 175% | 229% |

*Source: AUS Utility Reports and Value Line Investment Survey.*

# STANDARD & POOR'S 500 COMPOSITE RETURNS AND MARKET-TO-BOOK RATIOS 1992 - 2007

| YEAR | RETURN ON AVERAGE EQUITY | MARKET-TO BOOK RATIO |
|---|---|---|
| 1992 | 12.2% | 271% |
| 1993 | 13.2% | 272% |
| 1994 | 16.4% | 246% |
| 1995 | 16.6% | 264% |
| 1996 | 17.1% | 299% |
| 1997 | 16.3% | 354% |
| ###### | 14.6% | 421% |
| ###### | 17.3% | 481% |
| ###### | 16.2% | 453% |
| ###### | 7.5% | 353% |
| ###### | 8.4% | 296% |
| ###### | 14.2% | 278% |
| ###### | 15.0% | 291% |
| ###### | 16.1% | 278% |
| ###### | 17.0% | 277% |
| ###### | 12.8% | 284% |
| Averages: | | |
| 1992-2001 | 14.7% | 341% |
| 2003-2007 | 15.0% | 282% |

Source: Standard & Poor's Analyst's Handbook, 2008 edition, page 1.

# RISK INDICATORS

| GROUP | VALUE LINE SAFETY | VALUE LINE BETA | VALUE LINE FIN STR | S & P STK RANK |
|---|---|---|---|---|
| S & P's 500 Composite | 2.7 | 1.05 | B++ | B+ |
| Value Line Water Group | 3.0 | 1.03 | B+ | B+/A- |
| AUS Utility Reports Group | 2.9 | 0.93 | B+ | B+/A- |
| Villadsen Water Sample | 2.9 | 0.93 | B+ | B+/A- |

Sources: Value Line Investment Survey, Standard & Poor's Stock Guide.

Definitions:

Safety rankings are in a range of 1 to 5, with 1 representing the highest safety or lowest risk.

Beta reflects the variability of a particular stock, relative to the market as a whole. A stock with a beta of 1.0 moves in concert with the market, a stock with a beta below 1.0 is less variable than the market, and a stock with a beta above 1.0 is more variable than the market.

Financial strengths range from C to A++, with the latter representing the highest level.

Common stock rankings range from D to A+, with the later representing the highest level.

## RISK INDICATORS

| COMPANY | VALUE LINE SAFETY | VALUE LINE BETA | VALUE LINE FINANCIAL STRENGTH | | S& P STOCK RANKING | |
|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | |
| American States Water Co. | 3 | 0.95 | B++ | 3.67 | B+ | 3.33 |
| Aqua America, Inc. | 3 | 1.00 | B+ | 3.33 | A | 4.00 |
| California Water Service Group | 3 | 1.10 | B++ | 3.67 | B+ | 3.33 |
| Southwest Water Co. | 3 | 1.05 | B | 3.00 | B+ | 3.33 |
| Average | 3.0 | 1.03 | **B+** | **3.42** | B+/A- | 3.50 |
| **AUS Utility Reports Group** | | | | | | |
| American States Water Co. | 3 | 0.95 | B++ | 3.67 | B+ | 3.33 |
| Aqua America, Inc. | 3 | 1.00 | B+ | 3.33 | A | 4.00 |
| Artesian Resources Corp. | | | | | | |
| California Water Service Group | 3 | 1.10 | B++ | 3.67 | B+ | 3.33 |
| Connecticut Water Service, Inc. | 2 | 0.80 | B+ | 3.33 | A- | 3.67 |
| Middlesex Water | 3 | 0.90 | B+ | 3.33 | B+ | 3.33 |
| SJW Corporation | 3 | 1.15 | B+ | 3.33 | A- | 3.67 |
| Southwest Water Co. | 3 | 1.05 | B | 3.00 | B+ | 3.33 |
| York Water Company | 3 | 0.50 | B+ | 3.33 | | |
| Average | 2.9 | 0.93 | **B+** | **3.37** | B+/A- | 3.52 |
| **Villadsen Water Sample** | | | | | | |
| American States Water Co. | 3.0 | 0.95 | B++ | 3.67 | B+ | 3.33 |
| Aqua America, Inc. | 3.0 | 1.00 | B+ | 3.33 | A | 4.00 |
| California Water Service Group | 3.0 | 1.10 | B++ | 3.67 | B+ | 3.33 |
| Connecticut Water Service, Inc. | 2.0 | 0.80 | B+ | 3.33 | A- | 3.67 |
| Middlesex Water | 3.0 | 0.90 | B+ | 3.33 | B+ | 3.33 |
| SJW Corporation | 3.0 | 1.15 | B+ | 3.33 | A- | 3.67 |
| Southwest Water Co. | 3.0 | 1.05 | B | 3.00 | B+ | 3.33 |
| York Water Company | 3.0 | 0.50 | B+ | 3.33 | | |
| Average | 2.9 | 0.93 | **B+** | **3.37** | B+/A- | 3.52 |

Sources: Standard & Poor's Stock Guide and Value Line Investment Survey.

Exhibit___(DCP-1)
Schedule 11

# ARIZONA-AMERICAN WATER COMPANY
# PRE-TAX COVERAGE

| ITEM | PERCENT | COST RATE | WEIGHTED COST | PRE-TAX COST | |
|---|---|---|---|---|---|
| Short-Term Debt | 10.98% | 5.37% | 0.59% | 0.59% | |
| Long-Term Debt | 47.40% | 5.46% | 2.59% | 2.59% | |
| Common Equity | 41.62% | 10.000% | 4.16% | 6.94% | (1) |
| TOTAL CAPITAL | 100.00% | | 7.34% | 10.12% | |

(1) Post-tax weighted cost divided by .60 (composite tax factor)

Pre-tax coverage = 10.12%/(0.59% + 2.59%)
**3.18 X**

Standard & Poor's Utility Benchmark Ratios:

| | A | BBB |
|---|---|---|
| Pre-tax coverage (X) Business Position: | | |
| 3 | 2.8x - 3.4x | 1.8x - 2.8x |
| Total Debt to Total Capital (%) Business Position | | |
| 3 | 50% - 55% | 55% - 65% |

Note: Standard & Poor's no longer employs the pre-tax coverage ratios as one of its qualitative ratings criteria. The above-cited S&P benchmark ratios reflect the 1999 criteria reported by S&P.

Exhibit___(DCP-1)
Schedule 12

## SUMMARY OF DISCOUNTED CASH FLOW AND CAPITAL ASSET PRICING MODEL RESULTS AS DEVELOPED IN ARIZONA-AMERICAN WATER COMPANY WITNESS VILLADSEN'S TESTIMONY

| Group/Company | Simple DCF Results | Multi-Stage DCF Results | Long-Term Risk-Free Rate | | | Short-Term Risk-Free Rate | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | CAPM Results | ECAPM Results (0.5%) | ECAPM Results (1.5%) | CAPM Results | ECAPM Results (1.0%) | ECAPM Results (2%) | ECAPM Results (3%) |
| **Water Sample** | | | | | | | | | |
| American States Water Co. | 9.0% | 8.1% | 10.6% | 10.6% | 10.7% | 10.0% | 10.0% | 10.0% | 10.1% |
| Aqua America, Inc. | 13.1% | 8.6% | 9.6% | 9.7% | 9.9% | 8.8% | 8.9% | 9.1% | 9.3% |
| California Water Service Group | 12.1% | 9.2% | 12.1% | 12.0% | 11.8% | 11.8% | 11.6% | 11.4% | 11.2% |
| Connecticut Water Service, Inc. | 4.8% | 7.8% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| Middlesex Water | 4.7% | 7.9% | 9.6% | 9.7% | 9.9% | 8.8% | 8.9% | 9.1% | 9.3% |
| SJW Corporation | 12.4% | 7.9% | 11.6% | 11.5% | 11.4% | 11.2% | 11.0% | 10.9% | 10.8% |
| Southwest Water Co. | 15.6% | 8.5% | 10.6% | 10.6% | 10.7% | 10.0% | 10.0% | 10.0% | 10.1% |
| York Water Company | 3.8% | 7.3% | 5.8% | 6.1% | 6.9% | 4.0% | 4.8% | 5.5% | 6.3% |
| Mean | 9.4% | 8.2% | 9.9% | 9.9% | 10.1% | 9.1% | 9.2% | 9.3% | 9.5% |
| Median | 10.6% | 8.0% | 10.1% | 10.2% | 10.3% | 9.4% | 9.5% | 9.6% | 9.7% |
| **Gas LDC Sample** | | | | | | | | | |
| AGL Resources | 9.9% | 9.6% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| Atmos Energy | 10.1% | 9.8% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| Nicor | 8.5% | 9.3% | 10.6% | 10.6% | 10.7% | 10.0% | 10.0% | 10.0% | 10.1% |
| Laclede Grojp | 7.7% | 9.0% | 10.1% | 10.2% | 10.3% | 9.4% | 9.5% | 9.6% | 9.7% |
| New Jersey Resources | 8.1% | 8.3% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| Northwest Natural Gas | 8.4% | 8.2% | 9.6% | 9.7% | 9.9% | 8.8% | 8.9% | 9.1% | 9.3% |
| Piedmont Natural Gas | 9.1% | 9.0% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| South Jersey Industries | 10.4% | 8.5% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| Southwest Gas | 8.4% | 8.1% | 9.6% | 9.7% | 9.9% | 8.8% | 8.9% | 9.1% | 9.3% |
| WGL Resources | 7.9% | 8.9% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |
| Mean | 8.9% | 8.9% | 9.5% | 9.6% | 9.8% | 8.6% | 8.8% | 9.0% | 9.2% |
| Median | 8.5% | 9.0% | 9.2% | 9.3% | 9.5% | 8.2% | 8.4% | 8.7% | 8.9% |

Sources: Villadsen testimony, Table Nos. BV-6, BV-7, BV-10, BV-19, and BV-22.

EXHIBIT A-17

**BEFORE THE ARIZONA CORPORATION COMMISSION**

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
SANDRA D. KENNEDY
Commissioner
PAUL NEWMAN
Commissioner
BOB STUMP
Commissioner

| | |
|---|---|
| IN THE MATTER OF THE APPLICATION OF BLACK MOUNTAIN SEWER CORPORATION, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON | DOCKET NO. SW-02361A-08-0609 |

DIRECT

TESTIMONY

OF

JUAN C. MANRIQUE

PUBLIC UTILITIES ANALYST I

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

SEPTEMBER 21, 2009

PENGAD 800-631-6989
EXHIBIT
A-17
ADMIN. NOTICE

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**EXECUTIVE SUMMARY**
**BLACK MOUNTAIN SEWER CORPORATION**
**DOCKET NO. SW-02361A-08-0609**

The Direct Testimony of Staff witness Juan C. Manrique addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Black Mountain Sewer Corporation ("Applicant") for this proceeding consisting of 0.0 percent debt and 100.0 percent equity. Although the Applicant has debt in the form of capital leases, the Commission has directed (Decision Nos. 59944) recovery of the lease costs as operating expense.

Cost of Equity – Staff recommends that the Commission adopt a 9.6 percent return on equity ("ROE") for the Applicant. Staff's estimated ROE for the Applicant is based on cost of equity estimates for the sample companies ranging from 9.8 percent for the capital asset pricing model ("CAPM") to 10.7 percent for the discounted cash flow method ("DCF"). Staff's ROE recommendation includes a 0.7 percent downward adjustment to reflect a lower financial risk in the Applicant's capital structure compared to that of the sample companies.

Overall Rate of Return – Staff recommends that the Commission adopt an overall rate of return ("ROR") of 9.6 percent, i.e. the ROE, since the recommended capital structure includes no debt.

Mr. Bourassa's Testimony – The Commission should reject the Company-proposed 12.8 percent ROE for the following reasons:

> Mr. Bourassa's DCF estimates rely exclusively on analysts' forecasts. In addition Mr. Bourassa's DCF constant-growth analysis does not include dividend growth.

## I. INTRODUCTION

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

A. My name is Juan C. Manrique. I am a Public Utilities Analyst employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

**Q. Briefly describe your responsibilities as a Public Utilities Analyst.**

A. In my position as a Public Utilities Analyst, I perform studies to estimate the cost of capital component in rate filings to determine the overall revenue requirement and analyze requests for financing authorizations.

**Q. Please describe your educational background and professional experience.**

A. I graduated from Arizona State University and received a Bachelor of Science degree in Finance. My course of studies included courses in corporate and international finance, investments, accounting, statistics, and economics. I began employment as a Staff Public Utilities Analyst in October 2008. My professional experience includes two years as a Loan Officer with a homebuilder and as an Associate for an Investor Relations firm.

**Q. What is the scope of your testimony in this case?**

A. My testimony provides Staff's recommended capital structure, return on equity ("ROE") and overall rate of return ("ROR") for establishing the revenue requirement for Black Mountain Sewer Corporation ("Black Mountain" or "Applicant").

**Q. Please provide a brief description of Black Mountain and its relation to affiliates.**

A. Black Mountain is a Subchapter "C" corporation. Black Mountain is owned by Algonquin Water Resources of America, Inc. ("AWRA"). AWRA is an indirect wholly owned

subsidiary of Algonquin Power Income Fund which is publicly traded on the Toronto Stock Exchange. Black Mountain is a sister company to other public service corporations regulated by the Commission including: Bella Vista Water Company, Litchfield Park Service Company, Northern Sunrise Water Company, Southern Sunrise Water Company and Gold Canyon Sewer Company.

*Summary of Testimony and Recommendations*

**Q. Briefly summarize how Staff's cost of capital testimony is organized.**

A. Staff's cost of capital testimony is presented in ten sections. Section I is this introduction. Section II discusses the concept of weighted average cost of capital ("WACC"). Section III presents the concept of capital structure and presents Staff's recommended capital structure for Black Mountain in this proceeding. Section IV discusses the concepts of ROE and risk. Section V presents the methods employed by Staff to estimate Black Mountain's ROE. Section VI presents the findings of Staff's ROE analysis. Section VII presents Staff's final cost of equity estimates for Black Mountain. Section VIII presents Staff's ROR recommendation. Section IX presents Staff's comments on the Direct Testimony of the Applicant's witness, Mr. Thomas J. Bourassa. Finally, Section X presents the conclusions.

**Q. Have you prepared any exhibits to accompany your testimony?**

A. Yes. I prepared eight schedules (JCM-1 to JCM-8) that support Staff's cost of capital analysis.

**Q. What is Staff's recommended rate of return for Black Mountain?**

A. Staff recommends a 9.6 percent overall ROR as shown in Schedule JCM-1. Staff's ROR recommendation is based on cost of equity estimates for Black Mountain that range from

10.7 percent using the capital asset pricing model ("CAPM") to 9.8 percent using the discounted cash flow method ("DCF"). Staff's ROR recommendation reflects a 0.7 percent downward adjustment to the estimated ROE to account for a lower financial risk in the Applicant's capital structure compared to that of the sample companies.

*Black Mountain's Proposed Overall Rate of Return*

**Q. Briefly summarize Black Mountain's proposed capital structure, cost of debt, return on equity and overall rate of return for this proceeding.**

A. Table 1 summarizes the Applicant's proposed capital structure, cost of debt, return on equity and overall rate of return in this proceeding:

**Table 1**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| Long-term Debt | 0.0% | 0.0% | 0.0% |
| Common Equity | 100.0% | 12.8% | 12.8% |
| **Cost of Capital/ROR** | | | **12.8%** |

Black Mountain is proposing an overall rate of return of 12.8 percent.

## II. THE WEIGHTED AVERAGE COST OF CAPITAL

**Q. Briefly explain the cost of capital concept.**

A. The cost of capital is the opportunity cost of choosing one investment over others with equivalent risk. In other words, the cost of capital is the return that stakeholders expect for investing their financial resources in a determined business venture over another business venture.

**Q. What is the overall cost of capital?**

A. The cost of capital to a company issuing a variety of securities (i.e., stock and indebtedness) is an average of the cost rates on all issued securities adjusted to reflect the relative amounts for each security in the company's entire capital structure. Thus, the overall cost of capital is the WACC.

**Q. How is the WACC calculated?**

A. The WACC is calculated by adding the weighted expected returns of a firm's securities. The WACC formula is:

Equation 1.

$$WACC = \sum_{i=1}^{n} W_i * r_i$$

In this equation, $W_i$ is the weight given to the $i^{th}$ security (the proportion of the $i^{th}$ security relative to the portfolio) and $r_i$ is the expected return on the $i^{th}$ security.

**Q. Can you provide an example demonstrating application of Equation 1?**

A. Yes. For this example, assume that an entity has a capital structure composed of 60 percent debt and 40 percent equity. Also, assume that the embedded cost of debt is 6.0 percent and the expected return on equity, i.e. the cost of equity, is 10.5 percent. Calculation of the WACC is as follows:

$$WACC = (60\% * 6.0\%) + (40\% * 10.5\%)$$

$$WACC = 3.60\% + 4.20\%$$

$$WACC = 7.80\%$$

The weighted average cost of capital in this example is 7.80 percent. The entity in this example would need to earn an overall rate of return of 7.80 percent to cover its cost of capital.

## III. CAPITAL STRUCTURE

*Background*

**Q. Please explain the capital structure concept.**

A. The capital structure of a firm consists of the relative proportions of each type of security-- short-term debt, long-term debt (including capital leases), preferred stock and common stock-- that are used to finance the firm's assets.

**Q. How is the capital structure expressed?**

A. The capital structure of a company is expressed as the percentage of each component of the capital structure (capital leases, short-term debt, long-term debt, preferred stock and common stock) relative to the entire capital structure.

As an example, the capital structure for an entity that is financed by $20,000 of capital leases, $85,000 of long-term debt, $15,000 of preferred stock and $40,000 of common stock is shown in Table 2.

**Table 2**

| Component | | | % |
|---|---|---|---|
| Capital Leases | $20,000 | ($20,000/$200,000) | 10.0% |
| Long-Term Debt | $85,000 | ($85,000/$200,000) | 42.5% |
| Preferred Stock | $15,000 | ($15,000/$200,000) | 7.5% |
| Common Stock | $80,000 | ($80,000/$200,000) | 40.0% |
| Total | $200,000 | | 100% |

The capital structure in this example is composed of 0.0 percent short-term debt, 10.0 percent capital leases, 42.5 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

*Black Mountain's Capital Structure*

**Q. What capital structure does Black Mountain propose?**

A. The Applicant proposes a capital structure composed of 0.0 percent debt and 100.0 percent common equity.

**Q. What is Staff's proposed capital structure for Black Mountain?**

A. Staff recommends a capital structure composed of 0.0 percent debt and 100.0 percent equity.

**Q. Is this Black Mountain's actual capital structure?**

A. No. The Company's actual capital structure is 21.6 percent debt and 78.4 percent equity. The Company has two operating leases that funded its Scottsdale treatment capacity which would normally be considered debt. However, Decision No. 59944, dated December 26, 1996, states that these leases shall be considered as lease expense, i.e., not as debt.

**Q. How does Black Mountain's capital structure compare to capital structures of publicly traded water utilities?**

A. The Applicant's capital structure is composed of 0.0 percent debt and 100.0 percent equity. Schedule JCM-4 shows the capital structures of six publicly traded water companies ("sample water companies") as of July 2009. The average capital structure for the sample water utilities is comprised of approximately 50.2 percent debt and 49.8 percent equity.

**Q. Do you have additional comments on Black Mountain's capital structure?**

A. Yes. Black Mountain has two inter-company loans. However, Commission Decision No. 59944 specifies that the debt service cost for these loans is to be treated as an operating expense. Therefore, Staff did not include these loans in the Applicant's capital structure. However, regardless of how these loans are treated for rate-making purposes, the loans do exist and present financial risk in the minds of investors. Accordingly, Staff recognized the real financial risk presented by these loans in calculating an ROE estimate, as discussed in Section VII of this testimony.

## IV. RETURN ON EQUITY

*Background*

**Q. Please define the term "cost of equity capital".**

A. The cost of equity is the rate of return that investors expect to earn on their investment in a business entity given its risk. In other words, the cost of equity to the entity is the investors' expected rate of return on other investments of similar risk. As investors have a wide selection of stocks to choose from, they will choose stocks with similar risks but higher returns. Therefore, the market determines the entity's cost of equity.

**Q. Is there a correlation between interest rates and the cost of equity?**

A. Yes. The cost of equity tends to move in the same direction as interest rates. This relationship is part of the CAPM formula. The CAPM is a market based model employed by Staff for estimating the cost of equity. The CAPM is further discussed in Section V of this testimony.

**Q. What has been the general trend of interest rates in recent years?**

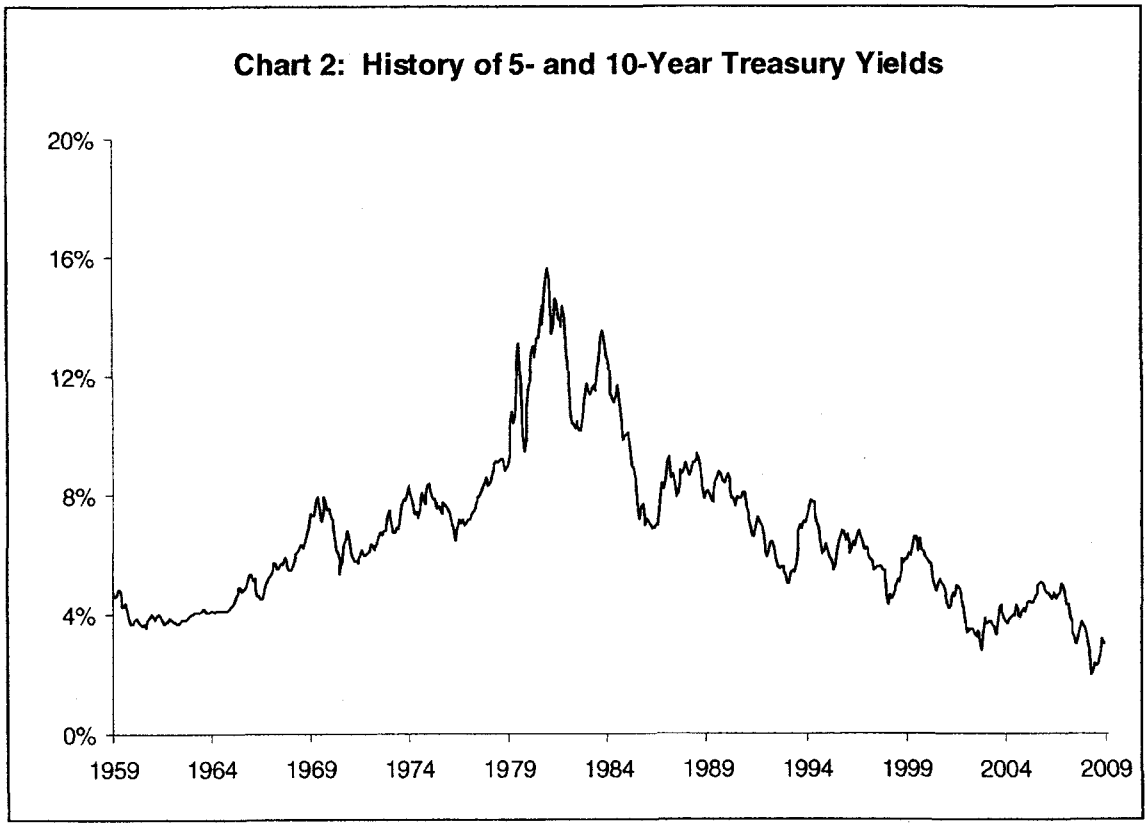
A. A chronological chart of interest rates is a good tool to show interest rate history and identify trends. Chart 1 graphs intermediate U.S. treasury rates from September 1999 to September 2009.

**Chart 1: Average Yield on 5-, 7-, & 10-Year Treasuries**

Chart 1 shows that intermediate interest rates trended downward from 2000 to mid-2003, then turned slightly upward until mid-2007, and have trended downward in the past two years.

**Q. What has been the general trend in interest rates longer term?**

A. U.S. Treasury rates from 1959 to present are shown in Chart 2. The chart shows that interest rates trended upward through the mid-1980s and have trended downward over the last 25 years.



**Q. Do these trends suggest anything in terms of cost of equity?**

A. Yes. As previously demonstrated, interest rates and cost of equity tend to move in the same direction; therefore, cost of equity has declined in the past 25 years.

**Q. Do actual returns represent the cost of equity?**

A. No. The cost of equity represents investors' *expected* returns and not realized returns.

**Q. Is there any information available that leads to an understanding of the relationship between the equity returns required for a regulated water utility and those required in the market as a whole?**

A. Yes. A comparison of betas, a component of the CAPM discussed in Section V, for the water utility industry and the market provide insight into this relationship. The average beta (0.82)[1] for a water utility is lower than the theoretical average beta for all stocks (1.0). According to the CAPM formula, the cost of equity capital moves in the same direction as beta. Since the beta for the water utility industry is lower than the beta for the market, the implication is that the required return on equity for a regulated water utility is below the average required return on the market.

*Risk*

**Q. Please define risk in relation to cost of capital.**

A. Risk, as it relates to an investment, is the variability or uncertainty of the returns on a particular security. Investors are risk averse and require a greater potential return to invest in relatively greater risk opportunities, i.e., investors require compensation for taking on additional risk. Risk is generally separated into two components. Those components are market risk (systematic risk) and non-market risk (diversifiable risk or firm-specific risk).

[1] See Schedule JCM-6

**Q. What is market risk?**

A. Market risk or systematic risk is the risk of an investment that cannot be reduced through diversification. Market risk stems from factors that affect all securities such as recessions, war, inflation and high interest rates. Since these factors affect the entire market they cannot be eliminated through diversification. Market risk does not impact each security to the same degree. The degree to which any security's returns is affected by the market can be measured using Beta. Beta reflects the business risk and the financial risk of a security.

**Q. Please define business risk.**

A. Business risk is the fluctuation of earnings inherent in a firm's operations and environment such as competition and adverse economic conditions that may impair its ability to provide returns on investment. Companies in the same or similar line of business tend to experience the same fluctuations in business cycles.

**Q. Please define financial risk.**

A. Financial risk is the fluctuation of earnings inherent in the use of debt financing by a firm and which may impair its ability to provide adequate return. The more a company uses debt financing, the more the company becomes exposed to financial risk.

**Q. Do business risk and financial risk affect the cost of equity?**

A. Yes.

**Q. Is a firm subject to any other risk?**

A. Yes. Firms are also subject to unsystematic or firm-specific risk. Examples of unsystematic risk include losses caused by labor problems, nationalization of assets, loss

of a big client or weather conditions. Investors can eliminate firm-specific risk by holding a diverse portfolio; thus, such risk is not of concern to diversified investors.

**Q. How does Black Mountain's financial risk compare to the sample water companies' financial risk from the perspective of an investor that recognizes as debt the two capital leases the Commission treats as operating expense for ratemaking proposes?**

A. From an investor's perspective, Black Mountain's capital structure is composed of approximately 21.6 percent debt and 78.4 percent equity. Schedule JCM-4 shows the capital structures of six publicly traded water companies ("sample water companies") as of July 2009, as well as Black Mountain's actual capital structure. As of July 2009, the sample water utilities were capitalized with approximately 50.2 percent debt and 49.8 percent equity, while Black Mountain's actual capital structure consists of approximately 21.6 percent debt and 78.4 percent equity. Thus, Black Mountain's shareholders bear less financial risk than the shareholders of the sample companies.

**Q. Is firm-specific risk measured by beta?**

A. No. Firm-specific risk is not measured by beta.

**Q. Is the cost of equity affected by firm-specific risk?**

A. No. Since firm-specific risk can be eliminated through diversification, it does not affect the cost of equity.

**Q. Can investors expect additional returns for firm-specific risk?**

A. No. Investors who hold diversified portfolios can eliminate firm-specific risk, and consequently do not require any additional return. Since investors who choose to be less

than fully diversified must compete in the market with fully-diversified investors, the former cannot expect to be compensated for unique risk.

## V. ESTIMATING THE COST OF EQUITY

*Introduction*

**Q. Did Staff directly estimate the cost of equity for Black Mountain?**

A. No. Since Black Mountain is not a publicly traded company, Staff is unable to directly estimate Black Mountain's cost of equity due to the unavailability of financial information. Instead, Staff uses an average of a representative sample group to reduce the sample error resulting from random fluctuations in the market at the time the information is gathered.

**Q. What companies did Staff select as proxies or comparables for Black Mountain?**

A. Staff's sample consists of the following six publicly-traded water utilities: American States Water, California Water, Connecticut Water Services, Middlesex Water, Aqua America and SJW Corp. These companies were chosen because they are publicly traded and receive the majority of their earnings from regulated operations.

**Q. What models did Staff implement to estimate Black Mountain's cost of equity?**

A. Staff used two market-based models to estimate the cost of equity for Black Mountain: the DCF model and the CAPM.

**Q. Please explain why Staff chose the DCF and CAPM models.**

A. Staff chose to use the DCF and CAPM models because they are widely-recognized market-based models and have been used extensively to estimate the cost of equity. An explanation of the DCF and CAPM models follows.

*Discounted Cash Flow Model Analysis*

**Q. Please provide a brief summary of the theory upon which the DCF method of estimating the cost of equity is based.**

A. The DCF method of stock valuation is based on the theory that the value of an investment is equal to the sum of the future cash flows generated from the aforementioned investment discounted to the present time. This method uses expected dividends, market price and dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered the DCF method in the 1960s. The DCF method has become widely used to estimate the cost of equity for public utilities due to its theoretical merit and its simplicity. Staff used the financial information for the relevant six sample companies in the DCF model and averaged the results to determine an estimated cost of capital for the sample companies.

**Q. Does Staff use more than one version of the DCF Model?**

A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF Model and the multi-stage or non-constant growth DCF. The constant-growth DCF Model assumes that an entity's dividends will grow indefinitely at the same rate. The multi-stage growth DCF model assumes the dividend growth rate will change at some point in the future.

<u>The Constant-Growth DCF</u>

**Q. What is the mathematical formula used in Staff's constant-growth DCF analysis?**

A. The constant-growth DCF formula used in Staff's analysis is:

Equation 2:

$$K = \frac{D_1}{P_0} + g$$

where:

| | | |
|---|---|---|
| $K$ | = | the cost of equity |
| $D_1$ | = | the expected annual dividend |
| $P_0$ | = | the current stock price |
| $g$ | = | the expected infinite annual growth rate of dividends |

Equation 2 assumes that the entity has a constant earnings retention rate and that its earnings are expected to grow at a constant rate. According to Equation 2, a stock with a current market price of $10 per share, an expected annual dividend of $0.45 per share and an expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity of 7.5 percent, reflected by the sum of the dividend yield ($0.45/ $10 = 4.5 percent) and the 3.0 percent annual dividend growth rate.

**Q. How did Staff calculate the dividend yield component ($D_1/P_0$) of the constant-growth DCF formula?**

A. Staff calculated the yield component of the DCF formula by dividing the expected annual dividend[2] ($D_1$) by the spot stock price ($P_0$) after the close of the market August 26, 2009, as reported by *MSN Money*.

**Q. Why did Staff use the August 26, 2009, spot price rather than a historical average stock price to calculate the dividend yield component of the DCF formula?**

A. Current, rather than historic, market stock price is used in order to be consistent with finance theory, i.e., the efficient market hypothesis. The efficient market hypothesis asserts that the current stock price reflects all available information on a stock including

[2] Value Line Summary & Index. 08-26-09

investors' expectations of future returns. Use of a historical average of stock prices illogically discounts the most recent information in favor of less recent information. The latter is stale and is representative of underlying conditions that may have changed.

**Q. How did Staff estimate the dividend growth (g) component of the constant-growth DCF model represented by Equation 2?**

A. The dividend growth component used by Staff is determined by the average of six different estimation methods as shown in Schedule JCM-8. Staff calculated historical and projected growth estimates on dividend-per-share ("DPS")[3], earnings-per-share ("EPS")[4] and sustainable growth bases.

**Q. Why did Staff examine EPS growth to estimate the dividend growth component of the constant-growth DCF model?**

A. Historic and projected EPS growth are used because dividends are related to earnings. Dividend distributions may exceed earnings in the short run, but cannot continue indefinitely. In the long term, dividend distributions are dependent on earnings.

**Q. How did Staff estimate historical DPS growth?**

A. Staff estimated historical DPS growth by calculating the average rate of growth in DPS of the sample water companies from 1998 to 2008. The results of that calculation are shown in Schedule JCM-5. Staff calculated an average historical DPS growth rate of 3.1 percent for the sample water utilities for the aforementioned period.

[3] Derived from information provided by *Value Line*
[4] Derived from information provided by *Value Line*

**Q. How did Staff estimate the projected DPS growth?**

A. Staff calculated an average of the projected DPS growth rates for the sample water utilities from *Value Line*. The average projected DPS growth rate is 4.3 percent, as shown in Schedule JCM-5.

**Q. How did Staff calculate the historical EPS growth rate?**

A. Staff estimated historical EPS growth by calculating the average rate of growth in EPS of the sample water companies from 1998 to 2008. Staff calculated an average historical EPS growth rate of 3.4 percent for the sample water utilities for the aforementioned period, as shown in Schedule JCM-5.

**Q. How did Staff estimate the projected EPS growth?**

A. Staff calculated an average of the projected EPS growth rates for the sample water utilities from *Value Line*. The average projected EPS growth rate is 9.7 percent, as shown in Schedule JCM-5.

**Q. How does Staff calculate its historical and projected sustainable growth rates?**

A. Historical and projected sustainable growth rates are calculated by adding their respective retention growth rate terms (br) to their respective stock financing growth rate terms (vs), as shown in Schedule JCM-6.

**Q. What is retention growth?**

A. Retention growth is the growth in dividends due to the retention of earnings. The retention growth concept is based on the theory that dividend growth cannot be achieved unless the company retains and reinvests some of its earnings. The retention growth is used in Staff's calculation of sustainable growth shown in Schedule JCM-6.

**Q. What is the formula for the retention growth rate?**

A. The retention growth rate is the product of the retention ratio and the book/accounting return on equity. The retention growth rate formula is:

Equation 3:

$$\text{Retention Growth Rate} = br$$

where: $b$ = the retention ratio (1 – dividend payout ratio)
$r$ = the accounting/book return on common equity

**Q. How did Staff calculate the average historical retention growth rate (br) for the sample water utilities?**

A. Staff calculated the historical retention rates by averaging the retention rates for the sample water companies from 1999 to 2008. The historical average retention (br) growth for the sample water utilities is 3.0 percent, as shown in Schedule JCM-6.

**Q. How did Staff determine projected retention growth rate (br) for the sample water utilities?**

A. Staff used the retention growth projections for the sample water utilities for the period 2012 to 2014 from *Value Line*. The projected average retention growth rate for the sample water utilities is 6.0 percent, as shown in Schedule JCM-6.

**Q. When can retention growth provide a reasonable estimate of future dividend growth?**

A. The retention growth rate is a reasonable estimate of future dividend growth when the retention ratio is reasonably constant and the entity's market price to book value ("market-to-book ratio") is expected to be 1.0. The average retention ratio has been reasonably

constant in recent years. However, the market-to-book ratio for the sample water utilities is 1.7, notably higher than 1.0, as shown in Schedule JCM-7.

**Q. Is there any financial implication of a market-to-book ratio greater than 1.0?**

A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to earn an accounting/book return on its equity that exceeds its cost of equity. The relationship between required returns and expected cash flows is readily observed in the fixed securities market. For example, assume an entity contemplating issuance of bonds with a face value of $10 million at either 6 percent or 8 percent, and thus, paying annual interest of $600,000 or $800,000, respectively. Regardless of investors' required return on similar bonds, investors will be willing to pay more for the bonds if issued at 8 percent than if the bonds are issued at 6 percent. For example, if the current interest rate required by investors is 6 percent, then they would bid $10 million for the 6 percent bonds and more than $10 million for the 8 percent bonds. Similarly, if equity investors require a 9 percent return and expect an entity to earn accounting/book returns of 13 percent, the market will bid up the price of the entity's stock to provide the required return of 9 percent.

**Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of equity analyses in recent years?**

A. Staff has assumed that investors expect the market-to-book ratio to remain greater than 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the retention ratio (br) term to calculate its historical and projected sustainable growth rates.

**Q. Do the historical and projected sustainable growth rates Staff uses to develop its DCF cost of equity in this case continue to include a stock financing growth rate term?**

A. Yes.

**Q. What is stock financing growth?**

A. Stock financing growth is the growth in an entity's dividends due to the sale of stock by that entity. Stock financing growth is a concept derived by Myron Gordon and discussed in his book *The Cost of Capital to a Public Utility.*[5] Stock financing growth is the product of the fraction of the funds raised from the sale of stock that accrues to existing shareholders (v) and the fraction resulting from dividing the funds raised from the sale of stock by the existing common equity(s).

**Q. What is the mathematical formula for the stock financing growth rate?**

A. The mathematical formula for stock financing growth is:

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where: $v$ = Fraction of the funds raised from the sale of stock that accrues to existing shareholders

$s$ = Funds raised from the sale of stock as a fraction of the existing common equity

**Q. How is the variable *v* presented above calculated?**

A. Variable *v* is calculated as follows:

[5] Gordon, Myron J. *The Cost of Capital to a Public Utility.* MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

Equation 5:

$$v = 1 - \left( \frac{book\ value}{market\ value} \right)$$

For example, assume that a share of stock has a $30 book value and is selling for $45. Then, to find the value of *v*, the formula is applied:

$$v = 1 - \left( \frac{30}{45} \right)$$

In this example, *v* is equal to 0.33.

**Q. How is the variable *s* presented above calculated?**

A. Variable *s* is calculated as follows:

Equation 6:

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

For example, assume that an entity has $150 in existing equity, and it sells $30 of stock. Then, to find the value of *s*, the formula is applied:

$$s = \left( \frac{30}{150} \right)$$

In this example, *s* is equal to 20.0 percent.

**Q. What is the *vs* term when the market-to-book ratio is equal to 1.0?**

A. A market-to-book ratio equal to 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment equal to the cost of equity. When the

market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders, i.e., the term *v* is equal to zero (0.0). Consequently, the *vs* term is also equal to zero (0.0). When stock financing growth is zero, dividend growth depends solely on the *br* term.

**Q. What is the effect of the *vs* term when the market-to-book ratio is greater than 1.0?**

A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment greater than the cost of equity. Equation 5 shows that when the market-to-book ratio is greater than 1.0 the *v* term is also greater than zero. The excess by which new shares are issued and sold over book value per share of outstanding stock is a contribution that accrues to existing stockholders in the form of a higher book value. The resulting higher book value leads to higher expected earnings and dividends. Continued growth from the *vs* term is dependent upon the continued issuance and sale of additional shares at a price that exceeds book value per share.

**Q. What *vs* estimate did Staff calculate from its analysis of the sample water utilities?**

A. Staff estimated an average stock financing growth of 2.0 percent for the sample water utilities, as shown in Schedule JCM-6.

**Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result of investors expecting earnings to exceed the cost of equity capital and the entity subsequently experienced newly authorized rates equal to its cost of equity capital?**

A. Market pressure on the entity's stock price to reflect the change in future expected cash flows would cause the market-to-book ratio to move toward 1.0.

**Q. What would the impact be if the average market-to-book ratio of the sample water utilities fell to 1.0 due to authorized ROEs equaling the cost of equity?**

A. In that case, Staff's inclusion of the *vs* term in the constant-growth DCF analysis would result in an overestimation of its sustainable dividend growth rate and the resulting DCF ROE estimate. Inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed 1.0 and that the water utilities will continue to issue and sell stock at prices above book value with the effect of benefitting existing shareholders. If the market-to-book ratio declines to 1.0, the stock financing term is not necessary.

**Q. What are Staff's historical and projected sustainable growth rates?**

A. Staff's estimated historical sustainable growth rate is 5.1 percent based on an analysis of earnings retention for the sample water companies. Staff's projected sustainable growth rate is 9.0 percent based on retention growth projected by *Value Line*. Schedule JCM-6 presents Staff's estimates of the sustainable growth rate.

**Q. What is Staff's expected infinite annual growth rate in dividends?**

A. Staff's expected infinite annual growth rate in dividends is 5.8 percent, which is the average of historical and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the expected infinite annual growth rate in dividends is shown in Schedule JCM-8.

**Q. What is Staff's constant-growth DCF estimate?**

A. Staff's constant-growth DCF estimate is 9.4 percent as shown in Schedule JCM-3.

*The Multi-Stage DCF*

**Q. Why did Staff implement the multi-stage DCF model to estimate Black Mountain's cost of equity?**

A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends may not grow at a constant rate. The multi-stage DCF uses two stages of growth. The first stage is four years followed by the second constant growth stage.

**Q. What is the mathematical formula for the multi-stage DCF?**

A. The multi-stage DCF formula is shown in the following equation:

Equation 7:

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where:
$P_0$ = current stock price
$D_t$ = dividends expected during stage 1
$K$ = cost of equity
$n$ = years of non – constant growth
$D_n$ = dividend expected in year n
$g_n$ = constant rate of growth expected after year n

**Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?**

A. First, Staff projected future dividends for each of the sample water utilities using near-term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which equates the present value of the forecasted dividends to the current stock price for each of the sample water utilities. Lastly, Staff calculated an average of the individual sample company cost of equity estimates.

**Q. How did Staff calculate near-term (stage-1) growth?**

A. The stage-1 growth rate is based on *Value Lines'* projected dividends for the next twelve months, when available, and on the average dividend growth rate (5.8 percent) calculated in Staff's constant DCF analysis for the remainder of the stage.

**Q. How did Staff estimate long-term (stage-2) growth?**

A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in GDP from 1929 to 2008.[6] Using the GDP growth rate assumes that the water utility industry is expected to grow at the same rate as the overall economy.

**Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?**

A. Staff used 6.7 percent to estimate the stage-2 growth rate.

**Q. What is Staff's multi-stage DCF estimate?**

A. Staff's multi-stage DCF estimate is 10.2 percent, as shown in Schedule JCM-3.

**Q. What is Staff's overall DCF estimate?**

A. Staff's overall DCF estimate is 9.8 percent. Staff calculated the overall DCF estimate by averaging the constant growth DCF (9.4%) and multi-stage DCF (10.2%) estimates, as shown in Schedule JCM-3.

*Capital Asset Pricing Model*

**Q. Please describe the CAPM.**

A. The CAPM is used to determine the prices of securities in a competitive market. The CAPM model describes the relationship between a security's investment risk and its

[6] www.bea.doc.gov

market rate of return. Under the CAPM an investor requires the expected return of a security to equal the rate on a risk-free security plus a risk premium. If the investor's expected return does not meet or beat the required return, the investment is not economically justified. The model also assumes that investors will sufficiently diversify their investments to eliminate any non-systematic or unique risk.[7] In 1990, Professors Harry Markowitz, William Sharpe, and Merton Miller earned the Nobel Prize in Economic Sciences for their contribution to the development of the CAPM.

**Q. Did Staff use the same sample water utilities in its CAPM and DCF cost of equity estimation analyses?**

A. Yes. Staff's CAPM cost of equity estimation analysis uses the same sample water companies as its DCF cost of equity estimation analysis.

**Q. What is the mathematical formula for the CAPM?**

A. The mathematical formula for the CAPM is:

Equation 8:

$$K = R_f + \beta (R_m - R_f)$$

where:

| | | |
|---|---|---|
| $R_f$ | = | risk free rate |
| $R_m$ | = | return on market |
| $\beta$ | = | beta |
| $R_m - R_f$ | = | market risk premium |
| $K$ | = | expected return |

[7] The CAPM makes the following assumptions: 1) single holding period; 2) perfect and competitive securities market; 3) no transaction costs; 4) no restrictions on short selling or borrowing; 5) the existence of a risk-free rate; and 6) homogeneous expectations.

The equation shows that the expected return (K) on a risky asset is equal to the risk-free interest rate ($R_f$) plus the product of the market risk premium ("Rp") ($R_m - R_f$) multiplied by beta ($\beta$) where beta represents the riskiness of the investment relative to the market.

**Q. What is the risk free rate?**

A. The risk free rate is the rate of return of an investment with zero risk.

**Q. How does Staff estimate the risk-free rate of interest in its historical market risk premium CAPM method?**

A. Staff uses two calculations for estimates of the risk-free rate of interest. Staff uses the average of three (five-, seven-, and ten-year) intermediate-term U.S. Treasury securities' spot rates for its historical market risk premium CAPM cost of equity estimation, and the 30-year U.S. Treasury bond spot rate for its current market risk premium CAPM cost of equity estimation. U.S. Treasuries are largely verifiable and readily available.

**Q. What does beta measure?**

A. Beta measures the volatility, or systematic risk, of a security relative to the market. Since systematic risk cannot be diversified away, it is the only risk that is relevant when estimating a security's required return. Using a baseline market beta of 1.0, a security with a beta less than 1.0 will be less volatile than the market. A security with a beta greater than 1.0 will be more volatile than the market.

**Q. How did Staff estimate Black Mountain's beta?**

A. Staff used the average of the *Value Line* betas for the sample water utilities as a proxy for Black Mountain's beta. Schedule JCM-7 shows the *Value Line* betas for each of the sample water utilities. The 0.82 average beta for the sample water utilities is Staff's

estimated beta for Black Mountain. A security with a 0.82 beta has less volatility than the market.

**Q. Please describe expected market risk premium ($R_m - R_f$)?**

A. The expected market risk premium is the expected return on the market above the risk-free rate. Simplified, it is the return an investor expects as compensation for market risk.

**Q. What did Staff use for the market risk premium?**

A. Staff uses two calculations for the market risk premium: 1) an historical market risk premium and 2) a current market risk premium.

**Q. How did Staff calculate an estimate for the historical market risk premium?**

A. Staff uses the intermediate-term government bond income returns published in the Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation 2008 Yearbook* to calculate the historical market risk premium. Ibbotson Associates calculates the historical risk premium by averaging the historical arithmetic differences between the S&P 500 and the intermediate-term government bond income returns for the period 1926-2008. Staff's historical market risk premium estimate is 6.9 percent, as shown in Schedule JCM-3.

**Q. How did Staff calculate an estimate for the current market risk premium?**

A. Staff solves equation 8 above to arrive at a market risk premium using a DCF-derived expected return (K) of 14.67 (2.2 + 12.47[8]) percent using the expected dividend yield (2.2 percent over the next twelve months) and the annual per share growth rate (12.47 percent) that *Value Line* projects for all dividend-paying stocks under its review[9] along with the

[8] The three to five year price appreciation is 60%. $1.60^{0.25} - 1 = 12.47\%$
[9] September 4, 2009 issue date.

current long-term risk-free rate (30-year Treasury note at 4.20 percent) and the market's average beta of 1.0. Staff calculated the current market risk premium as 10.47.[10]

**Q. How are the historical market risk premium and current market risk premium estimates used?**

A. Each is used to calculate a CAPM cost of equity estimate, i.e., Staff calculated an historical market risk premium CAPM cost of equity estimate and a current market risk premium CAPM cost of equity estimate.

**Q. What is the result of Staff's historical market risk premium CAPM and current market risk premium cost of equity estimations?**

A. Staff's cost of equity estimates are 8.7 percent using the historical market risk premium CAPM and 12.7 using the current market risk premium CAPM.

**Q. What is Staff's overall CAPM estimate?**

A. Staff's overall CAPM cost of equity estimate is 10.7 percent which is the average of the historical market risk premium CAPM (8.7 percent) and the current market risk premium CAPM (12.7 percent) estimates, as shown in Schedule JCM-3.

## VI. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS

**Q. What is the result of Staff's constant-growth DCF analysis to estimate the cost of equity to the sample water utilities?**

A. Schedule JCM-3 shows the result of Staff's constant-growth DCF analysis. The result of Staff's constant-growth DCF analysis is as follows:

[10] 14.67% = 4.20% + (1) (10.47%)

k = 3.6% + 5.8%

k = **9.4%**

Staff's constant-growth DCF estimate of the cost of equity to the sample water utilities is 9.4 percent.

**Q. What is the result of Staff's multi-stage DCF analysis to estimate the cost of equity for the sample utilities?**

A. Schedule JCM-9 shows the result of Staff's multi-stage DCF analysis. The result of Staff's multi-stage DCF analysis is:

| **Company** | **Equity Cost Estimate (k)** |
|---|---|
| American States Water | 9.6% |
| California Water | 9.8% |
| Aqua America | 9.9% |
| Connecticut Water | 10.8% |
| Middlesex Water | 11.4% |
| SJW Corp | 9.6% |
| **Average** | **10.2%** |

Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 10.2 percent.

**Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?**

A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 9.8 percent. Staff's overall DCF estimate was calculated by averaging Staff's constant growth DCF and Staff's multi-stage DCF estimates, as shown in Schedule JCM-3.

**Q. What is the result of Staff's historical market risk premium CAPM analysis to estimate of the cost of equity for the sample utilities?**

A. Schedule JCM-3 shows the result of Staff's CAPM analysis using the historical risk premium estimate. The result is as follows:

$$k = 3.0\% + 0.82 * 6.9\%$$

$$k = 8.7\%$$

Staff's CAPM estimate (using the historical market risk premium) of the cost of equity to the sample water utilities is 8.7 percent.

**Q. What is the result of Staff's current market risk premium CAPM analysis to estimate the cost of equity for the sample utilities?**

A. Schedule JCM-3 shows the result of Staff's CAPM Analysis using the current market risk premium estimate. The result is:

$$k = 4.2\% + 0.82 * 10.5\%$$

$$k = 12.7\%$$

Staff's CAPM estimate (using the current market risk premium) of the cost of equity to the sample water utilities is 12.7 percent.

**Q. What is Staff's overall CAPM estimate of the cost of equity for the sample utilities?**

A. Staff's overall CAPM estimate for the sample utilities is 10.7 percent. Staff's overall CAPM estimate is the average of the historical market risk premium CAPM (8.7 percent) and the current market risk premium CAPM (12.7 percent) estimates, as shown in Schedule JCM-3.

**Q. Please summarize the results of Staff's cost of equity analysis for the sample utilities.**

A. The following table shows the results of Staff's cost of equity analysis:

**Table 2**

| Method | Estimate |
|---|---|
| Average DCF Estimate | 9.8% |
| Average CAPM Estimate | 10.7% |
| **Overall Average** | **10.3%** |

Staff's average estimate of the cost of equity to the sample water utilities is 10.3 percent.

## VII. FINAL COST OF EQUITY ESTIMATES FOR BLACK MOUNTAIN

**Q. Do Black Mountain's loans affect its cost of equity despite their recognition as operating expenses for rate-making purposes?**

A. Yes. An entity's financial risk increases with increased leverage placing upward pressure on its cost of equity, regardless of the rate-making recovery mechanism. The average capital structure for the sample water utilities is composed of 49.8 percent equity and 50.2 percent debt, as shown on Staff Schedule JCM-4. Black Mountain's actual capital structure is composed of 78.4 percent equity and 21.6 percent debt. In this case, since Black Mountain's capital structure is less leveraged than that of the average sample water utilities' capital structure, its stockholders bear less financial risk than the sample water utilities. Accordingly, Black Mountain's cost of equity is lower than the sample water utilities.

**Q. What method does Staff use to calculate the effect on the cost of equity capital of the different financial risks posed by Black Mountain versus the sample companies?**

A. Staff uses the methodology developed by Professor Robert Hamada of the University of Chicago, which incorporates capital structure theory with the CAPM, to estimate the effect of Black Mountain's capital structure on its cost of equity. Staff calculated a financial risk adjustment for Black Mountain of negative 70 basis points based on the Company's actual capital structure of 78.4 percent equity and 21.6 percent debt in order to reflect the Company's actual financial risk. Black Mountain's cost of equity adjusted for financial risk (9.6 percent) can be determined by subtracting this 0.7 percent financial risk adjustment from Staff's average estimate of the cost of equity to the sample water utilities (10.3 percent).

**Q. Does Staff's 70 basis point downward financial risk adjustment to the cost of equity reflect the full downward measure to the cost of equity due to difference in financial risk in Black Mountain's capital structure compared to the sample water utilities?**

A. No. Staff calculated its recommended 70 basis point downward financial risk adjustment assuming that the sample companies had a capital structure comprised of 60 percent equity and 40 percent debt instead of the actual average capital structure for the sample companies and assuming the Company's actual capital structure composed of 78.4 percent equity and 21.6 percent debt instead of the Company's ratemaking capital structure composed of 100.0 percent equity and 0.0 percent debt. If Staff had measured the financial risk adjustment using 100 percent equity for the Company's capital structure and 60 percent equity for the sample companies, the downward financial risk adjustment would have been 120 basis points. The calculated downward financial risk adjustment would have been greater than 120 basis points if measured using 100 percent equity for the Company's capital structure and the sample companies' actual average equity of 49.8

percent. Staff measured the financial risk adjustment assuming the 60 percent equity for the sample companies to recognize that a capital structure composed of 60 percent equity and 40 percent debt is reasonable, even though it is less leveraged than that of the sample companies, and to encourage the Company to maintain a healthy capital structure.

**Q. What is Staff's ROE estimate for Black Mountain?**

A. Staff determined an ROE estimate of 10.3 percent for the Applicant based on cost of equity estimates for the sample companies ranging from 9.8 percent for the CAPM to 10.7 percent for the DCF. Staff is recommending adoption of a 70 basis point downward financial risk adjustment to 9.6 percent.

## VIII. RATE OF RETURN RECOMMENDATION

**Q. What overall rate of return did Staff determine for Black Mountain?**

A. Staff determined a 9.6 percent ROR for the Applicant, as shown in Schedule JCM-1 and the following table:

**Table 3**

| | Weight | Cost | Weighted Cost |
|---|---|---|---|
| Long-term Debt | 0.0% | 9.4% | 0.0% |
| Common Equity | 100.0% | 9.6% | 9.6% |
| **Overall ROR** | | | **9.6%** |

## IX. STAFF RESPONSE TO APPLICANT'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA

**Q. Please summarize Mr. Bourassa's analyses and recommendations.**

A. Mr. Bourassa recommends a 12.8 percent ROE based on analyses for single and multi-stage DCF models, as well as historical and current market risk premium CAPM for the same sample of water companies selected by Staff. Mr. Bourassa also asserts that Black Mountain faces additional risks not captured by the market models, such as regulatory and financial risk, and he concludes that 12.8 percent ROE presents a reasonable balance resulting from his analyses. Mr. Bourassa also proposes 12.8 percent for the overall ROR since his capital structure consists of 100 percent equity.

Constant-Growth DCF

**Q. Does Staff have any comments on Mr. Bourassa's sole reliance on analysts' forecasts to estimate DPS growth in his constant growth DCF estimates?**

A. Yes. Generally, analysts' forecasts are known to be overly optimistic. Sole use of analysts' forecasts to calculate the growth in dividends (g) causes inflated growth, and consequently, inflated cost of equity estimates. Also, relying only on analysts' forecasts of earnings growth to forecast DPS is inappropriate because it assumes that investors do not look at other relevant information such as past dividend and earnings growth.

**Q. Does Staff have any comments on the study cited by Mr. Bourassa, conducted by David A. Gordon, Myron J. Gordon and Lawrence I. Gould,[11] that he asserts supports exclusive use of analysts' forecasts in the DCF model?**

A. Yes. The article cited by Mr. Bourassa does not conclude that investors ignore past growth when pricing stocks. Instead, the article describes more generally that methods exclusively using analysts' forecasts are "popular or attractive models;" but the article does not support the conclusion that these forecasts should be used alone.

**Q. Does Professor Gordon recommend relying exclusively on analysts' forecasts as the measure of growth in the DCF model?**

A. No. Subsequent to the study cited by Mr. Bourassa,[12] Professor Gordon provided the keynote address at the 30th Financial Forum of the Society of Utility and Regulatory Financial Analysts, in which he stated:

> *I understand that companies coming before regulatory agencies liked and advocated the high growth rates in security analyst forecasts for arriving at their cost of equity capital. Instead of rejecting these forecasts, I understand that FERC and other regulatory agencies have decided to compromise with them. In particular, in arriving at the cost of equity for company X, the FERC has decided to arrive at the growth rate in my dividend growth model by using an average of two growth rates. One is security analysts forecast of the short-term growth rate in earnings provided by IBES or Value Line and the other a more long run and typically lower figure such as the past growth in GNP.*
>
> *Such an average can be questioned on various grounds. However, my judgment is that between the short-term forecast alone and its*

[11] Gordon, David A., Myron J. Gordon, Lawrence I. Gould. "Choice Among Methods of Estimating Share Yield." *The Journal of Portfolio Management.* Spring 1989. pp. 50-55. (Bourassa's direct testimony, page 36, footnote.)

[12] Ibid.

> *average with the past growth rate in GNP, the latter may be a more reasonable figure.*[13] (Emphasis added)

Simply stated, Professor Gordon would temper the typically higher analysts' forecasts with the typically lower GNP growth rate by averaging the two.

**Q. How does Staff respond to Mr. Bourassa's statement, "Logically, in estimating future growth, financial institutions and analyst have taken into account all relevant historical information on a company as well as other more recent information. To the extent that past results provide useful indications of future growth prospects, analysts' forecasts would already incorporate that information."? (Bourassa's Direct Testimony, Page 32, line 6-10).**

A. The appropriate growth rate to use in the DCF formula is the dividend growth rate expected by *investors*, not by analysts. Therefore, while analysts may have considered historical measures of growth, it is reasonable to assume that investors rely to some extent on past growth as well. This calls for consideration of both analysts' forecasts and past growth.

**Q. Does Staff have any other evidence to support its assertion that exclusive reliance on analysts' forecasts of earnings growth in the DCF model would result in inflated cost of equity estimates?**

A. Yes. Experts in the financial community have commented on the optimism in analysts' forecasts of future earnings.[14] A study cited by David Dreman in his book *Contrarian*

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[13] Gordon, M. J. Keynote Address at the 30th Financial Forum of the Society of Utility and Regulatory Financial Analysts. May 8, 1998. Transparency 3.

[14] See Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. p. 100. Dreman, David. *Contrarian Investment Strategies: The Next Generation*. 1998. Simon & Schuster. New York. pp. 97-98. Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175.
Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

*Investment Strategies: The Next Generation* found that *Value Line* analysts were optimistic in their forecasts by 9 percent annually, on average, for the 1987 – 1989 period. Another study conducted by David Dreman found that, between 1982 and 1997, analysts overestimated the growth of earnings of companies in the S&P 500 by 188 percent.

Also, Burton Malkiel of Princeton University studied the one-year and five-year earnings forecasts made by some of the most respected names in the investment business. His results showed that the five-year estimates of professional analysts, when compared with actual earnings growth rates, were much more inaccurate than the predictions from several naïve forecasting models, such as the long-run rate of growth of national income. In the following excerpt from Professor Malkiel's book A Random Walk Down Wall Street, he discusses the results of his study:

> *When confronted with the poor record of their five-year growth estimates, the security analysts honestly, if sheepishly, admitted that five years ahead is really too far in advance to make reliable projections. They protested that although long-term projections are admittedly important, they really ought to be judged on their ability to project earnings changes one year ahead. Believe it or not, it turned out that their one-year forecasts were even worse than their five-year projections.*
>
> *The analysts fought back gamely. They complained that it was unfair to judge their performance on a wide cross section of industries, because earnings for high-tech firms and various "cyclical" companies are notoriously hard to forecast. "Try us on utilities," one analyst confidently asserted. At the time they were considered among the most stable group of companies because of government regulation. So we tried it and they didn't like it. Even the forecasts for the stable utilities were far off the mark.*[15] (Emphasis added)

[15] Malkiel, Burton G. A Random Walk Down Wall Street. 2003. W.W. Norton & Co. New York. p. 175

**Q. Are investors aware of the problems related to analysts' forecasts?**

A. Yes. In addition to books, there are numerous published articles appearing in *The Wall Street Journal* and other financial publications that cast doubt as to how accurate research analysts are in their forecasts.[16] Investors, being keenly aware of these inherent biases in forecasts, will use other methods to assess future growth.

**Q. Should DPS growth be considered in a DCF analysis?**

A. Yes. As previously stated in Section V of this testimony, the current market price of a stock is equal to the present value of all expected future dividends, not future earnings. Professor Jeremy Siegel from the Wharton School of Finance stated:

> *Note that the price of the stock is always equal to the present value of all future dividends and not the present value of future earnings. Earnings not paid to investors can have value only if they are paid as dividends or other cash disbursements at a later date. Valuing stock as the present discounted value of future earnings is manifestly wrong and greatly overstates the value of the firm.*[17]

In other words, investors pay attention to earnings as long as they are paid as dividends. Earnings can easily be overstated, but if investors do not receive dividends or other cash disbursement at a later date, then such earnings are meaningless.

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[16] See Smith, Randall & Craig, Suzanne. "Big Firms Had Research Ploy: Quiet Payments Among Rivals." *The Wall Street Journal.* April 30, 2003. Brown, Ken. "Analysts: Still Coming Up Rosy." *The Wall Street Journal.* January 27, 2003. p. C1. Karmin, Craig. "Profit Forecasts Become Anybody's Guess." *The Wall Street Journal.* January 21, 2003. p. C1. Gasparino, Charles. "Merrill Lynch Investigation Widens." *The Wall Street Journal.* April 11, 2002. p. C4. Elstein, Aaron. "Earnings Estimates Are All Over the Map." *The Wall Street Journal.* August 2, 2001. p. C1. Dreman, David. "Don't Count on those Earnings Forecasts." *Forbes.* January 26, 1998. p. 110.

[17] Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. P. 93.

Multi-Stage DCF

**Q. Does Staff have any comments on Mr. Bourassa's sole reliance on forecasted earnings growth for the near-term ("Stage -1 growth") in his multi-stage DCF?**

A. Yes. As previously discussed, exclusive reliance on forecasted earnings growth for the near-term (Stage-1 growth) is inappropriate since analysts forecasts of earnings growth are known to be overly optimistic. Reliance on forecasted earnings growth, to the exclusion of historic EPS and historical and projected DPS, likely results in inflated cost of equity estimates.

Firm-Specific Risk

**Q. What is Staff's response to Mr. Bourassa's contention that the market data provided by the sample water utilities does not capture all of the market risk associated with Black Mountain due to Arizona regulatory requirements use of historical test years and limited out of period adjustment recognition?[18]**

A. The examples cited by Mr. Bourassa are examples of firm-specific or unique risks. Existence of firm-specific risk does not necessarily indicate that a company has more total risk than others, as all companies have firm-specific risks. Moreover, as previously discussed, the market does not compensate investors for firm-specific risk because that risk can be eliminated through diversification.

[18] Direct Testimony of Thomas J. Bourassa, Black Mountain Sewer Corporation, Docket No. SW-02361A-08-0609, page 19 lines 25-26

**Q. Does Staff have a response to Mr. Bourassa's assertion that a good argument can be made that Black Mountain is not comparable to the six publicly traded water utilities in the sample group due to a difference in size?**[19]

A. The Commission has previously ruled that firm size does not warrant recognition of a risk premium. In Decision No. 64282, dated December 28, 2001, for Arizona Water, the Commission stated, "We do not agree with the Company's proposal to assign a risk premium to Arizona Water based on its size relative to other publicly traded water utilities...." In Decision No. 64727, dated April 17, 2002, for Black Mountain Gas, the Commission agreed with Staff that "the 'firm size phenomenon' does not exist for regulated utilities, and that therefore there is no need to adjust for risk for small firm size in utility rate regulation." Further, as previously noted, Black Mountain's ultimate parent, Algonquin Power Income Fund, has access to the capital markets.

## X. CONCLUSION

**Q. Please summarize Staff's recommendations.**

A. Staff recommends that the Commission adopt a capital structure for Black Mountain in this proceeding composed of 0.0 percent debt and 100.0 percent equity.

Staff also recommends that the Commission adopt a 9.6 percent ROR for the Applicant, based on Staff's cost of equity estimates that range from 9.8 percent to 10.7 percent for the sample companies and to reflect a 70 basis point downward financial risk adjustment.

**Q. Does this conclude your Direct Testimony?**

A. Yes, it does.

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[19] Direct Testimony of Thomas J. Bourassa, Black Mountain Sewer Corporation, Docket No. SW-02361A-08-0609, page 22 lines 20-21

**Black Mountain Sewer Cost of Capital Calculation**
Capital Structure
And Weighted Average Cost of Capital
Staff Recommended and Company Proposed

| [A] | [B] | [C] | [D] |
|---|---|---|---|
| Description | Weight (%) | Cost | Weighted Cost |
| Staff Recommended Structure | | | |
| Debt | 0.0% | 9.4% | 0.0% |
| Common Equity | 100.0% | 9.6% | 9.6% |
| Weighted Average Cost of Capital | | | **9.6%** |
| Company Proposed Structure | | | |
| Debt | 0.0% | 9.4% | 0.0% |
| Common Equity | 100.0% | 12.8% | 12.8% |
| Weighted Average Cost of Capital | | | **12.8%** |

[D] : [B] x [C]

Supporting Schedules: JCM-3 and JCM-4.

Intentionally left blank

Black Mountain Sewer Cost of Capital Calculation
Final Cost of Equity Estimates
Sample Water Utilities

| [A] | [B] | | [C] | | [D] | | [E] |
|---|---|---|---|---|---|---|---|
| **DCF Method** | | | $D_1/P_0$ [1] | + | g [2] | = | k |
| Constant Growth DCF Estimate | | | 3.6% | + | 5.8% | = | 9.4% |
| Multi-Stage DCF Estimate | | | | | | = | 10.2% |
| **Average of DCF Estimates** | | | | | | | **9.8%** |
| **CAPM Method** | Rf | + | β [5] | x | (Rp) | = | k |
| Historical Market Risk Premium [3] | 3.0% | + | 0.82 | x | 6.9% [6] | = | 8.7% |
| Current Market Risk Premium [4] | 4.2% | + | 0.82 | x | 10.5% [7] | = | 12.7% |
| **Average of CAPM Estimates** | | | | | | | **10.7%** |
| | | | | | **Average** | | **10.3%** |
| | | | | | Financial risk adjustment | | -0.7% |
| | | | | | **Total** | | **9.6%** |

1 MSN Money and Value Line

2 Schedule JCM-8

3 Risk-free rate (Rf) for 5, 7, and 10 year Treasury rates from the U.S. Treasury Department at www.ustreas.gov

4 Risk-free rate (Rf) for 30 Year Treasury bond rate from the U.S. Treasury Department at www.ustreas.gov

5 Value Line

6 Historical Market Risk Premium (Rp) calculated from Ibbotson Associates SBBI 2009 Yearbook data

7 Testimony

Black Mountain Sewer Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

| [A] | [B] | [C] | [D] |
|---|---|---|---|
| Company | Debt | Common Equity | Total |
| American States Water | 52.9% | 47.1% | 100.0% |
| California Water | 44.0% | 56.0% | 100.0% |
| Aqua America | 54.3% | 45.7% | 100.0% |
| Connecticut Water | 50.2% | 49.8% | 100.0% |
| Middlesex Water | 52.0% | 48.0% | 100.0% |
| SJW Corp | 47.8% | 52.2% | 100.0% |
| Average Sample Water Utilities | **50.2%** | **49.8%** | **100.0%** |
| Black Mtn - Actual Capital Structure[1] | **21.6%** | **78.4%** | **100.0%** |

**Source:**
**Sample Water Companies from Value Line**

[1] **The Capital Structure for ratemaking is 0.0 percent debt and 100.0 percent equity.**

Black Mountain Sewer Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

| [A] | [B] | [C] | [D] | [E] |
|---|---|---|---|---|
| Company | Dividends Per Share 1998 to 2008 DPS[1] | Dividends Per Share Projected DPS[1] | Earnings Per Share 1998 to 2008 EPS[1] | Earnings Per Share Projected EPS[1] |
| American States Water | 1.8% | 5.1% | 3.7% | 10.9% |
| California Water | 0.9% | 2.8% | 2.7% | 6.9% |
| Aqua America | 7.0% | 5.0% | 6.2% | 11.4% |
| Connecticut Water | 1.3% | No Projection | 1.0% | No Projection |
| Middlesex Water | 2.1% | No Projection | 2.9% | No Projection |
| SJW Corp | 5.5% | No Projection | 3.0% | No Projection |
| Average Sample Water Utilities | **3.1%** | **4.3%** | **3.4%** | **9.7%** |

1 Value Line

Black Mountain Sewer Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

| [A] | [B] | [C] | [D] | [E] | [F] |
|---|---|---|---|---|---|
| Company | Retention Growth **1999 to 2008** br | Retention Growth Projected br | Stock Financing Growth vs | Sustainable Growth **1999 to 2008** br + vs | Sustainable Growth Projected br + vs |
| American States Water | 3.0% | 6.3% | 1.3% | 4.4% | 7.6% |
| California Water | 2.0% | 6.1% | 4.0% | 6.0% | 10.1% |
| Aqua America | 4.8% | 5.7% | 3.5% | 8.2% | 9.2% |
| Connecticut Water | 2.6% | No Projection | 0.8% | 3.4% | No Projection |
| Middlesex Water | 1.4% | No Projection | 2.4% | 3.8% | No Projection |
| SJW Corp | 4.5% | No Projection | 0.1% | 4.6% | No Projection |
| Average Sample Water Utilities | **3.0%** | **6.0%** | **2.0%** | **5.1%** | **9.0%** |

**[B]: Value Line**
**[C]: Value Line**
**[D]: Value Line and MSN Money**
**[E]: [B]+[D]**
**[F]: [C]+[D]**

Black Mountain Sewer Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

| [A] | [B] | [C] | [D] | [E] | [F] | [G] |
|---|---|---|---|---|---|---|
| Company | Symbol | Spot Price 8/26/2009 | Book Value | Mkt To Book | *Value Line* Beta $\beta$ | Raw Beta $\beta$ raw |
| American States Water | AWR | **33.85** | 18.52 | 1.8 | **0.80** | 0.67 |
| California Water | CWT | **37.90** | 20.89 | 1.8 | **0.80** | 0.67 |
| Aqua America | WTR | **17.28** | 9.11 | 1.9 | **0.65** | 0.45 |
| Connecticut Water | CTWS | **22.56** | 12.58 | 1.8 | **0.85** | 0.75 |
| Middlesex Water | MSEX | **15.36** | 10.83 | 1.4 | **0.80** | 0.67 |
| SJW Corp | SJW | **22.81** | 14.59 | 1.6 | **1.00** | 0.97 |
| Average | | | | **1.7** | **0.82** | **0.70** |

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Black Mountain Sewer Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

| [A] | [B] |
|---|---|
| Description | g |
| DPS Growth - Historical[1] | 3.1% |
| DPS Growth - Projected[1] | 4.3% |
| EPS Growth - Historical[1] | 3.4% |
| EPS Growth - Projected[1] | 9.7% |
| Sustainable Growth - Historical[2] | 5.1% |
| Sustainable Growth - Projected[2] | 9.0% |
| Average | **5.8%** |

1 Schedule JCM-5

2 Schedule JCM-6

Black Mountain Sewer Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

| [A] | [B] | [C] | [D] | [E] | [F] | [H] | [I] |
|---|---|---|---|---|---|---|---|
| Company | Current Mkt. Price ($P_o$)[1] 8/26/2009 | Projected Dividends[2] (Stage 1 growth) ($D_t$) $d_1$ | $d_2$ | $d_3$ | $d_4$ | Stage 2 growth[3] ($g_n$) | Equity Cost Estimate ($K$)[4] |
| American States Water | 33.9 | 1.01 | 1.07 | 1.13 | 1.20 | 6.7% | 9.6% |
| California Water | 37.9 | 1.21 | 1.28 | 1.36 | 1.44 | 6.7% | 9.8% |
| Aqua America | 17.3 | 0.56 | 0.60 | 0.63 | 0.67 | 6.7% | 9.9% |
| Connecticut Water | 22.6 | 0.94 | 1.00 | 1.05 | 1.11 | 6.7% | 10.8% |
| Middlesex Water | 15.4 | 0.74 | 0.78 | 0.83 | 0.88 | 6.7% | 11.4% |
| SJW Corp | 22.8 | 0.68 | 0.72 | 0.76 | 0.80 | 6.7% | 9.6% |

Average **10.2%**

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where : $P_0$ = current stock price
$D_t$ = dividends expected during stage 1
$K$ = cost of equity
$n$ = years of non – constant growth
$D_n$ = dividend expected in year n
$g_n$ = constant rate of growth expected after year n

1 [B] see Schedule JCM-7
2 Derived from Value Line Information
3 Average annual growth in GDP 1929 - 2008 in current dollars.
4 Internal Rate of Return of Projected Dividends

EXHIBIT A-18

**BEFORE THE ARIZONA CORPORATION COMMISSION**

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
PAUL NEWMAN
Commissioner
SANDRA D. KENNEDY
Commissioner
BOB STUMP
Commissioner

| | | |
|---|---|---|
| IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY, AND FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE AND FOR CERTAIN RELATED APPROVALS BASED THEREON | ) | DOCKET NO. W-01445A-08-0440 |

DIRECT

TESTIMONY

OF

DAVID C. PARCELL

ON BEHALF OF

UTILITIES DIVISION STAFF

ARIZONA CORPORATION COMMISSION

JUNE 12, 2009

EXHIBIT
A-18
ADMIN. NOTICE

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## SCHEDULES


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## ATTACHMENT


| | |
|---|---|
| David Parcell Resume | ATTACHMENT 1 |

## INTRODUCTION

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

A. My name is David C. Parcell. I am President and Senior Economist of Technical Associates, Inc. My business address is Suite 601, 1051 East Cary Street, Richmond, Virginia 23219.

**Q. Please summarize your educational background and professional experience.**

A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia Commonwealth University. I have been a consulting economist with Technical Associates since 1970. I have provided cost of capital testimony in public utility ratemaking proceedings, dating back to 1972. In connection with this, I have previously filed testimony and/or testified in over 430 utility proceedings before more than 40 regulatory agencies in the United States and Canada. Attachment 1 provides a more complete description of my education and relevant work experience.

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

A. I have been retained by the Utilities Division Staff to evaluate the cost of capital aspects of the current filing of Arizona Water Company ("AWC" or "Company"). I have performed independent studies and am making recommendations of the current cost of capital for AWC. In addition, since AWC is a subsidiary of Utility Investment Company, I have also evaluated this entity in my analyses.

**Q. Have you prepared an Exhibit in support of your testimony?**

A. Yes, I have prepared one exhibit, made up of eleven Schedules, identified as Schedule 1 through Schedule 11. These Schedules were prepared either by me or under my direction.

The information contained in these schedules is correct to the best of my knowledge and belief.

## SUMMARY OF TESTIMONY AND RECOMMENDATIONS

**Q. What are your recommendations in this proceeding?**

A. My overall cost of capital recommendations for AWC are shown on Schedule 1 and are summarized as follows:

| | Percent | Cost | Return |
|---|---|---|---|
| Short-Term Debt | 4.80% | 3.00% | 0.14% |
| Long-Term Debt | 49.35% | 6.83% | 3.37% |
| Common Equity | 45.85% | 9.5-10.5% | 4.36-4.81% |
| Total | 100.00% | | 7.87-8.33% |
| | | | 8.10% mid-point |

AWC's application requests a return on common equity of 12.40 percent and overall rate of return of 9.81 percent. I propose a return on common equity of 10.0 percent and an overall rate of return of 8.10 percent.

**Q. Please summarize your cost analyses and related conclusions for AWC.**

A. This proceeding is concerned with AWC's regulated water utility operations in Arizona. My analyses are concerned with the Company's total cost of capital. The first step in performing an analysis of the Company's cost of capital is the development of the appropriate capital structure. AWC's proposed capital structure is comprised of 49.24 percent common equity and 50.76 percent long-term debt. This capital structure is the adjusted December 31, 2007, capital structure of the Company. I use a different capital structure in my cost of capital analyses that contains more current figures (i.e., December 31, 2008), including short-term debt.

The second step in a cost of capital calculation is a determination of the embedded cost rates of debt. AWC's application uses a long-term debt cost rate of 7.31 percent, which reflects the Company's projected cost at December 31, 2007. I have used the 6.83 percent rate of December 31, 2008, as cited in response to Staff DR 12.2. For the cost of short-term debt, I use the 3.00 percent rate cited in response to Staff DR 12.3 (although the Company does not include short-term debt in its cost of capital calculation).

The third step in the cost of capital calculation is the estimation of the cost of common equity. I have employed three recognized methodologies to estimate the cost of equity for AWC. Each of these methodologies is applied to three groups of proxy water utilities. These three methodologies and my findings are:

| | |
|---|---|
| Discounted Cash Flow | 9.0-10.5% (9.75% mid-point) |
| Capital Asset Pricing Model | 8.2-8.6% (8.4% mid-point) |
| Comparable Earnings | 9.5-10.5% (10.0% mid-point) |

Based upon these findings, I conclude that the cost of common equity for AWC is within a range of 9.5 percent to 10.5 percent. I recommend the mid-point of my cost of equity range (10.0 %).

Combining these three steps into a weighted cost of capital results in an overall rate of return range of 7.87 percent to 8.33 percent. My recommended 10.0 percent cost of equity results in an overall cost of capital of 8.10 percent.

## ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES

**Q. What are the primary economic and legal principles that establish the standards for determining a fair rate of return for a regulated utility?**

A. Public utility rates are normally established in a manner designed to allow the recovery of their costs, including capital costs. This is frequently referred to as "cost of service" ratemaking. Rates for regulated public utilities traditionally have been primarily established using the "rate base - rate of return" concept. Under this method, utilities are allowed to recover a level of operating expenses, taxes, and depreciation deemed reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of return on the assets used and useful (*i.e.*, rate base) in providing service to their customers.

The rate base is derived from the asset side of the utility's balance sheet as a dollar amount and the rate of return is developed from the liabilities/owners' equity side of the balance sheet as a percentage. The revenue impact of the cost of capital is thus derived by multiplying the rate base by the rate of return (including income taxes).

The rate of return is developed from the cost of capital, which is estimated by weighting the capital structure components (*i.e.*, debt, preferred stock, and common equity) by their percentages in the capital structure and multiplying these by their cost rates. This is also known as the weighted cost of capital.

Technically, "fair rate of return" is a legal and accounting concept that refers to an *ex post* (after the fact) earned return on an asset base, while the cost of capital is an economic and financial concept which refers to an *ex ante* (before the fact) expected or required return on a liability base. In regulatory proceedings, however, the two terms are often used interchangeably, as I have done in my testimony.

From an economic standpoint, a fair rate of return is normally interpreted to mean that an efficient and economically managed utility will be able to maintain its financial integrity, attract capital, and establish comparable returns for similar risk investments. These concepts are derived from economic and financial theory and are generally implemented using financial models and economic concepts.

Although I am not a lawyer and I do not offer a legal opinion, my testimony is based on my understanding that two United States Supreme Court decisions provide the main standards for a fair rate of return. The first decision is Bluefield Water Works and Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923). In this decision, the Court stated:

> *What annual rate will constitute **just compensation** depends upon many circumstances and must be **determined by** the **exercise of fair and enlightened judgment**, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to **earn a return** on the value of the property which it employs for the convenience of the public equal to that **generally being made** at the same time and in the same general part of the country on **investments in other business undertakings** which are **attended by corresponding risks and uncertainties**; but it has no **constitutional right to profits** such as are realized or anticipated in **highly profitable enterprises or speculative ventures**. The **return** should be reasonably sufficient to assure confidence in the **financial soundness** of the utility, and should be adequate, **under efficient and economical management**, to maintain and **support its credit** and **enable it to raise the money** necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.* **[Emphasis added.]**

It is my understanding that the Bluefield decision established the following standards for a fair rate of return: comparable earnings, financial integrity, and capital attraction. It also

noted the changing level of required returns over time as well as an underlying assumption that the utility be operated in an efficient manner.

The second decision is Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1942). In that decision, the Court stated:

> *The rate-making process under the [Natural Gas] Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the* ***investor*** *and* ***consumer interests*** *. . . . From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the* ***return*** *to the equity* ***owner*** *should be* ***commensurate*** *with* ***returns*** *on* ***investments*** *in* ***other enterprises having corresponding risks****. That return, moreover, should be sufficient to assure confidence in the* ***financial integrity*** *of the enterprise, so as to* ***maintain its credit*** *and to* ***attract capital****.* **[Emphasis added.]**

The three economic and financial parameters in the Bluefield and Hope decisions - comparable earnings, financial integrity, and capital attraction - reflect the economic criteria encompassed in the "opportunity cost" principle of economics. The opportunity cost principle provides that a utility and its investors should be afforded an opportunity (not a guarantee) to earn a return commensurate with returns they could expect to achieve on investments of similar risk. The opportunity cost principle is consistent with the fundamental premise, on which regulation rests, namely, that it is intended to act as a surrogate for competition.

I understand that because Arizona is a "Fair Value" state, Hope and Bluefield do not set forth the legal requirements applicable to determining fair rate of return in Arizona. In Simms v. Round Valley Light & Power Co., 294 P.2d 378 (1956), the Arizona Supreme

Court took exception to application of the following principle in Arizona since the Constitution mandates consideration of fair value:

> *"In the Hope case the court, in testing the reasonableness of rates fixed by the Federal Power Commission under the Natural Gas Act, 15 U.S.C.A. Section 717 et seq., after holding that congress had provided no formula by which just and reasonable rates were to be determined, ruled that it was the final result reached and not the method used in reaching the result that was controlling and that it was unimportant to 'determine the various permissible ways in which any rate base on which the return in computed might be arrived at."*

My testimony does not advocate that the Commission ignore the Simms holding in this regard, or the fair value of AWC's property, which it is required to consider under article 15, section 14 of the Arizona Constitution. Rather, I find the Hope and Bluefield decisions to be helpful in their discussion of comparable earnings, financial integrity and capital attraction. I note that AWC witness Zepp also cites the Hope and Bluefield cases as providing standards for the establishment of the fair rate of return for public utilities.

**Q. How can these parameters be employed to estimate the cost of capital for a utility?**

A. Neither the courts nor economic/financial theory have developed exact and mechanical procedures for precisely determining the cost of capital. This is the case because the cost of capital is an opportunity cost and is prospective-looking, which dictates that it must be estimated.

There are several useful models that can be employed to assist in estimating the cost of equity capital, which is the capital structure item that is the most difficult to determine. These include the Discounted Cash Flow ("DCF"), Capital Asset Pricing Model ("CAPM"), Comparable Earnings ("CE") and Risk Premium ("RP") methods. Each of

these methods (or models) differs from the others and each, if properly employed, can be a useful tool in estimating the cost of common equity for a regulated utility.

**Q. Which methods have you employed in your analyses of the cost of common equity in this proceeding?**

A. I have utilized three methodologies to determine AWC's cost of common equity: the DCF, CAPM, and CE methods. I have not employed a RP model in my analyses although, as I indicate later, my CAPM analysis is a form of the RP methodology. Each of these methodologies will be described in more detail in my testimony that follows.

## GENERAL ECONOMIC CONDITIONS

**Q. Why are economic and financial conditions important in determining the costs of capital?**

A. The costs of capital, for both fixed-cost (debt and preferred stock) components and common equity, are determined in part by current and prospective economic and financial conditions. At any given time, each of the following factors has an influence on the costs of capital: the level of economic activity (i.e., growth rate of the economy), the stage of the business cycle (i.e., recession, expansion, or transition), the level of inflation, and expected economic conditions. My understanding is that this position is consistent with the Bluefield decision that noted "[a] rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally."

**Q. What indicators of economic and financial activity have you evaluated in your analyses?**

A. I have examined several sets of economic statistics from 1975 to the present. I chose this time period because it permits the evaluation of economic conditions over three full business cycles plus the current cycle to date, allowing for an assessment of changes in long-term trends. This period also approximates the beginning and continuation of active rate case activities by public utilities.

A business cycle is commonly defined as a complete period of expansion (recovery and growth) and contraction (recession). A full business cycle is a useful and convenient period over which to measure levels and trends in long-term capital costs because it incorporates the cyclical (i.e., stage of business cycle) influences, and thus, permits a comparison of structural (or long-term) trends.

**Q. Please describe the timeframe of the three prior business cycles and the most recent cycle.**

A. The three prior complete cycles and most recent cycle cover the following periods:

| Business Cycle | Expansion Cycle | Contraction Period |
|---|---|---|
| 1975-1982 | Mar. 1975-July 1981 | Aug. 1981-Oct. 1982 |
| 1982-1991 | Nov. 1982-July 1990 | Aug. 1990-Mar. 1991 |
| 1991-2001 | Apr. 1991-Mar. 2001 | Apr. 2001-Nov. 2001 |
| Current | Dec. 2001-Nov. 2007 | Dec. 2007-Present |

Source: National Bureau of Economic, Research, "Business Cycle Expansions and Contractions."

**Q. Do you have any general observations concerning the recent trends in economic conditions and their impact on capital costs over this broad period?**

A. Yes, I do. As I will describe below, until recently the U.S. economy enjoyed general prosperity and stability over the period since the early 1980s. This period has been characterized by longer economic expansions, relatively tame contractions, relatively low and declining inflation, and declining interest rates and other capital costs. The current business cycle began in late 2001, following a somewhat modest recession earlier in the year.

Over the past two years, on the other hand, the economy has declined significantly, initially as a result of the 2007 collapse of the "sub-prime" mortgage market and related liquidity crises in the financial sector of the economy. Subsequently, this financial crisis intensified with a more broad-based decline initially based on a substantial increase in petroleum prices and a dramatic decline in the U.S. financial sector culminating with the collapse and/or bailouts of a significant number of long-standing institutions such as Bear Stearns, Lehman Brothers, Merrill Lynch, Freddie Mac, Fannie Mae, AIG and Wachovia. This crisis has been described as the worst financial crisis since the Great Depression. The U.S. and global governments are in the process of implementing unprecedented actions to attempt to correct or minimize its scope and effects. As of this time, the consequences of these governmental initiatives are unclear. There is also a universal acceptance that the economy is in a serious recession. The impact of a severe economic recession on cost of capital is very likely to be characterized by lower utility growth and declining capital costs due to a decline in corporate profits and expected earnings growth. It is clear that a serious recession also has negative impacts on AWC's customers, in terms of income levels, unemployment and higher poverty levels. In addition, it is likely that AWC's business customers are experiencing lower profits as a result of the recession.

Clearly, this is not an environment in which it is sensible to increase the profitability of a regulated company such as AWC.

**Q. Please describe recent and current economic and financial conditions and their impact on the costs of capital.**

A. Schedule 2 shows several sets of economic data. Pages 1 and 2 contain general macroeconomic statistics while pages 4 through 6 contain financial market statistics. Pages 1 and 2 show that the U.S. economy ended 2007 as the sixth year of an economic expansion although, as indicated previously, the economy was then entering a decline. This is indicated by the growth in real (i.e., adjusted for inflation) Gross Domestic Product ("GDP"), industrial production, and the increase in the unemployment rate. This most recent expansion was characterized by slower growth, in comparison to prior expansions which resulted in lower inflationary pressures and interest rates.

The rate of inflation is also shown on pages 1 and 2. As is reflected in the Consumer Price Index ("CPI"), for example, inflation rose significantly during the 1975-1982 business cycle and reached double-digit levels in 1979-1980. The rate of inflation declined substantially in 1981 and remained at or below 6.1 percent during the 1983-1991 business cycle. Since 1991, the CPI has been 4.1 percent or lower. The 0.1 percent rate of inflation in 2008 was the lowest level of the past thirty years. This is indicative of virtually no inflation, which should also be reflective of lower capital costs.

**Q. What have been the trends in interest rates?**

A. Pages 3 and 4 show several series of interest rates. Rates rose sharply to record levels in 1975-1981 when the inflation rate was high and generally rising. Interest rates declined substantially in conjunction with inflation rates throughout the remainder of the 1980s and

throughout the 1990s. Interest rates declined even further from 2000-2005 and generally recorded their lowest levels since the 1960s.

During the past several years and up until the later half of 2008, long-term interest rates remained low by historic standards. During the 2001 recession and early in the succeeding expansion, the Federal Reserve lowered interest rates (i.e., Federal Funds rate) 11 times in 2001 and twice in 2003 in an effort to stimulate the economy. Following this, the Federal Reserve increased short-term interest rates on 17 occasions between 2004 and 2006,[1] although each time by only 0.25 percent, in an attempt to ensure that any perceived inflationary expectations will not stifle continued economic growth. Nevertheless, the Federal Reserve actions did not result in a pronounced increase in long-term rates. Most recently, however, the Federal Reserve has lowered the Federal Funds rate (i.e., short-term rate) on several occasions and it is currently 0.25 percent, an all-time low. The year 2008 experienced a pronounced decline in short-term rates and long-term U.S. Treasury Securities yields, and an increase in utility bond yields, reflecting a "flight to safety."

**Q. What have been the trends in common share prices?**

A. Pages 5 and 6 show several series of common stock prices and ratios. These ratios indicate that share prices were essentially stagnant during the high inflation/interest rate environment of the late 1970s and early 1980s. On the other hand, the 1983-1991 business cycle and the most recent cycles witnessed a significant upward trend in stock prices. Since the beginning of the current financial crisis, on the other hand, stock prices have declined precipitously and have been very volatile. Stock prices in 2008 and early 2009 are down significantly from 2007 levels, reflecting the financial/economic crises.

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[1] See Federal Reserve Bank of New York, "Historical Changes of the Target Federal Funds and Discount Rates," www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html.

**Q. What conclusions do you draw from your discussion of economic and financial conditions?**

A. It is apparent that recent and current economic/financial circumstances are radically different from any that have prevailed since at least the 1930s. The recent deterioration in stock prices and the decline in U.S. Treasury bond yields and increase in corporate bond yields reflect the "flight to safety" that describes the extreme reluctance of investors to purchase common stocks and corporate bonds while moving investments into the very safe government bonds.

This "flight to safety" should not be interpreted to reflect an increase in the cost of capital, however. Rather, it more properly reflects an "availability of capital" since investors have been recently been unwilling to invest in any assets other than U.S. Treasury bonds. As I noted previously, the opportunity cost of capital, as measured by the recent and current returns of unregulated firms, has been the lowest in recent memory. Clearly, this cannot be claimed to reflect an increase in the cost of capital for a regulated firm such as AWC.

## CAPITAL STRUCTURE AND COST OF DEBT

**Q. Please summarize AWC and its operations.**

A. AWC is a public utility that delivers water service through its distribution systems in Arizona. AWC provides service to about 84,000 customers in 18 water systems in the state. AWC is a subsidiary of Utility Investment Company (a Nevada Corporation), which in turn is a subsidiary of United Resources, Inc. dba San Gabriel Water.

**Q. How have you evaluated the capital structure of AWC?**

A. I have examined the historic (2006-2008) capital structure ratios of AWC. These are shown on Schedule 3. I have summarized below the common equity ratios for AWC:

| | Including S-T Debt | Excluding S-T Debt |
|---|---|---|
| 2006 | 59.9% | 64.1% |
| 2007 | 49.7% | 64.0% |
| 2008 | 45.8% | 48.2% |

This reflects a declining equity ratio since 2006.

**Q. How do these capital structures compare to those of investor-owned water utilities?**

A. Schedule 4 shows the common equity ratios (including short-term debt in capitalization) for the three groups of water utilities utilized in my cost of equity analyses. These are:

| Year | Value Line Group | AUS Utility Group | Zepp Group |
|---|---|---|---|
| 2004 | 52% | 50% | 50% |
| 2005 | 49% | 48% | 49% |
| 2006 | 50% | 50% | 50% |
| 2007 | 51% | 50% | 50% |
| 2008 | 50% | 49% | 51% |

These common equity ratios are slightly higher than those of AWC in 2008, but similar to the levels of 2007.

**Q. What capital structure ratios has AWC requested in this proceeding?**

A. The Company requests use of the following capital structure:

| | |
|---|---|
| Long-Term Debt | 50.76% |
| Common Equity | 49.24% |

According to schedule D-1 of AWC's filing, this is the adjusted capital structure of the Company at December 31, 2007.

**Q. What capital structure do you propose to use in this proceeding?**

A. I use updated versions of the capital structure ratios as proposed by AWC. I use the December 31, 2008 capital structure amounts, as shown in the response to Staff DR 12.2. In addition, I include short-term debt in the capital structure, as is this Commission's precedent.

**Q. What are the cost rates of debt in the Company's application?**

A. The Company's filing cites a cost of long-term debt of 7.31 percent. This is represented to be the Company's adjusted cost at December 31, 2007. I use a cost of long-term debt of 6.83 percent in my cost of capital analyses, which reflects the actual December 31, 2008 values. For the cost of short-term debt, I use the 3.00 percent rate shown on the response to Staff DR 12.3.

**Q. Can the cost of common equity be determined with the same degree of precision as the costs of debt?**

A. No. The cost rates of debt are largely determined by interest payments, issue prices, and related expenses. The cost of common equity, on the other hand, cannot be precisely quantified, primarily because this cost is an opportunity cost. There are, however, several models which can be employed to estimate the cost of common equity. Three of the primary methods – DCF, CAPM, and CE – are developed in the following sections of my testimony.

## SELECTION OF PROXY GROUPS

**Q. How have you estimated the cost of common equity for AWC?**

A. AWC is not a publicly-traded company. Utility Investment Company, AWC's parent company, also is not a publicly-traded company. Consequently, it is not possible to directly apply cost of equity models to either AWC or Utility Investment Company. However, it is generally desirable to analyze groups of comparison or "proxy" companies as a substitute for AWC to determine its cost of common equity.

I have examined three such groups for comparison to AWC. I have first selected the group of four water utilities that are contained in the Standard Edition of Value Line. Second, I have used the group of eight water utilities covered in AUS utility Reports. Third, I have conducted studies of the cost of equity for the proxy group of water utilities selected by AWC's witness Thomas M. Zepp.

## DISCOUNTED CASH FLOW ANALYSIS

**Q. What is the theory and methodological basis of the DCF model?**

A. The DCF model is one of the oldest, as well as the most commonly-used, models for estimating the cost of common equity for public utilities. The DCF model is based on the "dividend discount model" of financial theory, which maintains that the value (price) of any security or commodity is the discounted present value of all future cash flows.

The most common variant of the DCF model assumes that dividends are expected to grow at a constant rate. This variant of the dividend discount model is known as the constant growth or Gordon DCF model. In this framework cost of capital is derived by the following formula:

$$K = \frac{D}{P} + g$$

where: K = discount rate (cost of capital)

P = current price

*D* = current dividend rate

g = constant rate of expected growth

This formula essentially recognizes that the return expected or required by investors is comprised of two factors: the dividend yield (current income) and expected growth in dividends (future income).

**Q. Please explain how you have employed the DCF model.**

A. I have utilized the constant growth DCF model. In doing so, I have combined the current dividend yield for each group of proxy utility stocks described in the previous section with several indicators of expected dividend growth.

**Q. How did you derive the dividend yield component of the DCF equation?**

A. There are several methods that can be used for calculating the dividend yield component. These methods generally differ in the manner in which the dividend rate is employed; *i.e.*, current versus future dividends or annual versus quarterly compounding of dividends. I believe the most appropriate dividend yield component is the version listed below:

$$\text{Yield} = \frac{D_0 \ (1 + 0.5g)}{P_0}$$

This dividend yield component recognizes the timing of dividend payments and dividend increases. The $P_0$ in my yield calculation is the average (of high and low) stock price for

each proxy company for the most recent three month period (February-April, 2009). The $D_0$ is the current annualized dividend rate for each proxy company.

**Q. How have you estimated the dividend growth component of the DCF equation?**

A. The dividend growth rate component of the DCF model is usually the most crucial and controversial element involved in using this methodology. The objective of estimating the dividend growth component is to reflect the growth expected by investors that is embodied in the price (and yield) of a company's stock. As such, it is important to recognize that individual investors have different expectations and consider alternative indicators in deriving their expectations. This is evidenced by the fact that every investment decision resulting in the purchase of a particular stock is matched by another investment decision to sell that stock. Obviously, since two investors reach different decisions at the same market price, their expectations differ.

A wide array of indicators exists for estimating the growth expectations of investors. As a result, it is evident that no single indicator of growth is always used by all investors. It therefore is necessary to consider alternative indicators of dividend growth in deriving the growth component of the DCF model.

I have considered five indicators of growth in my DCF analyses. These are:

1. 2004-2008 (5-year average) earnings retention, or fundamental growth (per Value Line);
2. 5-year average of historic growth in earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS") (per Value Line);

3. 2009, 2010, and 2012-2014 projections of earnings retention growth (per Value Line);
4. 2006-2008 to 2012-2014 projections of EPS, DPS, and BVPS (per Value Line); and
5. 5-year projections of EPS growth as reported in First Call (per Yahoo! Finance).

I believe this combination of growth indicators is a representative and appropriate set with which to begin the process of estimating investor expectations of dividend growth for the groups of proxy companies. I also believe that these growth indicators reflect the types of information that investors consider in making their investment decisions. As I indicated previously, investors have an array of information available to them, all of which should be expected to have some impact on their decision-making process.

**Q. Please describe your initial DCF calculations.**

A. Schedule 5 presents my DCF analysis. Page 1 shows the calculation of the "raw" (i.e., prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3 show the growth rate for the groups of proxy companies. Page 4 shows the "raw" DCF calculations, which are presented on several bases: mean, median, and high values. These results can be summarized as follows:

| | Mean | Median | Mean High[2] | Median High[3] |
|---|---|---|---|---|
| Value Line Group | 7.8% | 7.8% | 9.8% | 10.1% |
| AUS Group | 9.0% | 9.3% | 11.3% | 10.0% |
| Zepp Group | 9.1% | 9.2% | 12.0% | 10.7% |

[2] Using only the highest growth rate.
[3] Using only the highest growth rate.

I note that the individual DCF calculations shown on Schedule 5 should not be interpreted to reflect the expected cost of capital for the proxy groups; rather, the individual values shown should be interpreted as alternative information considered by investors. The individual DCF calculations also demonstrate how the focus on a single growth rate, such as EPS projections, can produce a DCF conclusion that is not reflective of a broader perspective of available information.

The results in Schedule 5 indicate average (mean and median) DCF cost rates of 7.8 percent to 9.3 percent. The "high" DCF rates (i.e., using the highest growth rates only) are about 9.8 percent to 12.0 percent on an average basis and 10.0 percent to 10.7 percent on a median basis.

**Q. What do you conclude from your DCF analyses?**

A. This analysis reflects a broad DCF range of about 7.8 percent to about 12.0 percent for the proxy groups. This is approximated by the average/mean and values for the proxy groups examined in the previous analysis. I give less weight to the extreme upper and lower ends of the groups which are impacted by outlier results. I believe that 9.0 percent to 10.5 percent reflects the proper DCF cost for AWC. This reflects the mean/median results, as well as most of the high end results.

## CAPITAL ASSET PRICING MODEL ANALYSIS

**Q. Please describe the theory and methodological basis of the CAPM.**

A. The CAPM is a version of the RP method. The CAPM describes and measures the relationship between a security's investment risk and its market rate of return. The CAPM was developed in the 1960s and 1970s as an extension of modern portfolio theory

("MPT"), which studies the relationships among risk, diversification, and expected returns.

**Q. How is the CAPM derived?**

A. The general form of the CAPM is:

$$K = R_f + \beta(R_m - R_f)$$

where: K = cost of equity

$R_f$ = risk free rate

Rm = return on market

β = beta

$R_m$-$R_f$ = market risk premium

As noted previously, the CAPM is a variant of the RP method. I believe the CAPM is generally superior to the simple RP method because the CAPM specifically recognizes the risk of a particular company or industry (*i.e.*, beta), whereas the simple RP method assumes the same risk premium for all companies exhibiting similar bond ratings.

**Q. What groups of companies have you utilized to perform your CAPM analyses?**

A. I have performed CAPM analyses for the same groups of proxy utilities evaluated in my DCF analyses.

**Q. Please explain the risk-free rate as used in your CAPM and indicate what rate you employed.**

A. The first term of the CAPM is the risk-free rate ($R_f$). The risk-free rate reflects the level of return that can be achieved without accepting any risk. In CAPM applications, the risk-free rate is generally recognized by use of U.S. Treasury securities. Two general types of U.S. Treasury securities are often utilized as the $R_f$ component - short-term U.S. Treasury bills and long-term U.S. Treasury bonds.

I have performed CAPM calculations using the three-month average yield (February-April, 2009) for 20-year U.S. Treasury bonds. Over this three-month period, these bonds had an average yield of 3.82 percent.

**Q. What is beta and what betas did you employ in your CAPM?**

A. Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation to the overall market. Betas of less than 1.0 are considered less risky than the market, whereas betas greater than 1.0 are more risky. Utility stocks traditionally have had betas below 1.0. I utilized the most recent Value Line betas for each company in the groups of proxy utilities.

**Q. How did you estimate the market risk premium component in your CAPM analysis?**

A. The market risk premium component ($R_m$-$R_f$) represents the investor-expected premium of common stocks over the risk-free rate, or government bonds. For the purpose of estimating the market risk premium, I considered alternative measures of returns of the Standard & Poor's ("S&P") 500 (a broad-based group of large U.S. companies) and 20-year U.S. Treasury bonds.

First, I have compared the actual annual returns on equity of the S&P 500 with the actual annual yields of U.S. Treasury bonds. Schedule 6 shows the return on equity for the S&P

500 group for the period 1978-2008 (all available years reported by S&P). This schedule also indicates the annual yields on 20-year U.S. Treasury bonds, as well as the annual differentials (*i.e.*, risk premiums) between the S&P 500 and U.S. Treasury 20-year bonds. Based upon these returns, I conclude that this version of the risk premium is about 6.45 percent.

I have also considered the total returns (i.e., dividends/interest plus capital gains/losses) for the S&P 500 group as well as for the long-term government bonds, as tabulated by Morningstar (formerly Ibbotson Associates), using both arithmetic and geometric means. I have considered the total returns for the entire 1926-2007 period, which are as follows:

| | S&P 500 | L-T Gov't Bonds | Risk Premium |
|---|---|---|---|
| Arithmetic | 11.7% | 6.1% | 5.6% |
| Geometric | 9.6% | 5.7% | 3.9% |

I conclude from this that the expected risk premium is about 5.32 percent (i.e., average of all three risk premiums). I believe that a combination of arithmetic and geometric means is appropriate since investors have access to both types of means and, presumably, both types are reflected in investment decisions and thus stock prices and cost of capital.

Schedule 7 shows my CAPM calculations using the risk premium. The results are:

| | Mean | Median |
|---|---|---|
| Value Line Group | 8.6% | 8.3% |
| AUS Group | 8.3% | 8.2% |
| Zepp Group | 8.3% | 8.2% |

**Q. What is your conclusion concerning the CAPM cost of equity?**

A. The CAPM results collectively indicate a cost of 8.2 percent to 8.6 percent for the groups of comparison utilities. I conclude that the CAPM cost of equity for AWC is 8.2 percent to 8.6 percent.

## COMPARABLE EARNINGS ANALYSIS

**Q. Please describe the basis of the CE methodology.**

A. The CE method is derived from the "corresponding risk" standard of the Bluefield and Hope cases. This method is thus based upon the economic concept of opportunity cost. As previously noted, the cost of capital is an opportunity cost: the prospective return available to investors from alternative investments of similar risk.

The CE method is designed to measure the returns expected to be earned on the original cost book value of similar risk enterprises. Thus, this method provides a direct measure of the fair return, because the CE method translates into practice the competitive principle upon which regulation is based.

The CE method normally examines the experienced and/or projected returns on book common equity. The logic for examining returns on book equity follows from the use of original cost rate base regulation for public utilities, which uses a utility's book common equity to determine the cost of capital. This cost of capital is, in turn, used as the fair rate of return which is then applied (multiplied) to the book value of rate base to establish the dollar level of capital costs to be recovered by the utility. This technique is thus consistent with the rate base methodology used to set utility rates.

**Q. How have you employed the CE methodology in your analysis of AWC's common equity cost?**

A. I conducted the CE methodology by examining realized returns on equity for several groups of companies and evaluating the investor acceptance of these returns by reference to the resulting market-to-book ratios. In this manner it is possible to assess the degree to which a given level of return equates to the cost of capital. It is generally recognized for utilities that market-to-book ratios of greater than one (*i.e.*, 100%) reflect a situation where a company is able to attract new equity capital without dilution (*i.e.*, above book value). As a result, one objective of a fair cost of equity is the maintenance of stock prices above book value.

I would further note that the CE analysis, as I have employed it, is based upon market data (through the use of market-to-book ratios) and is thus essentially a market test. As a result, my analysis is not subject to the criticisms occasionally made by some who maintain that past earned returns do not represent the cost of capital. In addition, my analysis uses prospective returns and thus is not confined to historical data.

**Q. What time periods have you examined in your CE analysis?**

A. My CE analysis considers the experienced equity returns of the proxy groups of utilities for the period 1992-2008 (*i.e.*, the last seventeen years). The CE analysis requires that I examine a relatively long period of time in order to determine trends in earnings over at least a full business cycle. Further, in estimating a fair level of return for a future period, it is important to examine earnings over a diverse period of time in order to avoid any undue influence from unusual or abnormal conditions that may occur in a single year or shorter period. Therefore, in forming my judgment of the current cost of equity I have

focused on two periods: 2002-2008 (the last business cycle) and 1992-2001 (the most recent complete business cycle).

**Q. Please describe your CE analysis.**

A. Schedules 8 and 9 contain summaries of experienced returns on equity for several groups of companies, while Schedule 10 presents a risk comparison of utilities versus unregulated firms.

Schedule 8 shows the earned returns on average common equity and market-to-book ratios for the groups of proxy utilities. These can be summarized as follows:

| | Value Line Group | AUS Group | Zepp Group |
|---|---|---|---|
| Historic ROE | | | |
| Mean | 8.5-10.5% | 9.4-11.0% | 9.8-11.4% |
| Median | 9.1-11.0% | 9.5-11.1% | 9.6-11.3% |
| Historic M/B | | | |
| Mean | 177-227% | 175-224% | 180-227% |
| Median | 173-217% | 171-214% | 175-217% |
| Prospective ROE | | | |
| Mean | 10.0-12.0% | 10.0-12.0% | 10.0-12.0% |
| Median | 10.0-12.0% | 10.0-12.0% | 10.0-12.0% |

These results indicate that historic returns of 8.5-11.4 percent have been adequate to produce market-to-book ratios of 171-227 percent for the groups of proxy utilities. Furthermore, projected returns on equity for 2009, 2010, and 2012-2014 are within a range of 10.0 percent to 12.0 percent for the utility groups. These relate to 2008 market-to-book ratios of 170 percent or higher.

**Q. Have you also reviewed earnings of unregulated firms?**

A. Yes. As an alternative, I also examined a group of largely unregulated firms. I have examined the S&P 500 Composite group, since this is a well-recognized group of firms that is widely utilized in the investment community and is indicative of the competitive sector of the economy. Schedule 9 presents the earned returns on equity and market-to-book ratios for the S&P 500 group over the past sixteen years. As this Schedule indicates, over the two periods this group's average earned returns ranged from 13.9 percent to 14.7 percent with market-to-book ratios ranging between 288 percent and 341 percent.

**Q. How can the above information be used to estimate the cost of equity for AWC?**

A. The recent earnings of the proxy utility and S&P 500 groups can be utilized as an indication of the level of return realized and expected in the regulated and competitive sectors of the economy. In order to apply these returns to the cost of equity for proxy utilities, however, it is necessary to compare the risk levels of the utility industry with those of the competitive sector. I have done this in Schedule 10, which compares several risk indicators for the S&P 500 group and the utility groups. The information in this schedule indicates that the S&P 500 group is more risky than the utility proxy groups.

**Q. What return on equity is indicated by the CE analysis?**

A. Based on the recent earnings and market-to-book ratios, I believe the CE analysis indicates that the cost of equity for the proxy utilities is no more than 9.5 percent to 10.5 percent. Recent returns of 8.5 percent to 11.4 percent have resulted in market-to-book ratios of 170 and greater. Prospective returns of 10.0 percent to 12.0 percent result in anticipated market-to-book ratios of over 170 percent. As a result, it is apparent that returns below this level would result in market-to-book ratios of well above 100 percent. An earned return of 9.5 percent to 10.5 percent should thus result in a market-to-book ratio

of over 100 percent. As I indicated earlier, the fact that market-to-book ratios substantially exceed 100 percent indicates that historic and prospective returns of over 10 percent reflect earnings levels that exceed the cost of equity for those regulated companies.

Please also note that my CE analysis is not based on a mathematic formula approach, as are the DCF and CAPM methodologies. Rather, it is based on recent trends and current conditions in equity markets. Further, it is based on the direct relationship between returns on common stock and market-to-book ratios of common stock. In utility rate setting, a fair rate of return is based on the utility's assets (*i.e.*, rate base) and the book value of the utility's capital structure. As stated earlier, maintenance of a financially stable utility's market-to-book ratio at 100 percent, or a bit higher, is fully adequate to maintain the utility's financial stability. On the other hand, a market price of a utility's common stock that is 170 percent or more above the stock's book value is indicative of earnings that exceed the utility's reasonable cost of capital. Thus, actual or projected earnings do not directly translate into a utility's reasonable cost of equity. Rather, they must be viewed in relation to the market-to-book ratios of the utility's common stock.

My 9.5 percent to 10.5 percent CE recommendation is not designed to result in market-to-book ratios as low as 1.0 for AWC. Rather, it is based on current market conditions and the proposition that ratepayers should not be required to pay rates based on earnings levels that result in excessive market-to-book ratios.

**RETURN ON EQUITY RECOMMENDATIONS**

**Q. Please summarize the results of your three cost of equity analyses.**

A. My three methodologies produce the following:

| | |
|---|---|
| Discounted Cash Flow | 9.0-10.5% (9.75% mid-point) |
| Capital Asset Pricing Model | 8.2-8.6% (8.4% mid-point) |
| Comparable Earnings | 9.5-10.5% (10.0% mid-point) |

**Q. What is your cost of equity recommendation for AWC?**

A. I recommend a cost of equity of 9.5 percent to 10.5 percent for AWC. Within this range, I recommend the 10.0 percent mid-point level.

**Q. Please explain how the recent and current economic and financial crisis impacts the cost of equity for AWC.**

A. It is well chronicled that, over the past two years and especially over the past several months, the United States and global financial markets have been in turmoil. The impacts of this have been far-reaching and extreme, with global credit markets virtually coming to a standstill. This crisis and its impact, however, do not imply that the cost of equity for water utilities such as AWC have increased. I say this for the following reasons.

First, it must be emphasized that depressed economic conditions and the financial crisis affects virtually all sectors of the economy – households, small businesses, larger commercial and industrials – and, in most cases, the impact is greater than is the case for AWC. AWC is a regulated utility that sells a product that has no real substitutes. As such, AWC and utilities are partially, if not largely, insulated from the impacts of depressed economic conditions.

Second, the major impact of a recession is to depress the profits of most enterprises. As a result, it is to be expected that capital costs will decrease in tandem with a significant recession. There is no justification for increasing the profit level of a regulated utility such as AWC at the same time that other enterprises are experiencing lower profits.

Third, even if AWC were to incur higher costs of debt and/or other capital costs, these costs can be passed along to ratepayers at the next rate proceeding. Unregulated firms cannot do this.

Fourth, the United States and global governments have taken, and continue to take, extraordinary measures to avoid a further worsening of the current market turmoil. Most of these measures are designed to put liquidity into the credit markets and make credit more accessible again and, in the process, restore more confidence to the financial markets. All of these measures are clearly designed to lower the cost of capital. In this environment, it would be counter-productive to make any claim that AWC should have a higher return at this time due to the above-cited market turmoil.

## TOTAL COST OF CAPITAL

**Q. What is the total cost of capital for AWC?**

A. Schedule 1 reflects the total cost of capital for the Company using AWC's capital structure and costs of debt along with the range of common equity costs my analyses support. The resulting total cost of capital is a range from 7.87 percent to 8.33 percent. I recommend that an 8.10 percent total cost of capital be established for AWC.

**Q. Does your cost of capital recommendation provide the Company with a sufficient level of earnings to maintain its financial integrity?**

A. Yes, it does. Schedule 11 shows the pre-tax coverage that would result if AWC earned my cost of capital recommendation. As the results indicate, my recommended range would produce a coverage level within the benchmark range for a BBB[4] rated utility. In addition, the debt ratio (which reflects the Company's proposed capital structure) is within the benchmark for a BBB rated utility.

**Q. Are you proposing a fair value rate of return in this proceeding?**

A. Yes. However, in the present proceeding, AWC is not requesting a FVRB that differs from its original cost rate base. Therefore, the proposed FVROR does not differ from my previously recommended overall rate of return.

**Q. Are you aware that AWC is requesting an Attrition Adjuster in this proceeding?**

A. Yes, I am. AWC, through the testimonies of William Garfield and Joel Reiker, is requesting an Attrition Adjuster Mechanism ("AAM"). Mr. Garfield states that the AAM should be approved for AWC in the absence of the approval of several other proposed adjuster mechanisms, including a Purchased Power Adjuster Mechanism ("PPAM"), Purchased Water Adjuster Mechanism ("PWAM"), and Purchased Fuel Adjuster Mechanism ("PFAM"). Mr. Garfield states that, in the absence of the approval of all of the adjuster mechanisms proposed or the approval of the AAM, the Company "will not be able to attract capital on reasonable terms to construct necessary utility plant."

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[4] A rating indicating medium grade investment quality.

**Q. Do you believe that the proposed AAM is necessary for AWC in order to attract capital on reasonable terms?**

A. No, I do not. AWC has exhibited an ability to attract capital in recent years without the combination of adjuster mechanisms it is presently requesting. I further note that this Commission has recently declined to continue the approval of certain automatic adjustment mechanisms for several AWC operating divisions in recent cases.

Finally, I note that the current economic recession, and its impact on AWC's customers, makes the timing of the implementation of an AAM problematic at this time. It is not fair or proper to ask ratepayers to insulate AWC from its business risk factors at the same time that these same ratepayers are suffering from current economic circumstances. I further note that the magnitude of AWC's rate request (i.e., a proposed 35 percent increase in rates) makes the requested adjuster mechanisms particularly burdensome to customers.

It is my understanding that other Utilities Division Staff witness are opposing the AAM in this proceedings.

**COMMENTS ON COMPANY TESTIMONY**

**Q. Have you reviewed the testimony of AWC witness Thomas M. Zepp?**

A. Yes, I have. Dr. Zepp is recommending a return on equity for AWC of 12.4 percent. His 12.4 percent recommendation is derived as follows:

| | | |
|---|---|---|
| DCF Analysis – "Zepp Approach" | 11.8% - 11.9% | Table 10 |
| DCF Analysis – "Staff Approach" | 11.3% - 11.4% | Table 11 |
| DCF Average | 11.6% | |

| | | |
|---|---|---|
| CAPM Analysis -- L-T MRP | 11.8% | Table 13 |
| CAPM Analysis – Current MRP | 12.5% | Table 14 |
| CAPM Average | 12.1% | |
| Average Cost of Equity Estimate | 11.9% | |
| Risk Premium for AWC | 0.5% | |
| Cost of Equity Recommendation for AWC | 12.4% | |

**Q. Do you agree with Dr. Zepp's methodologies and conclusions?**

A. No, I do not. Each of Dr. Zepp's DCF and CAPM methodologies and inputs suffer from defects that have the effect of over-estimating the cost of equity for water utilities in general and AWC in particular. In addition, his proposed fifty basis points risk adjustment for his perception of AWC's risks is improper and should not be accepted by the Commission.

**Q. What is your response for Dr. Zepp's DCF conclusions using his perception of the "conceptually correct DCF" analysis?**

A. This is summarized on Table 10 of Dr. Zepp's testimony. In this table, Dr. Zepp performs two sets of DCF analyses – one with a 3-month yield and one with a 12-month yield. Both sets of DCF analyses employ an 8.56 percent growth rate, which are developed on Table 9. It is noteworthy that all of the growth rates shown on his Table 9 are analysts' forecasts of EPS.

I do not believe it is proper to rely on a single type of growth rate estimate in a DCF context. This is especially true when, as is the case here, the single growth rate reflects only projected data.

**Q. Why is it improper to rely exclusively on analysts' forecasts of EPS in a DCF model?**

A. There are several reasons why it is not proper to rely exclusively on analysts' forecasts in a DCF context.

First, it is not realistic to believe that investors rely exclusively on a single factor, such as analysts' forecasts, in making their investment decisions. Investors have an abundance of available information to assist them in evaluating stocks and EPS forecasts are only one of many such statistics.

Second, Value Line, one of Dr. Zepp's sources of EPS projections, publishes a large number of individual company data and ratios. Presumably these are published for the consideration of subscribers/investors. It is also apparent that Value Line publishes both historic and forecast data – yet Dr. Zepp considers only one factor and only the forecast version of this factor.

Third, the vast majority of information available to investors, by both individual companies in the form of annual reports and offering circulars, and by investment publications such as Value Line, is historic data. It is neither realistic nor logical to maintain that investors only consider projected (estimated) data to the exclusion of historic (actual) data.

Fourth, there have been a number of academic studies that indicate that analysts' forecasts have been overly-optimistic in the past. See, for example a 1998 article (in the Financial Analysts Journal, Vol. 54, No. 6, Nov./Dec. 1998, 35-42) titled "Why So Much Error In Analysts' Earnings Forecasts?," by Vijay Kumer Chopra. In this article, the author concluded, "Analysts' forecasts of EPS and growth in EPS tend to be overly optimistic."

He concluded that analysts' forecasts of EPS over the past 13 years have been more than twice the actual growth rate. Investors are aware of the propensity of analysts to over-estimate EPS forecasts. In addition, the presumption that investors rely only on a single projection implies that investors are unsophisticated and unable to make their own decisions. This also is not rational.

Fifth, the experience over the past two years should be a clear signal to investors that analysts cannot accurately predict EPS levels. Hardly any security analysts predicted the decline in profits that occurred in 2008 and 2009 to-date.

Sixth, the well-publicized financial debacles of Enron and WorldCom demonstrate dramatically how analysts are often either unwilling or incapable of discerning potentially disastrous impacts of a company's projected EPS, and how even current earnings can be distorted by the complex financial machinations of large, aggressive corporations.

Finally, during 2003, ten of the nation's largest securities firms agreed to pay a record $1.4 billion in penalties to settle U.S. government charges involving investor abuses, many of which resulted from analysts' forecasts and recommendations that the government charged were biased and subject to conflicts-of-interests. This settlement largely grew out of a New York State investigation and reflects the national, and even international, scope of the negative perceptions of analysts' forecasts and recommendations. These, and other, similar investigations and complaints have underscored a growing awareness that analysts' estimates cannot be considered an unbiased source of growth expectations by investors, and this understanding has important implications for a DCF analysis that exclusively incorporates any such estimates.

In summary, investors are now very much aware of recent scandals involving security analysts, including the Enron and WorldCom debacles, conflicts of interest that have resulted in settlements, fines, and public admonishments, as well as other negative connotations related to the reliability of analysts' forecasts. These problems clearly call into question the reliance of analysts' forecasts as the only source of growth in a DCF context. The landscape has changed in recent years and investors have ample reasons to doubt the reliability of such forecasts at the present time.

**Q. Are EPS projections generally higher than the alternative indicators of growth available to investors?**

A. Yes, they are. It is apparent from the data in my Schedule 5 that EPS projections are generally the highest indicators of growth. Again, it is not realistic to believe that all investors rely exclusively on this single source of data.

**Q. What is your response to Dr. Zepp's DCF conclusions based upon his perception of the "staff approach" to the DCF model?**

A. This is shown on Table 11 of Dr. Zepp's testimony. As was the case for his "conceptually correct" DCF analysis, he performed two sets of DCF calculations – one with a 3-month yield and one with a 12-month yield. Both sets of DCF calculations used a growth rate of 8.07 percent.

**Q. How is this 8.07 percent growth rate derived?**

A. Dr. Zepp states, on page 31, that his 8.07 percent growth rate is the average of the historic growth rates shown on his Table 3 (7.6 percent) and projected growth rates shown on his Table 9 (8.6 percent). I note that the 7.6 percent average growth rate on his Table 3 reflects the following average growth rates for his water sample group:

| Growth Indicator | 5-Year Sample Average | 10-Year Sample Average |
|---|---|---|
| Stock Price | 10.5% | 9.4% |
| BVPS | 7.0% | 5.8% |
| DPS | 3.2% | 2.9% |
| EPS | 7.3% | 5.5% |
| | | |
| Average | 8.3% | 6.9% |
| Average | 7.6% | |

**Q. Do you agree with his historic growth rates?**

A. No, I do not. In particular, I do not agree with the use of stock price growth in a DCF context. I believe that stock price growth is too unstable to be used as a viable indicator of investor expectations, especially at the current time. Over the past year, stock prices have dropped substantially. This is particularly relevant since Dr. Zepp's stock price growth ends with the year 2007. Given the performance of the stock market in 2008 and 2009, it is problematic that investors would give significant weight to stock price growth in forming expectations of growth in a DCF context. This is especially significant since the growth of stock prices greatly exceeds the growth of the other indictors. Eliminating the stock price growth indicator has the effect of reducing the 5-year average growth rate to 5.8 percent (down from 8.3 percent) and the 10-year average growth rate to 4.7 percent (down from 6.9 percent). The average of these two is 5.25 percent (down from 7.6 percent).

**Q. Do you agree with Dr. Zepp's projected growth rates he uses in this DCF analysis?**

A. No, I do not. As I show on my Schedule 5, the most recent average of analysts forecasts of EPS (excluding Connecticut Water, as Dr. Zepp does) is 7.2 percent (down from the 8.6 percent shown in Dr. Zepp's testimony using forecasts from December 2007 to February 2008).

**Q. What is your response to Dr. Zepp's CAPM "based on long-term average market risk premium?"**

A. This is shown on Table 13 of Dr. Zepp's testimony. His 11.8 percent conclusion is derived as follows:

| | | |
|---|---|---|
| Risk Free Rate | 4.9% | Forecasts of Long-Term Gov't Bonds as of early 2008 |
| Beta | 0.98 | Value Line betas as of February 2008 |
| Market Risk Premium | 7.1% | Ibbotson 1926-2007 difference in market returns of S&P 500 and income returns on long-term government bonds |

Each of these three inputs is dated and overstated.

**Q. How is the risk free rate overstated?**

A. Dr. Zepp uses a 4.90 percent risk free rate. As I show in my testimony, the yields on 20-year U.S. Treasury bonds have been well below this level for quite some time. For the most recent three-month period, the average yield on long-term U.S. treasury bonds has been 3.83 percent, which is more than 100 basis points below the yield used by Dr. Zepp.

**Q. Why are Dr. Zepp's beta values over-stated?**

A. The Value Line beta values for water utilities have declined since February 2008 – the time period of Dr. Zepp's betas. As I have shown in my testimony, more current (April 2009) betas for his water group average 0.84 (down from his dated 0.98 average).

**Q. Please now explain why Dr. Zepp's market risk premium is excessive.**

A. His 7.1 risk premium reflects the 1926-2007 risk premium between total returns on the S&P 500 and income returns on long-term government bonds, as reported in Morningstar (Ibbotson).

I disagree with Dr. Zepps's risk premium which appears to employ exclusive reliance on the 1926-2007 arithmetic average differences between large company stocks (i.e., S&P 500) and long-term Treasury bonds. As I indicated earlier in my testimony, it is preferable to use multiple sources of risk premium measures, as I have done. Dr. Zepp's 7.1 percent risk premium used only arithmetic returns, and ignores geometric (compound) returns in deriving the risk premium component of the CAPM. This is not proper. It is apparent that investors have access to both types of returns, and correspondingly use both types of returns, when they make investment decisions.

In fact, it is noteworthy that mutual fund investors regularly receive reports on their own funds, as well as prospective funds they are considering for investment, that show only geometric returns. Based on this, I find it difficult to accept Dr. Zepp's position that only arithmetic returns are considered by investors, and, thus, only arithmetic returns are appropriate in a CAPM context.

I also disagree with Dr. Zepp's 7.1 percent risk premium since it improperly used "income returns" from the Morningstar study rather than "total returns." What Dr. Zepp did was compare the differential between total returns for common stocks (i.e., dividends and capital gains) and only income returns for Treasury bonds. As such, he has ignored the capital gains component of the Treasury bonds return. As I indicated in my earlier testimony, the differential between *total returns* of common stocks and Treasury bonds, is 5.6 percent on an arithmetic basis. In addition, Dr. Zepp's use of the Morningstar study only used half of the reported data (arithmetic means) and ignored the other half of the reported data (geometric means).

It is apparent that, when Dr. Zepp's historic risk premium estimate is updated for the inclusion of 2008 data, a much different picture emerges. The 1926-2008 differential between the arithmetic returns of the S&P 500 and long-term government bonds has declined from 6.5 percent to 5.6 percent (i.e., 11.7 percent total return from S&P 500 minus 6.1 percent total return for long-term government bonds), a reduction of 90 basis points. A similar update of his "income return" would have the effect of reducing his CAPM risk premium to 6.5 percent, or 60 basis points.

**Q. Please now turn to Dr. Zepp's CAPM analysis "based on current forecast of market risk premium."**

A. This is shown on Table 14 of his testimony. The only difference between his two sets of CAPM analyses is the market risk premium, as both use the same values of the risk free rate and beta. The market risk premium in Dr. Zepp's "Current Forecast of Market Risk Premium" is 7.7 percent and is developed by comparing "DCF Equity Costs" of the Value Line Industrial Composite and long-term treasury bonds for the period 1987 to 2007, as shown on his Table 15.

I do not believe this is an appropriate methodology with which to estimate the market risk premium for a water utility. The DCF rates shown in his Table 15 show values of 17 percent and above over the last three periods, with resulting risk premiums of over 12 percent. These 17 percent plus DCF rates seem excessive and greatly exceed the achieved returns of unregulated firms over both long-term and recent times, as evidenced by the Morningstar (Ibbotson) studies cited in my testimony.

**Q. Do you agree with Dr. Zepp's proposal to add a 50 basis point risk adjustment to the DCF and CAPM results for his water group to account for the perceived higher risk of AWC?**

A. No, I do not. Dr. Zepp's proposed 50 basis point adjustment above the DCF and CAPM cost rates for his group of proxy water utilities is based upon his perception that AWC is more risky than the companies making up his proxy group. The perceived risk factors that Dr. Zepp cites are as follows:

- Regulation in Arizona – pages 16-17
- Lack of automatic adjustment mechanisms, such as arsenic treatment costs, purchased water, purchased fuel, and purchased power costs – pages 17-20
- Inverted rate structures – pages 20-21
- Small size of AWC – pages 21-23

**Q. Do you agree with Dr. Zepp's perception of AWC's risks?**

A. No, I do not. I disagree with Dr. Zepp on the relative risk of AWC for two primary sets of reasons. First, Dr. Zepp is comparing AWC, as a company, with the operations of the proxy companies. AWC, like many of the proxy companies, is part of a larger

organization. It is not proper to compare one subsidiary of a water group with the total operations of other water groups.

Second most, if not all, of the risks cited by Dr. Zepp are not new to AWC. As a result, the Commission has had the opportunity to assess these perceived risks in previous AWC cases. My reading of the decisions in several recent AWC decisions does not reflect any Commission recognition of the risks cited by Dr. Zepp. I note that this Commission has previously found (e.g., Decision No. 66849 in Docket No. W-01445A-02-0619, dated March 19, 2004 and Decision No. 68302 in Docket No. W-01445A-04-0650) that no risk adjustments are appropriate for AWC. It is my belief that such a position remains true at this time. In fact, even if there were any Commission recognition of these risks, their impact would be reflected in the costs of equity approved for AWC. These returns have recently been in the area of 10 percent or less, which is similar to what I am recommending in this proceeding for AWC.

**Q. Dr. Zepp also maintains, on page 14, that the risks of the water industry have increased in recent years, due to an increase in average beta values for water utilities. Do you agree with this assertion?**

A. No, I do not. In fact, since Dr. Zepp's testimony was prepared in early 2008, the average beta values of his water sample have decreased. According to his logic, this indicates a decline in the risk of the water utility industry.

**Q. Does this conclude your Direct Testimony?**

A. Yes, it does.

# BACKGROUND AND EXPERIENCE PROFILE
# DAVID C. PARCELL, MBA, CRRA
# PRESIDENT/SENIOR ECONOMIST

## EDUCATION

| | |
|---|---|
| 1985 | M.B.A., Virginia Commonwealth University |
| 1970 | M.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech) |
| 1969 | B.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech) |

## POSITIONS

| | |
|---|---|
| 2007-Present | President, Technical Associates, Inc. |
| 1995-2007 | Executive Vice President and Senior Economist, Technical Associates, Inc. |
| | 1993-1995 Vice President and Senior Economist, C. W. Amos of Virginia |
| 1972-1993 | Vice President and Senior Economist, Technical Associates, Inc. |
| 1969-1972 | Research Economist, Technical Associates, Inc. |
| 1968-1969 | Research Associate, Department of Economics, Virginia Polytechnic Institute and State University |

## ACADEMIC HONORS

Omicron Delta Epsilon - Honor Society in Economics
Beta Gamma Sigma - National Scholastic Honor Society of Business Administration
Alpha Iota Delta - National Decision Sciences Honorary Society
Phi Kappa Phi - Scholastic Honor Society

## PROFESSIONAL DESIGNATIONS

Certified Rate of Return Analyst - Founding Member
Member of Association for Investment Management and Research (AIMR)

## RELEVANT EXPERIENCE

Financial Economics -- Advised and assisted many Virginia banks and savings and loan associations on organizational and regulatory matters. Testified approximately 25 times before

the Virginia State Corporation Commission and the Regional Administrator of National Banks on matters related to branching and organization for banks, savings and loan associations, and consumer finance companies. Advised financial institutions on interest rate structure and loan maturity. Testified before Virginia State Corporation Commission on maximum rates for consumer finance companies.

Testified before several committees and subcommittees of Virginia General Assembly on numerous banking matters.

Clients have included First National Bank of Rocky Mount, Patrick Henry National Bank, Peoples Bank of Danville, Blue Ridge Bank, Bank of Essex, and Signet Bank.

Published articles in law reviews and other periodicals on structure and regulation of banking/financial services industry.

Utility Economics – Performed numerous financial studies of regulated public utilities. Testified in over 300 cases before some thirty state and federal regulatory agencies.

Prepared numerous rate of return studies incorporating cost of equity determination based on DCF, CAPM, comparable earnings and other models. Developed procedures for identifying differential risk characteristics by nuclear construction and other factors.

Conducted studies with respect to cost of service and indexing for determining utility rates, the development of annual review procedures for regulatory control of utilities, fuel and power plant cost recovery adjustment clauses, power supply agreements among affiliates, utility franchise fees, and use of short-term debt in capital structure.

Presented expert testimony before federal regulatory agencies Federal Energy Regulatory Commission, Federal Power Commission, and National Energy Board (Canada), state regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, West Virginia, Washington, Wisconsin, and Yukon Territory (Canada).

Published articles in law reviews and other periodicals on the theory and purpose of regulation and other regulatory subjects.

Clients served include state regulatory agencies in Alaska, Arizona, Delaware, Missouri, North Carolina, Ontario (Canada), and Virginia; consumer advocates and attorneys general in Alabama, Arizona, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky,

Maryland, Nevada, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, and West Virginia; federal agencies including Defense Communications Agency, the Department of Energy, Department of the Navy, and General Services Administration; and various organizations such as Bath Iron Works, Illinois Citizens' Utility Board, Illinois Governor's Office of Consumer Services, Illinois Small Business Utility Advocate, Wisconsin's Environmental Decade, Wisconsin's Citizens Utility Board, and Old Dominion Electric Cooperative.

Insurance Economics -- Conducted analyses of the relationship between the investment income earned by insurance companies on their portfolios and the premiums charged for insurance. Analyzed impact of diversification on financial strength of Blue Cross/Blue Shield Plans in Virginia.

Conducted studies of profitability and cost of capital for property/casualty insurance industry. Evaluated risk of and required return on surplus for various lines of insurance business.

Presented expert testimony before Virginia State Corporation Commission concerning cost of capital and expected gains from investment portfolio. Testified before insurance bureaus of Maine, New Jersey, North Carolina, Rhode Island, South Carolina and Vermont concerning cost of equity for insurance companies.

Prepared cost of capital and investment income return analyses for numerous insurance companies concerning several lines of insurance business. Analyses used by Virginia Bureau of Insurance for purposes of setting rates.

Special Studies -- Conducted analyses which evaluated the financial and economic implications of legislative and administrative changes. Subject matter of analyses include returnable bottles, retail beer sales, wine sales regulations, taxi-cab taxation, and bank regulation. Testified before several Virginia General Assembly subcommittees.

Testified before Virginia ABC Commission concerning economic impact of mixed beverage license.
Clients include Virginia Beer Wholesalers, Wine Institute, Virginia Retail Merchants Association, and Virginia Taxicab Association.

Franchise, Merger & Anti-Trust Economics -- Conducted studies on competitive impact on market structures due to joint ventures, mergers, franchising and other business restructuring. Analyzed the costs and benefits to parties involved in mergers. Testified in federal courts and before banking and other regulatory bodies concerning the structure and performance of markets, as well as on the impact of restrictive practices.

Clients served include Dominion Bankshares, asphalt contractors, and law firms.

Transportation Economics -- Conducted cost of capital studies to assess profitability of oil pipelines, trucks, taxicabs and railroads. Analyses have been presented before the Federal Energy Regulatory Commission and Alaska Pipeline Commission in rate proceedings. Served as a consultant to the Rail Services Planning Office on the reorganization of rail services in the U.S.
Economic Loss Analyses -- Testified in federal courts, state courts, and other adjudicative forums regarding the economic loss sustained through personal and business injury whether due to bodily harm, discrimination, non-performance, or anticompetitive practices. Testified on economic loss to a commercial bank resulting from publication of adverse information concerning solvency. Testimony has been presented on behalf of private individuals and business firms.

**MEMBERSHIPS**

American Economic Association
Virginia Association of Economists
Richmond Society of Financial Analysts
Financial Analysts Federation
Society of Utility and Regulatory Financial Analysts

| | |
|---|---|
| Board of Directors | 1992-2000 |
| Secretary/Treasurer | 1994-1998 |
| President | 1998-2000 |

**RESEARCH ACTIVITY**

**Books and Major Research Reports**

"Stock Price As An Indicator of Performance," Master of Arts Thesis, Virginia Tech, 1970

"Revision of the Property and Casualty Insurance Ratemaking Process Under Prior Approval in the Commonwealth of Virginia," prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Charles Schotta and Michael J. Ileo, 1971

"An analysis of the Virginia Consumer Finance Industry to Determine the Need for Restructuring the Rate and Size Ceilings on Small Loans in Virginia and the Process by which They are Governed," prepared for the Virginia Consumer Finance Association, with Michael J. Ileo, 1973

State Banks and the State Corporation Commission: A Historical Review, Technical Associates, Inc., 1974

"A Study of the Implications of the Sale of Wine by the Virginia Department of Alcoholic Beverage Control", prepared for the Virginia Wine Wholesalers Association, Virginia Retail Merchants Association, Virginia Food Dealers Association, Virginia Association of Chain Drugstores, Southland Corporation, and the Wine Institute, 1983.

"Performance and Diversification of the Blue Cross/Blue Shield Plans in Virginia: An Operational Review", prepared for the Bureau of Insurance of the Virginia State Corporation Commission, with Michael J. Ileo and Alexander F. Skirpan, 1988.

The Cost of Capital - A Practitioners' Guide, Society of Utility and Regulatory Financial Analysts, 1997 (previous editions in 1991, 1992, 1993, 1994, and 1995).

**Papers Presented and Articles Published**

"The Differential Effect of Bank Structure on the Transmission of Open Market Operations," Western Economic Association Meeting, with Charles Schotta, 1971

"The Economic Objectives of Regulation: The Trend in Virginia," (with Michael J. Ileo), William and Mary Law Review, Vol. 14, No. 2, 1973

"Evolution of the Virginia Banking Structure, 1962-1974: The Effects of the Buck-Holland Bill", (with Michael J. Ileo), William and Mary Law Review, Vol. 16, No. 3, 1975

"Banking Structure and Statewide Branching: The Potential for Virginia", William and Mary Law Review, Vol. 18, No. 1, 1976

"Bank Expansion and Electronic Banking: Virginia Banking Structure Changes Past, Present, and Future," William and Mary Business Review," Vol. 1, No. 2, 1976

"Electronic Banking - Wave of the Future?" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 1, 1976

"The Pricing of Electricity" (with James R. Marchand), Journal of Management and Business Consulting, Vol. 1, No. 2, 1976

"The Public Interest - Bank and Savings and Loan Expansion in Virginia" (with Richard D. Rogers), University of Richmond Law Review, Vol. 11, No. 3, 1977

"When Is It In the 'Public Interest' to Authorize a New Bank?", University of Richmond Law Review, Vol. 13, No. 3, 1979

"Banking Deregulation and Its Implications on the Virginia Banking Structure," William and Mary Business Review, Vol. 5, No. 1, 1983

"The Impact of Reciprocal Interstate Banking Statutes on The Performance of Virginia Bank Stocks", with William B. Harrison, Virginia Social Science Journal, Vol. 23, 1988

"The Financial Performance of New Banks in Virginia", Virginia Social Science Journal, Vol. 24, 1989

"Identifying and Managing Community Bank Performance After Deregulation", with William B. Harrison, Journal of Managerial Issues, Vol. II, No. 2, Summer 1990

"The Flotation Cost Adjustment To Utility Cost of Common Equity - Theory, Measurement and Implementation," presented at Twenty-Fifth Financial Forum, National Society of Rate of Return Analysts, Philadelphia, Pennsylvania, April 28, 1993.

Biography of Myon Edison Bristow, Dictionary of Virginia Biography, Volume 2, 2001.

Exhibit___(DCP-1)
Schedule 1

# ARIZONA WATER COMPANY
# TOTAL COST OF CAPITAL

| Item | Amount 1/ | Percent | Cost | | | Weighted Cost | | |
|---|---|---|---|---|---|---|---|---|
| Short-Term Debt | $7,300,000 | 4.80% | | 3.00% | 1/ | | 0.14% | |
| Long-Term Debt | $75,000,000 | 49.35% | | 6.83% | 1/ | | 3.37% | |
| Common Equity | $69,671,689 | 45.85% | 9.50% | | 10.50% | 4.36% | | 4.81% |
| Total | $151,971,689 | 100.00% | | | | **7.87%** | | **8.33%** |
| | | | | | | **Mid-Point** | **8.10%** | |

1/ Per response to Staff's DR 12.2.

# ECONOMIC INDICATORS

| Year | Real GDP Growth* | Industrial Production Growth | Unemploy-ment Rate | Consumer Price Index | Producer Price Index |
|---|---|---|---|---|---|
| | | **1975 - 1982 Cycle** | | | |
| 1975 | -1.1% | -8.9% | 8.5% | 7.0% | 6.6% |
| 1976 | 5.4% | 10.8% | 7.7% | 4.8% | 3.7% |
| 1977 | 5.5% | 5.9% | 7.0% | 6.8% | 6.9% |
| 1978 | 5.0% | 5.7% | 6.0% | 9.0% | 9.2% |
| 1979 | 2.8% | 4.4% | 5.8% | 13.3% | 12.8% |
| 1980 | -0.2% | -1.9% | 7.0% | 12.4% | 11.8% |
| 1981 | 1.8% | 1.9% | 7.5% | 8.9% | 7.1% |
| 1982 | -2.1% | -4.4% | 9.5% | 3.8% | 3.6% |
| | | **1983 - 1991 Cycle** | | | |
| 1983 | 4.0% | 3.7% | 9.5% | 3.8% | 0.6% |
| 1984 | 6.8% | 9.3% | 7.5% | 3.9% | 1.7% |
| 1985 | 3.7% | 1.7% | 7.2% | 3.8% | 1.8% |
| 1986 | 3.1% | 0.9% | 7.0% | 1.1% | -2.3% |
| 1987 | 2.9% | 4.9% | 6.2% | 4.4% | 2.2% |
| 1988 | 3.8% | 4.5% | 5.5% | 4.4% | 4.0% |
| 1989 | 3.5% | 1.8% | 5.3% | 4.6% | 4.9% |
| 1990 | 1.8% | -0.2% | 5.6% | 6.1% | 5.7% |
| 1991 | -0.5% | -2.0% | 6.8% | 3.1% | -0.1% |
| | | **1992 - 2001 Cycle** | | | |
| 1992 | 3.0% | 3.1% | 7.5% | 2.9% | 1.6% |
| 1993 | 2.7% | 3.3% | 6.9% | 2.7% | 0.2% |
| 1994 | 4.0% | 5.4% | 6.1% | 2.7% | 1.7% |
| 1995 | 2.5% | 4.8% | 5.6% | 2.5% | 2.3% |
| 1996 | 3.7% | 4.3% | 5.4% | 3.3% | 2.8% |
| 1997 | 4.5% | 7.2% | 4.9% | 1.7% | -1.2% |
| 1998 | 4.2% | 5.9% | 4.5% | 1.6% | 0.0% |
| 1999 | 4.5% | 4.3% | 4.2% | 2.7% | 2.9% |
| 2000 | 3.7% | 4.2% | 4.0% | 3.4% | 3.6% |
| 2001 | 0.8% | -3.4% | 4.7% | 1.6% | -1.6% |
| | | **Current Cycle** | | | |
| 2002 | 1.6% | -0.1% | 5.8% | 2.4% | 1.2% |
| 2003 | 2.5% | 1.3% | 6.0% | 1.9% | 4.0% |
| 2004 | 3.6% | 2.5% | 5.5% | 3.3% | 4.2% |
| 2005 | 2.9% | 3.3% | 5.1% | 3.4% | 5.4% |
| 2006 | 2.8% | 2.3% | 4.6% | 2.5% | 1.1% |
| 2007 | 2.0% | 1.5% | 4.6% | 4.1% | 6.2% |
| 2008 | 1.1% | -2.2% | 5.8% | 0.1% | -0.9% |

*GDP=Gross Domestic Product

Source: Council of Economic Advisors, Economic Indicators, various issues.

# ECONOMIC INDICATORS

| Year | Real GDP Growth* | Industrial Production Growth | Unemploy-ment Rate | Consumer Price Index | Producer Price Index |
|---|---|---|---|---|---|
| **2002** | | | | | |
| 1st Qtr. | 2.7% | -3.8% | 5.6% | 2.8% | 4.4% |
| 2nd Qtr. | 2.2% | -1.2% | 5.9% | 0.9% | -2.0% |
| 3rd Qtr. | 2.4% | 0.8% | 5.8% | 2.4% | 1.2% |
| 4th Qtr. | 0.2% | 1.4% | 5.9% | 1.6% | 0.4% |
| **2003** | | | | | |
| 1st Qtr. | 1.2% | 1.1% | 5.8% | 4.8% | 5.6% |
| 2nd Qtr. | 3.5% | -0.9% | 6.2% | 0.0% | -0.5% |
| 3rd Qtr. | 7.5% | -0.9% | 6.1% | 3.2% | 3.2% |
| 4th Qtr. | 2.7% | 1.5% | 5.9% | -0.3% | 2.8% |
| **2004** | | | | | |
| 1st Qtr. | 3.0% | 2.8% | 5.6% | 5.2% | 5.2% |
| 2nd Qtr. | 3.5% | 4.9% | 5.6% | 4.4% | 4.4% |
| 3rd Qtr. | 3.6% | 4.6% | 5.4% | 0.8% | 0.8% |
| 4th Qtr. | 2.5% | 4.3% | 5.4% | 3.6% | 7.2% |
| **2005** | | | | | |
| 1st Qtr. | 3.0% | 3.8% | 5.3% | 4.4% | 5.6% |
| 2nd Qtr. | 2.6% | 3.0% | 5.1% | 1.6% | -0.4% |
| 3rd Qtr. | 3.8% | 2.7% | 5.0% | 8.8% | 14.0% |
| 4th Qtr. | 1.3% | 2.9% | 4.9% | -2.0% | 4.0% |
| **2006** | | | | | |
| 1st Qtr. | 4.8% | 3.4% | 4.7% | 4.8% | -0.2% |
| 2nd Qtr. | 2.7% | 4.5% | 4.6% | 4.8% | 5.6% |
| 3rd Qtr. | 0.8% | 5.2% | 4.7% | 0.4% | -4.4% |
| 4th Qtr. | 1.5% | 3.5% | 4.5% | 0.0% | 3.6% |
| **2007** | | | | | |
| 1st Qtr. | 0.1% | 2.5% | 4.5% | 4.8% | 6.4% |
| 2nd Qtr. | 4.8% | 1.6% | 4.5% | 5.2% | 6.8% |
| 3rd Qtr. | 4.8% | 1.8% | 4.6% | 1.2% | 1.2% |
| 4th Qtr. | -0.2% | 2.2% | 4.8% | 6.4% | 10.8% |
| **2008** | | | | | |
| 1st Qtr. | 0.9% | 1.8% | 4.9% | 2.8% | 9.6% |
| 2nd Qtr. | 2.8% | -0.4% | 5.3% | 7.6% | 14.0% |
| 3rd Qtr. | -0.3% | -3.2% | 6.0% | 2.8% | -0.4% |
| 4th Qtr. | -3.8% | -6.6% | 6.9% | -13.6% | -27.6% |
| **2009** | | | | | |
| 1st Qtr. | -6.1% | -11.8% | 8.1% | 2.4% | -1.2% |

Source: Council of Economic Advisors, Economic Indicators, various issues.

# INTEREST RATES

| Year | Prime Rate | US Treas T Bills 3 Month | US Treas T Bonds 10 Year | Utility Bonds Aaa | Utility Bonds Aa | Utility Bonds A | Utility Bonds Baa |
|---|---|---|---|---|---|---|---|
| | | | **1975 - 1982 Cycle** | | | | |
| 1975 | 7.86% | 5.84% | 7.99% | 9.03% | 9.44% | 10.09% | 10.96% |
| 1976 | 6.84% | 4.99% | 7.61% | 8.63% | 8.92% | 9.29% | 9.82% |
| 1977 | 6.83% | 5.27% | 7.42% | 8.19% | 8.43% | 8.61% | 9.06% |
| 1978 | 9.06% | 7.22% | 8.41% | 8.87% | 9.10% | 9.29% | 9.62% |
| 1979 | 12.67% | 10.04% | 9.44% | 9.86% | 10.22% | 10.49% | 10.96% |
| 1980 | 15.27% | 11.51% | 11.46% | 12.30% | 13.00% | 13.34% | 13.95% |
| 1981 | 18.89% | 14.03% | 13.93% | 14.64% | 15.30% | 15.95% | 16.60% |
| 1982 | 14.86% | 10.69% | 13.00% | 14.22% | 14.79% | 15.86% | 16.45% |
| | | | **1983 - 1991 Cycle** | | | | |
| 1983 | 10.79% | 8.63% | 11.10% | 12.52% | 12.83% | 13.66% | 14.20% |
| 1984 | 12.04% | 9.58% | 12.44% | 12.72% | 13.66% | 14.03% | 14.53% |
| 1985 | 9.93% | 7.48% | 10.62% | 11.68% | 12.06% | 12.47% | 12.96% |
| 1986 | 8.33% | 5.98% | 7.68% | 8.92% | 9.30% | 9.58% | 10.00% |
| 1987 | 8.21% | 5.82% | 8.39% | 9.52% | 9.77% | 10.10% | 10.53% |
| 1988 | 9.32% | 6.69% | 8.85% | 10.05% | 10.26% | 10.49% | 11.00% |
| 1989 | 10.87% | 8.12% | 8.49% | 9.32% | 9.56% | 9.77% | 9.97% |
| 1990 | 10.01% | 7.51% | 8.55% | 9.45% | 9.65% | 9.86% | 10.06% |
| 1991 | 8.46% | 5.42% | 7.86% | 8.85% | 9.09% | 9.36% | 9.55% |
| | | | **1992 - 2001 Cycle** | | | | |
| 1992 | 6.25% | 3.45% | 7.01% | 8.19% | 8.55% | 8.69% | 8.86% |
| 1993 | 6.00% | 3.02% | 5.87% | 7.29% | 7.44% | 7.59% | 7.91% |
| 1994 | 7.15% | 4.29% | 7.09% | 8.07% | 8.21% | 8.31% | 8.63% |
| 1995 | 8.83% | 5.51% | 6.57% | 7.68% | 7.77% | 7.89% | 8.29% |
| 1996 | 8.27% | 5.02% | 6.44% | 7.48% | 7.57% | 7.75% | 8.16% |
| 1997 | 8.44% | 5.07% | 6.35% | 7.43% | 7.54% | 7.60% | 7.95% |
| 1998 | 8.35% | 4.81% | 5.26% | 6.77% | 6.91% | 7.04% | 7.26% |
| 1999 | 8.00% | 4.66% | 5.65% | 7.21% | 7.51% | 7.62% | 7.88% |
| 2000 | 9.23% | 5.85% | 6.03% | 7.88% | 8.06% | 8.24% | 8.36% |
| 2001 | 6.91% | 3.45% | 5.02% | 7.47% | 7.59% | 7.78% | 8.02% |
| | | | **Current Cycle** | | | | |
| 2002 | 4.67% | 1.62% | 4.61% | [1] | 7.19% | 7.37% | 8.02% |
| 2003 | 4.12% | 1.02% | 4.01% | | 6.40% | 6.58% | 6.84% |
| 2004 | 4.34% | 1.38% | 4.27% | | 6.04% | 6.16% | 6.40% |
| 2005 | 6.19% | 3.16% | 4.29% | | 5.44% | 5.65% | 5.93% |
| 2006 | 7.96% | 4.73% | 4.80% | | 5.84% | 6.07% | 6.32% |
| 2007 | 8.05% | 4.41% | 4.63% | | 5.94% | 6.07% | 6.33% |
| 2008 | 5.09% | 1.48% | 3.66% | | 6.18% | 6.53% | 7.25% |

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

## INTEREST RATES

| Year | Prime Rate | US Treas T Bills 1 Month | US Treas T Bonds 10 Year | Utility Bonds Aaa | Utility Bonds Aa | Utility Bonds A | Utility Bonds Baa |
|---|---|---|---|---|---|---|---|
| **2003** | | | | | | | |
| Jan | 4.25% | 1.17% | 4.05% | [1] | 6.87% | 7.06% | 7.47% |
| Feb | 4.25% | 1.16% | 3.90% | | 6.68% | 6.93% | 7.17% |
| Mar | 4.25% | 1.13% | 3.81% | | 6.56% | 6.79% | 7.05% |
| Apr | 4.25% | 1.14% | 3.96% | | 6.47% | 6.84% | 6.94% |
| May | 4.25% | 1.08% | 3.57% | | 6.20% | 6.36% | 6.47% |
| June | 4.00% | 0.95% | 3.33% | | 6.12% | 6.21% | 6.30% |
| July | 4.00% | 0.90% | 3.98% | | 6.37% | 6.57% | 6.67% |
| Aug | 4.00% | 0.96% | 4.45% | | 6.48% | 6.78% | 7.08% |
| Sept | 4.00% | 0.95% | 4.27% | | 6.30% | 6.56% | 6.87% |
| Oct | 4.00% | 0.93% | 4.29% | | 6.28% | 6.43% | 6.79% |
| Nov | 4.00% | 0.94% | 4.30% | | 6.28% | 6.37% | 6.69% |
| Dec | 4.00% | 0.90% | 4.27% | | 6.18% | 6.27% | 6.61% |
| **2004** | | | | | | | |
| Jan | 4.00% | 0.89% | 4.15% | | 6.06% | 6.15% | 6.47% |
| Feb | 4.00% | 0.92% | 4.08% | | 6.10% | 6.15% | 6.28% |
| Mar | 4.00% | 0.94% | 3.83% | | 5.93% | 5.97% | 6.12% |
| Apr | 4.00% | 0.94% | 4.35% | | 6.33% | 6.35% | 6.48% |
| May | 4.00% | 1.04% | 4.72% | | 6.66% | 6.62% | 6.75% |
| June | 4.00% | 1.27% | 4.73% | | 6.30% | 6.46% | 6.84% |
| July | 4.25% | 1.35% | 4.50% | | 6.09% | 6.27% | 6.67% |
| Aug | 4.50% | 1.48% | 4.28% | | 5.95% | 6.14% | 6.45% |
| Sept | 4.75% | 1.65% | 4.13% | | 5.79% | 5.98% | 6.27% |
| Oct | 4.75% | 1.75% | 4.10% | | 5.74% | 5.94% | 6.17% |
| Nov | 5.00% | 2.06% | 4.19% | | 5.79% | 5.97% | 6.16% |
| Dec | 5.25% | 2.20% | 4.23% | | 5.78% | 5.92% | 6.10% |
| **2005** | | | | | | | |
| Jan | 5.25% | 2.32% | 4.22% | | 5.68% | 5.78% | 5.95% |
| Feb | 5.50% | 2.53% | 4.17% | | 5.55% | 5.61% | 5.76% |
| Mar | 5.75% | 2.75% | 4.50% | | 5.76% | 5.83% | 6.01% |
| Apr | 5.75% | 2.79% | 4.34% | | 5.56% | 5.64% | 5.95% |
| May | 6.00% | 2.86% | 4.14% | | 5.39% | 5.53% | 5.88% |
| June | 6.25% | 2.99% | 4.00% | | 5.05% | 5.40% | 5.70% |
| July | 6.25% | 3.22% | 4.18% | | 5.18% | 5.51% | 5.81% |
| Aug | 6.50% | 3.45% | 4.26% | | 5.23% | 5.50% | 5.80% |
| Sept | 6.75% | 3.47% | 4.20% | | 5.27% | 5.52% | 5.83% |
| Oct | 6.75% | 3.70% | 4.46% | | 5.50% | 5.79% | 6.08% |
| Nov | 7.00% | 3.90% | 4.54% | | 5.59% | 5.88% | 6.19% |
| Dec | 7.25% | 3.89% | 4.47% | | 5.55% | 5.80% | 6.14% |
| **2006** | | | | | | | |
| Jan | 7.50% | 4.20% | 4.42% | | 5.50% | 5.75% | 6.06% |
| Feb | 7.50% | 4.41% | 4.57% | | 5.55% | 5.82% | 6.11% |
| Mar | 7.75% | 4.51% | 4.72% | | 5.71% | 5.98% | 6.28% |
| Apr | 7.75% | 4.59% | 4.99% | | 6.02% | 6.29% | 6.54% |
| May | 8.00% | 4.72% | 5.11% | | 6.16% | 6.42% | 6.59% |
| June | 8.25% | 4.79% | 5.11% | | 6.18% | 6.40% | 6.61% |
| July | 8.25% | 4.96% | 5.09% | | 6.13% | 6.37% | 6.61% |
| Aug | 8.25% | 4.98% | 4.88% | | 5.97% | 6.20% | 6.43% |
| Sept | 8.25% | 4.82% | 4.72% | | 5.81% | 6.00% | 6.26% |
| Oct | 8.25% | 4.89% | 4.73% | | 5.80% | 5.98% | 6.24% |
| Nov | 8.25% | 4.95% | 4.60% | | 5.61% | 5.80% | 6.04% |
| Dec | 8.25% | 4.85% | 4.56% | | 5.62% | 5.81% | 6.05% |
| **2007** | | | | | | | |
| Jan | 8.25% | 4.96% | 4.76% | | 5.78% | 5.96% | 6.18% |
| Feb | 8.25% | 5.02% | 4.72% | | 5.73% | 5.90% | 6.10% |
| Mar | 8.25% | 4.97% | 4.56% | | 5.66% | 5.85% | 6.10% |
| Apr | 8.25% | 4.88% | 4.69% | | 5.83% | 5.97% | 6.24% |
| May | 8.25% | 4.77% | 4.75% | | 5.86% | 5.99% | 6.23% |
| June | 8.25% | 4.63% | 5.10% | | 6.18% | 6.30% | 6.54% |
| July | 8.25% | 4.84% | 5.00% | | 6.11% | 6.25% | 6.48% |
| Aug | 8.25% | 4.34% | 4.67% | | 6.11% | 6.24% | 6.51% |
| Sept | 7.75% | 4.01% | 4.52% | | 6.10% | 6.18% | 6.45% |
| Oct | 7.50% | 3.97% | 4.53% | | 6.04% | 6.11% | 6.36% |
| Nov | 7.50% | 3.49% | 4.15% | | 5.87% | 5.97% | 6.27% |
| Dec | 7.25% | 3.08% | 4.10% | | 6.03% | 6.16% | 6.51% |
| **2008** | | | | | | | |
| Jan | 6.00% | 2.86% | 3.74% | | 5.87% | 6.02% | 6.35% |
| Feb | 6.00% | 2.21% | 3.74% | | 6.04% | 6.21% | 6.60% |
| Mar | 5.25% | 1.38% | 3.51% | | 5.99% | 6.21% | 6.68% |
| Apr | 5.00% | 1.32% | 3.68% | | 5.99% | 6.29% | 6.82% |
| May | 5.00% | 1.71% | 3.88% | | 6.07% | 6.27% | 6.79% |
| June | 5.00% | 1.90% | 4.10% | | 6.19% | 6.38% | 6.93% |
| July | 5.00% | 1.72% | 4.01% | | 6.13% | 6.40% | 6.97% |
| Aug | 5.00% | 1.79% | 3.89% | | 6.09% | 6.37% | 6.98% |
| Sept | 5.00% | 1.46% | 3.89% | | 6.13% | 6.49% | 7.15% |
| Oct | 4.00% | 0.84% | 3.81% | | 6.95% | 7.56% | 8.58% |
| Nov | 4.00% | 0.30% | 3.53% | | 6.83% | 7.60% | 8.98% |
| Dec | 3.25% | 0.04% | 2.42% | | 5.93% | 6.54% | 8.13% |
| **2009** | | | | | | | |
| Jan | 3.25% | 0.12% | 2.52% | | 6.01% | 6.39% | 7.90% |
| Feb | 3.25% | 0.31% | 2.87% | | 6.11% | 6.30% | 7.74% |
| Mar | 3.25% | 0.25% | 2.82% | | 6.14% | 6.42% | 8.00% |
| Apr | 3.25% | 0.17% | 2.93% | | 6.20% | 6.48% | 8.03% |

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

# STOCK PRICE INDICATORS

| Year | S&P Composite [1] | NASDAQ Composite [1] | DJIA | S&P D/P | S&P E/P |
|---|---|---|---|---|---|
| | | **1975 - 1982 Cycle** | | | |
| 1975 | | | 802.49 | 4.31% | 9.15% |
| 1976 | | | 974.92 | 3.77% | 8.90% |
| 1977 | | | 894.63 | 4.62% | 10.79% |
| 1978 | | | 820.23 | 5.28% | 12.03% |
| 1979 | | | 844.40 | 5.47% | 13.46% |
| 1980 | | | 891.41 | 5.26% | 12.66% |
| 1981 | | | 932.92 | 5.20% | 11.96% |
| 1982 | | | 884.36 | 5.81% | 11.60% |
| | | **1983 - 1991 Cycle** | | | |
| 1983 | | | 1,190.34 | 4.40% | 8.03% |
| 1984 | | | 1,178.48 | 4.64% | 10.02% |
| 1985 | | | 1,328.23 | 4.25% | 8.12% |
| 1986 | | | 1,792.76 | 3.49% | 6.09% |
| 1987 | | | 2,275.99 | 3.08% | 5.48% |
| 1988 | [1] | [1] | 2,060.82 | 3.64% | 8.01% |
| 1989 | 322.84 | | 2,508.91 | 3.45% | 7.41% |
| 1990 | 334.59 | | 2,678.94 | 3.61% | 6.47% |
| 1991 | 376.18 | 491.69 | 2,929.33 | 3.24% | 4.79% |
| | | **1992 - 2001 Cycle** | | | |
| 1992 | $415.74 | $599.26 | 3,284.29 | 2.99% | 4.22% |
| 1993 | $451.21 | 715.16 | 3,522.06 | 2.78% | 4.46% |
| 1994 | $460.42 | 751.65 | 3,793.77 | 2.82% | 5.83% |
| 1995 | 541.72 | 925.19 | 4,493.76 | 2.56% | 6.09% |
| 1996 | 670.50 | 1,164.96 | 5,742.89 | 2.19% | 5.24% |
| 1997 | 873.43 | 1,469.49 | 7,441.15 | 1.77% | 4.57% |
| 1998 | 1,085.50 | 1,794.91 | 8,625.52 | 1.49% | 3.46% |
| 1999 | 1,327.33 | 2,728.15 | 10,464.88 | 1.25% | 3.17% |
| 2000 | 1,427.22 | 3,783.67 | 10,734.90 | 1.15% | 3.63% |
| 2001 | 1,194.18 | 2,035.00 | 10,189.13 | 1.32% | 2.95% |
| | | **Current Cycle** | | | |
| 2002 | 993.94 | 1,539.73 | 9,226.43 | 1.61% | 2.92% |
| 2003 | 965.23 | 1,647.17 | 8,993.59 | 1.77% | 3.84% |
| 2004 | 1,130.65 | 1,986.53 | 10,317.39 | 1.72% | 4.89% |
| 2005 | 1,207.23 | 2,099.32 | 10,547.67 | 1.83% | 5.36% |
| 2006 | 1,310.46 | 2,263.41 | 11,408.67 | 1.87% | 5.78% |
| 2007 | 1,477.19 | 2,578.47 | 13,169.98 | 1.86% | 5.29% |
| 2008 | 1,220.04 | 2,161.65 | 11,252.62 | 2.37% | 3.55% |

[1] Note: this source did not publish the S&P Composite prior to 1988 and the NASDAQ Composite prior to 1991.

Source: Council of Economic Advisors, Economic Indicators, various issues.

## STOCK PRICE INDICATORS

| YEAR | S&P Composite | NASDAQ Composite | DJIA | S&P D/P | S&P E/P |
|---|---|---|---|---|---|
| **2002** | | | | | |
| 1st Qtr. | 1,131.56 | 1,879.85 | 10,105.27 | 1.39% | 2.15% |
| 2nd Qtr. | 1,068.45 | 1,641.53 | 9,912.70 | 1.49% | 2.70% |
| 3rd Qtr. | 894.65 | 1,308.17 | 8,487.59 | 1.76% | 3.68% |
| 4th Qtr. | 887.91 | 1,346.07 | 8,400.17 | 1.79% | 3.14% |
| **2003** | | | | | |
| 1st Qtr. | 860.03 | 1,350.44 | 8,122.83 | 1.89% | 3.57% |
| 2nd Qtr. | 938.00 | 1,521.92 | 8,684.52 | 1.75% | 3.55% |
| 3rd Qtr. | 1,000.50 | 1,765.96 | 9,310.57 | 1.74% | 3.87% |
| 4th Qtr. | 1,056.42 | 1,934.71 | 9,856.44 | 1.69% | 4.38% |
| **2004** | | | | | |
| 1st Qtr. | 1,133.29 | 2,041.95 | 10,488.43 | 1.64% | 4.62% |
| 2nd Qtr. | 1,122.87 | 1,984.13 | 10,289.04 | 1.71% | 4.92% |
| 3rd Qtr. | 1,104.15 | 1,872.90 | 10,129.85 | 1.79% | 5.18% |
| 4th Qtr. | 1,162.07 | 2,050.22 | 10,362.25 | 1.75% | 4.83% |
| **2005** | | | | | |
| 1st Qtr. | 1,191.98 | 2,056.01 | 10,648.48 | 1.77% | 5.11% |
| 2nd Qtr. | 1,181.65 | 2,012.24 | 10,382.35 | 1.85% | 5.32% |
| 3rd Qtr. | 1,225.91 | 2,144.61 | 10,532.24 | 1.83% | 5.42% |
| 4th Qtr. | 1,262.07 | 2,246.09 | 10,827.79 | 1.86% | 5.60% |
| **2006** | | | | | |
| 1st Qtr. | 1,283.04 | 2,287.97 | 10,996.04 | 1.85% | 5.61% |
| 2nd Qtr. | 1,281.77 | 2,240.46 | 11,188.84 | 1.90% | 5.86% |
| 3rd Qtr. | 1,288.40 | 2,141.97 | 11,274.49 | 1.91% | 5.88% |
| 4th Qtr. | 1,389.48 | 2,390.26 | 12,175.30 | 1.81% | 5.75% |
| **2007** | | | | | |
| 1st Qtr. | 1,425.30 | 2,444.85 | 12,470.97 | 1.84% | 5.85% |
| 2nd Qtr. | 1,496.43 | 2,552.37 | 13,214.26 | 1.82% | 5.65% |
| 3rd Qtr. | 1,490.81 | 2,609.68 | 13,488.43 | 1.86% | 5.15% |
| 4th Qtr. | 1,494.09 | 2,701.59 | 13,502.95 | 1.91% | 4.51% |
| **2008** | | | | | |
| 1st Qtr. | 1,350.19 | 2,332.91 | 12,383.86 | 2.11% | 4.55% |
| 2nd Qtr. | 1,371.65 | 2,426.26 | 12,508.59 | 2.10% | 4.05% |
| 3rd Qtr. | 1,251.94 | 2,290.87 | 11,322.40 | 2.29% | 3.94% |
| 4th Qtr. | 909.80 | 1,599.64 | 8,795.61 | 2.98% | 1.65% |
| 2009 | | | | | |
| 1st Qtr. | 809.31 | 1,485.14 | 7,774.06 | 3.00% | |

[1] Note: this source did not publish the S&P Composite prior to 1988 and the NASDAQ Composite prior to 1991.

Source: Council of Economic Advisors, Economic Indicators, various issues.

Exhibit___(DCP-1)
Schedule 3

# ARIZONA WATER COMPANY
# CAPITAL STRUCTURE RATIOS
# 2006 - 2008

| YEAR | COMMON EQUITY | LONG-TERM DEBT | NOTES PAYABLE |
|---|---|---|---|
| 2006 | $71,388,102 | $40,000,000 | $7,800,000 |
| | 59.9% | 33.6% | 6.5% |
| | 64.1% | 35.9% | |
| 2007 | $71,015,718 | $40,000,000 | $32,000,000 |
| | 49.7% | 28.0% | 22.4% |
| | 64.0% | 36.0% | |
| 2008 | $69,671,689 | $75,000,000 | $7,300,000 |
| | 45.8% | 49.4% | 4.8% |
| | 48.2% | 51.8% | |

Source: Response to Staff Data Request 7.1 and 7.07.

Exhibit___(DCP-1)
Schedule 4

# PROXY WATER UTILITIES
# COMMON EQUITY RATIOS

| COMPANY | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | |
| American States Water Co. | 48% | 47% | 50% | 50% | 54% |
| Aqua America, Inc. | 45% | 44% | 38% | 43% | 44% |
| California Water Service Group | 51% | 51% | 55% | 57% | 55% |
| Southwest Water Co. | 63% | 53% | 56% | 52% | 45% |
| Average | 52% | 49% | 50% | 51% | 50% |
| **AUS Utility Reports Group** | | | | | |
| American States Water Co. | 48% | 47% | 50% | 50% | 54% |
| Aqua America, Inc. | 45% | 44% | 38% | 43% | 44% |
| Artesian Resources Corp. | 36% | 38% | 38% | 48% | 45% |
| California Water Service Group | 51% | 51% | 55% | 57% | 55% |
| Connecticut Water Service, Inc. | 53% | 55% | 54% | 50% | 53% |
| Middlesex Water | 46% | 42% | 49% | 48% | 50% |
| SJW Corporation | 56% | 57% | 56% | 52% | 52% |
| Southwest Water Co. | 63% | 53% | 56% | 52% | 45% |
| York Water Company | 48% | 46% | 51% | 48% | 45% |
| Average | 50% | 48% | 50% | 50% | 49% |
| **Zepp Water Sample Group** | | | | | |
| American States Water Co. | 48% | 47% | 50% | 50% | 54% |
| Aqua America, Inc. | 45% | 44% | 38% | 43% | 44% |
| California Water Service Group | 51% | 51% | 55% | 57% | 55% |
| Connecticut Water Service, Inc. | 53% | 55% | 54% | 50% | 53% |
| Middlesex Water | 46% | 42% | 49% | 48% | 50% |
| SJW Corporation | 56% | 57% | 56% | 52% | 52% |
| Average | 50% | 49% | 50% | 50% | 51% |

Source: AUS Utilitly Reports.

# PROXY WATER UTILITIES
# DIVIDEND YIELD

| COMPANY | DPS | February - April, 2009 HIGH | LOW | AVERAGE | YIELD |
|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | |
| American States Water Co. | $1.00 | $38.79 | $29.76 | $34.28 | 2.9% |
| Aqua America, Inc. | $0.54 | $21.50 | $16.59 | $19.05 | 2.8% |
| California Water Service Group | $1.18 | $46.19 | $35.66 | $40.93 | 2.9% |
| Southwest Water Co. | $0.10 | $5.85 | $3.67 | $4.76 | 2.1% |
| Average | | | | | **2.7%** |
| **AUS Utility Reports Group** | | | | | |
| American States Water Co. | $1.00 | $38.79 | $29.76 | $34.28 | 2.9% |
| Aqua America, Inc. | $0.54 | $21.50 | $16.59 | $19.05 | 2.8% |
| Artesian Resources Corp. | $0.71 | $16.00 | $12.81 | $14.41 | 4.9% |
| California Water Service Group | $1.18 | $46.19 | $35.66 | $40.93 | 2.9% |
| Connecticut Water Service, Inc. | $0.89 | $24.76 | $17.31 | $21.04 | 4.2% |
| Middlesex Water | $0.71 | $17.71 | $11.64 | $14.68 | 4.9% |
| SJW Corporation | $0.66 | $29.22 | $18.22 | $23.72 | 2.8% |
| Southwest Water Co. | $0.10 | $5.85 | $3.67 | $4.76 | 2.1% |
| York Water Company | $0.50 | $14.51 | $9.74 | $12.13 | 4.2% |
| Average | | | | | **3.5%** |
| **Zepp Water Sample Group** | | | | | |
| American States Water Co. | $1.00 | $38.79 | $29.76 | $34.28 | 2.9% |
| Aqua America, Inc. | $0.54 | $21.50 | $16.59 | $19.05 | 2.8% |
| California Water Service Group | $1.18 | $46.19 | $35.66 | $40.93 | 2.9% |
| Connecticut Water Service, Inc. | $0.89 | $24.76 | $17.31 | $21.04 | 4.2% |
| Middlesex Water | $0.71 | $17.71 | $11.64 | $14.68 | 4.9% |
| SJW Corporation | $0.66 | $29.22 | $18.22 | $23.72 | 2.8% |
| Average | | | | | **3.4%** |

Source: Yahoo! Finance.

# PROXY WATER UTILITIES
# RETENTION GROWTH RATES

| COMPANY | 2004 | 2005 | 2006 | 2007 | 2008 | Average | 2009 | 2010 | '12-'14 | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | | | |
| American States Water Co. | 1.2% | 3.3% | 2.6% | 3.8% | 2.6% | 2.7% | 4.0% | 4.5% | 6.5% | 5.0% |
| Aqua America, Inc. | 4.8% | 5.0% | 4.1% | 3.2% | 2.9% | 4.0% | 2.5% | 3.0% | 5.0% | 3.5% |
| California Water Service Group | 2.2% | 2.1% | 1.1% | 1.1% | 3.9% | 2.1% | 4.5% | 4.5% | 6.0% | 5.0% |
| Southwest Water Co. | 1.5% | 2.2% | 2.7% | -1.3% | | 1.3% | | | | |
| Average | | | | | | **2.5%** | | | | **4.5%** |
| **AUS Utility Reports Group** | | | | | | | | | | |
| American States Water Co. | 1.2% | 3.3% | 2.6% | 3.8% | 2.6% | 2.7% | 4.0% | 4.5% | 6.5% | 5.0% |
| Aqua America, Inc. | 4.8% | 5.0% | 4.1% | 3.2% | 2.9% | 4.0% | 2.5% | 3.0% | 5.0% | 3.5% |
| Artesian Resources Corp. | 2.0% | 2.8% | 4.0% | 2.4% | 1.4% | 2.5% | | | | |
| California Water Service Group | 2.2% | 2.1% | 1.1% | 1.1% | 3.9% | 2.1% | 4.5% | 4.5% | 6.0% | 5.0% |
| Connecticut Water Service, Inc. | 3.1% | 0.4% | -0.5% | 1.5% | 1.9% | 1.3% | | | | |
| Middlesex Water | 0.8% | 0.5% | 1.5% | 1.8% | 1.9% | 1.3% | | | | |
| SJW Corporation | 4.7% | 6.1% | 9.5% | 3.4% | 4.5% | 5.6% | | | | |
| Southwest Water Co. | 1.5% | 2.2% | 2.7% | -1.3% | | 1.3% | | | | |
| York Water Company | 2.5% | 3.0% | 2.4% | 1.5% | 1.3% | 2.1% | | | | |
| Average | | | | | | **2.5%** | | | | **4.5%** |
| **Zepp Water Sample Group** | | | | | | | | | | |
| American States Water Co. | 1.2% | 3.3% | 2.6% | 3.8% | 2.6% | 2.7% | 4.0% | 4.5% | 6.5% | 5.0% |
| Aqua America, Inc. | 4.8% | 5.0% | 4.1% | 3.2% | 2.9% | 4.0% | 2.5% | 3.0% | 5.0% | 3.5% |
| California Water Service Group | 2.2% | 2.1% | 1.1% | 1.1% | 3.9% | 2.1% | 4.5% | 4.5% | 6.0% | 5.0% |
| Connecticut Water Service, Inc. | 3.1% | 0.4% | -0.5% | 1.5% | 1.9% | 1.3% | | | | |
| Middlesex Water | 0.8% | 0.5% | 1.5% | 1.8% | 1.9% | 1.3% | | | | |
| SJW Corporation | 4.7% | 6.1% | 9.5% | 3.4% | 4.5% | 5.6% | | | | |
| Average | | | | | | **2.8%** | | | | **4.5%** |

Source: AUS Utility Reports and Value Line Investment Survey.

# PROXY WATER UTILITIES
# PER SHARE GROWTH RATES

| COMPANY | 5-Year Historic Growth Rates | | | | Est'd '06-'08 to '12-'14 Growth Rates | | | |
|---|---|---|---|---|---|---|---|---|
| | EPS | DPS | BVPS | Average | EPS | DPS | BVPS | Average |
| **Value Line Water Group** | | | | | | | | |
| American States Water Co. | 14.7% | 2.6% | 5.1% | 7.5% | 9.5% | 5.0% | 3.0% | 5.8% |
| Aqua America, Inc. | 5.1% | 7.8% | 7.9% | 6.9% | 10.0% | 3.5% | 6.5% | 6.7% |
| California Water Service Group | 9.4% | 0.9% | 6.1% | 5.5% | 9.0% | 2.5% | 3.0% | 4.8% |
| Southwest Water Co. | | 8.5% | | 8.5% | | | | |
| Average | | | | **7.1%** | | | | **5.8%** |
| **AUS Utility Reports Group** | | | | | | | | |
| American States Water Co. | 14.7% | 2.6% | 5.1% | 7.5% | 9.5% | 5.0% | 3.0% | 5.8% |
| Aqua America, Inc. | 5.1% | 7.8% | 7.9% | 6.9% | 10.0% | 3.5% | 6.5% | 6.7% |
| Artesian Resources Corp. | 5.7% | 6.0% | 5.6% | 5.8% | | | | |
| California Water Service Group | 9.4% | 0.9% | 6.1% | 5.5% | 9.0% | 2.5% | 3.0% | 4.8% |
| Connecticut Water Service, Inc. | -0.7% | 1.2% | 3.2% | 1.2% | | | | |
| Middlesex Water | 7.9% | 1.5% | 6.2% | 5.2% | | | | |
| SJW Corporation | 3.5% | 5.8% | 9.0% | 6.1% | | | | |
| Southwest Water Co. | | 8.5% | | 8.5% | | | | |
| York Water Company | 3.9% | 5.8% | 8.6% | 6.1% | | | | |
| Average | | | | **5.9%** | | | | **5.8%** |
| **Zepp Water Sample Group** | | | | | | | | |
| American States Water Co. | 14.7% | 2.6% | 5.1% | 7.5% | 9.5% | 5.0% | 3.0% | 5.8% |
| Aqua America, Inc. | 5.1% | 7.8% | 7.9% | 6.9% | 10.0% | 3.5% | 6.5% | 6.7% |
| California Water Service Group | 9.4% | 0.9% | 6.1% | 5.5% | 9.0% | 2.5% | 3.0% | 4.8% |
| Connecticut Water Service, Inc. | -0.7% | 1.2% | 3.2% | 1.2% | | | | |
| Middlesex Water | 7.9% | 1.5% | 6.2% | 5.2% | | | | |
| SJW Corporation | 3.5% | 5.8% | 9.0% | 6.1% | | | | |
| Average | | | | **5.4%** | | | | **5.8%** |

Source: AUS Utility Reports and Value Line Investment Survey.

# PROXY WATER UTILITIES
## DCF COST RATES

| COMPANY | ADJUSTED YIELD | HISTORIC RETENTION GROWTH | PROSPECTIVE RETENTION GROWTH | HISTORIC PER SHARE GROWTH | PROSPECTIVE PER SHARE GROWTH | FIRST CALL EPS GROWTH | AVERAGE GROWTH | DCF RATES |
|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | |
| American States Water Co. | 3.0% | 2.7% | 5.0% | 7.5% | 5.8% | 4.0% | 5.0% | 8.0% |
| Aqua America, Inc. | 2.9% | 4.0% | 3.5% | 6.9% | 6.7% | 7.5% | 5.7% | 8.6% |
| California Water Service Group | 3.0% | 2.1% | 5.0% | 5.5% | 4.8% | 6.3% | 4.7% | 7.7% |
| Southwest Water Co. | 2.2% | 1.3% | | 8.5% | | 5.0% | 4.9% | 7.1% |
| Mean | 2.8% | 2.5% | 4.5% | 7.1% | 5.8% | 5.7% | 5.1% | 7.8% |
| Median | 2.9% | 2.4% | 5.0% | 7.2% | 5.8% | 5.7% | 5.0% | 7.8% |
| Composite-Mean | | 5.3% | 7.3% | 9.8% | 8.5% | 8.5% | 7.8% | |
| Composite-Median | | 5.3% | 7.9% | 10.1% | 8.8% | 8.6% | 7.9% | |
| **AUS Utility Reports Group** | | | | | | | | |
| American States Water Co. | 3.0% | 2.7% | 5.0% | 7.5% | 5.8% | 4.0% | 5.0% | 8.0% |
| Aqua America, Inc. | 2.9% | 4.0% | 3.5% | 6.9% | 6.7% | 7.5% | 5.7% | 8.6% |
| Artesian Resources Corp. | 5.1% | 2.5% | | 5.8% | | 6.0% | 4.8% | 9.8% |
| California Water Service Group | 3.0% | 2.1% | 5.0% | 5.5% | 4.8% | 6.3% | 4.7% | 7.7% |
| Connecticut Water Service, Inc. | 4.4% | 1.3% | | 1.2% | | 15.0% | 5.8% | 10.2% |
| Middlesex Water | 5.0% | 1.3% | | 5.2% | | 8.0% | 4.8% | 9.8% |
| SJW Corporation | 2.9% | 5.6% | | 6.1% | | 10.0% | 7.2% | 10.1% |
| Southwest Water Co. | 2.2% | 1.3% | | 8.5% | | 5.0% | 4.9% | 7.1% |
| York Water Company | 4.3% | 2.1% | | 6.1% | | 7.0% | 5.1% | 9.3% |
| Mean | 3.6% | 2.5% | 4.5% | 5.9% | 5.8% | 7.6% | 5.3% | 9.0% |
| Median | 3.0% | 2.1% | 5.0% | 6.1% | 5.8% | 7.0% | 5.0% | 9.3% |
| Composite-Mean | | 6.2% | 8.1% | 9.5% | 9.4% | 11.3% | 9.0% | |
| Composite-Median | | 5.1% | 8.0% | 9.1% | 8.8% | 10.0% | 8.0% | |
| **Zepp Water Sample Group** | | | | | | | | |
| American States Water Co. | 3.0% | 2.7% | 5.0% | 7.5% | 5.8% | 4.0% | 5.0% | 8.0% |
| Aqua America, Inc. | 2.9% | 4.0% | 3.5% | 6.9% | 6.7% | 7.5% | 5.7% | 8.6% |
| California Water Service Group | 3.0% | 2.1% | 5.0% | 5.5% | 4.8% | 6.3% | 4.7% | 7.7% |
| Connecticut Water Service, Inc. | 4.4% | 1.3% | | 1.2% | | 15.0% | 5.8% | 10.2% |
| Middlesex Water | 5.0% | 1.3% | | 5.2% | | 8.0% | 4.8% | 9.8% |
| SJW Corporation | 2.9% | 5.6% | | 6.1% | | 10.0% | 7.2% | 10.1% |
| Mean | 3.5% | 2.8% | 4.5% | 5.4% | 5.8% | 8.5% | 5.6% | 9.1% |
| Median | 3.0% | 2.4% | 5.0% | 5.8% | 5.8% | 7.8% | 5.4% | 9.2% |
| Composite-Mean | | 6.3% | 8.0% | 8.9% | 9.3% | 12.0% | 9.1% | |
| Composite-Median | | 5.4% | 8.0% | 8.8% | 8.8% | 10.7% | 8.3% | |

Note: Negative average growth rates excluded from above DCF analyses.

# STANDARD & POOR'S 500 COMPOSITE
# 20-YEAR U.S. TREASURY BOND YIELDS
# RISK PREMIUMS

| Year | EPS | BVPS | ROE | 20-YEAR T-BOND | RISK PREMIUM |
|---|---|---|---|---|---|
| 1977 | | $79.07 | | | |
| 1978 | $12.33 | $85.35 | 15.00% | 7.90% | 7.10% |
| 1979 | $14.86 | $94.27 | 16.55% | 8.86% | 7.69% |
| 1980 | $14.82 | $102.48 | 15.06% | 9.97% | 5.09% |
| 1981 | $15.36 | $109.43 | 14.50% | 11.55% | 2.95% |
| 1982 | $12.64 | $112.46 | 11.39% | 13.50% | -2.11% |
| 1983 | $14.03 | $116.93 | 12.23% | 10.38% | 1.85% |
| 1984 | $16.64 | $122.47 | 13.90% | 11.74% | 2.16% |
| 1985 | $14.61 | $125.20 | 11.80% | 11.25% | 0.55% |
| 1986 | $14.48 | $126.82 | 11.49% | 8.98% | 2.51% |
| 1987 | $17.50 | $134.04 | 13.42% | 7.92% | 5.50% |
| 1988 | $23.75 | $141.32 | 17.25% | 8.97% | 8.28% |
| 1989 | $22.87 | $147.26 | 15.85% | 8.81% | 7.04% |
| 1990 | $21.73 | $153.01 | 14.47% | 8.19% | 6.28% |
| 1991 | $16.29 | $158.85 | 10.45% | 8.22% | 2.23% |
| 1992 | $19.09 | $149.74 | 12.37% | 7.26% | 5.11% |
| 1993 | $21.89 | $180.88 | 13.24% | 7.17% | 6.07% |
| 1994 | $30.60 | $193.06 | 16.37% | 6.59% | 9.78% |
| 1995 | $33.96 | $215.51 | 16.62% | 7.60% | 9.02% |
| 1996 | $38.73 | $237.08 | 17.11% | 6.18% | 10.93% |
| 1997 | $39.72 | $249.52 | 16.33% | 6.64% | 9.69% |
| 1998 | $37.71 | $266.40 | 14.62% | 5.83% | 8.79% |
| 1999 | $48.17 | $290.68 | 17.29% | 5.57% | 11.72% |
| 2000 | $50.00 | $325.80 | 16.22% | 6.50% | 9.72% |
| 2001 | $24.69 | $338.37 | 7.43% | 5.53% | 1.90% |
| 2002 | $27.59 | $321.72 | 8.36% | 5.59% | 2.77% |
| 2003 | $48.73 | $367.17 | 14.15% | 4.80% | 9.35% |
| 2004 | $58.55 | $414.75 | 14.98% | 5.02% | 9.96% |
| 2005 | $69.93 | $453.06 | 16.12% | 4.69% | 11.43% |
| 2006 | $81.51 | $504.39 | 17.03% | 4.68% | 12.35% |
| 2007 | $66.17 | $529.59 | 12.80% | 4.86% | 7.94% |
| Average | | | **14.09%** | **7.69%** | **6.45%** |

Sources: Standard & Poor's Analysts' Handbook and Morningstar 2008 Yearbook.

# PROXY WATER UTILITIES
# CAPM COST RATES

| COMPANY | RISK-FREE RATE | BETA | RISK PREMIUM | CAPM RATES |
|---|---|---|---|---|
| **Value Line Water Group** | | | | |
| American States Water Co. | 3.82% | 0.85 | 5.32% | 8.3% |
| Aqua America, Inc. | 3.82% | 0.75 | 5.32% | 7.8% |
| California Water Service Group | 3.82% | 0.85 | 5.32% | 8.3% |
| Southwest Water Co. | 3.82% | 1.15 | 5.32% | 9.9% |
| Mean | | | | **8.6%** |
| Median | | | | **8.3%** |
| **AUS Utility Reports Group** | | | | |
| American States Water Co. | 3.82% | 0.85 | 5.32% | 8.3% |
| Aqua America, Inc. | 3.82% | 0.75 | 5.32% | 7.8% |
| Artesian Resources Corp. | 3.82% | | 5.32% | |
| California Water Service Group | 3.82% | 0.85 | 5.32% | 8.3% |
| Connecticut Water Service, Inc. | 3.82% | 0.80 | 5.32% | 8.1% |
| Middlesex Water | 3.82% | 0.80 | 5.32% | 8.1% |
| SJW Corporation | 3.82% | 1.00 | 5.32% | 9.1% |
| Southwest Water Co. | 3.82% | 1.15 | 5.32% | 9.9% |
| York Water Company | 3.82% | 0.60 | 5.32% | 7.0% |
| Mean | | | | **8.3%** |
| Median | | | | **8.2%** |
| **Zepp Water Sample Group** | | | | |
| American States Water Co. | 3.82% | 0.85 | 5.32% | 8.3% |
| Aqua America, Inc. | 3.82% | 0.75 | 5.32% | 7.8% |
| California Water Service Group | 3.82% | 0.85 | 5.32% | 8.3% |
| Connecticut Water Service, Inc. | 3.82% | 0.80 | 5.32% | 8.1% |
| Middlesex Water | 3.82% | 0.80 | 5.32% | 8.1% |
| SJW Corporation | 3.82% | 1.00 | 5.32% | 9.1% |
| Mean | | | | **8.3%** |
| Median | | | | **8.2%** |

Sources: Value Line Investment Survey, Standard & Poor's Analysts' Handbook, Morningstar 2008 Yearbook.

# PROXY WATER UTILITIES
## RATES OF RETURN ON AVERAGE COMMON EQUITY

| COMPANY | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 1992-2001 Average | 2002-2008 Average | 2009 | 2010 | 2012-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 14.0% | 11.7% | 9.5% | 10.0% | 10.0% | 9.4% | 9.5% | 10.2% | 9.6% | 10.5% | 9.6% | 5.6% | 8.0% | 10.4% | 8.2% | 9.3% | 7.2% | 10.4% | 8.3% | 9.5% | 10.0% | 12.5% |
| Aqua America, Inc. | 11.0% | 11.4% | 11.2% | 12.0% | 11.8% | 12.5% | 14.2% | 13.8% | 13.0% | 14.0% | 13.9% | 12.3% | 11.4% | 11.5% | 11.0% | 10.0% | 9.6% | 12.5% | 11.4% | 10.0% | 10.5% | 11.5% |
| California Water Service Group | 10.4% | 12.6% | 10.6% | 10.0% | 12.6% | 14.5% | 11.0% | 11.4% | 10.3% | 7.5% | 9.6% | 8.7% | 9.8% | 9.3% | 7.6% | 4.9% | 10.1% | 11.1% | 8.6% | 10.5% | 10.5% | 12.0% |
| Southwest Water Co. | 8.0% | 0.4% | 3.7% | 5.0% | 8.5% | 8.3% | 10.0% | 15.5% | 12.2% | 12.0% | 12.1% | 10.2% | 6.8% | 5.4% | 5.6% | -5.0% | | 8.2% | 5.8% | | | |
| Mean | 10.9% | 9.0% | 8.8% | 9.3% | 10.2% | 11.2% | 11.2% | 12.7% | 11.3% | 11.0% | 11.3% | 9.2% | 9.0% | 9.1% | 8.1% | 4.8% | 9.0% | 10.5% | 8.5% | 10.0% | 10.3% | 12.0% |
| Median | 10.7% | 11.6% | 10.1% | 10.0% | 10.9% | 11.0% | 10.5% | 12.8% | 11.3% | 11.3% | 10.9% | 9.5% | 8.9% | 9.9% | 7.9% | 7.1% | 9.6% | 11.0% | 9.1% | 10.0% | 10.5% | 12.0% |
| **AUS Utility Reports Group** | | | | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 14.0% | 11.7% | 9.5% | 10.0% | 10.0% | 9.4% | 9.5% | 10.2% | 9.6% | 10.5% | 9.6% | 5.6% | 8.0% | 10.4% | 8.2% | 9.3% | 7.2% | 10.4% | 8.3% | 9.5% | 10.0% | 12.5% |
| Aqua America, Inc. | 11.0% | 11.4% | 11.2% | 12.0% | 11.8% | 12.5% | 14.2% | 13.8% | 13.0% | 14.0% | 13.9% | 12.3% | 11.4% | 11.5% | 11.0% | 10.0% | 9.6% | 12.5% | 11.4% | 10.0% | 10.5% | 11.5% |
| Artesian Resources Corp. | | | | | | | 9.8% | 9.7% | 8.1% | 9.4% | 9.8% | 7.4% | 7.8% | 8.9% | 10.2% | 8.5% | 7.4% | | 8.5% | | | |
| California Water Service Group | 10.4% | 12.6% | 10.6% | 10.0% | 12.6% | 14.5% | 11.0% | 11.4% | 10.3% | 7.5% | 9.6% | 8.7% | 9.8% | 9.3% | 7.6% | 4.9% | 10.1% | 11.1% | 8.6% | 10.5% | 10.5% | 12.0% |
| Connecticut Water Service, Inc. | 12.1% | 12.5% | 12.6% | 12.7% | 12.4% | 12.3% | 12.2% | 12.4% | 11.6% | 13.3% | 11.6% | 11.2% | 11.4% | 12.0% | 7.5% | 6.9% | 9.2% | 12.4% | 10.3% | | | |
| Middlesex Water | 11.7% | 12.6% | 12.1% | 12.0% | 10.3% | 11.2% | 10.7% | 10.2% | 6.5% | 9.0% | 9.8% | 8.2% | 6.3% | 8.4% | 8.6% | 6.8% | 8.8% | 10.6% | 8.7% | | | |
| SJW Corporation | 11.8% | 11.8% | 9.8% | 10.8% | 16.2% | 12.0% | 11.6% | 11.1% | 9.6% | 9.5% | 9.4% | 9.8% | 11.3% | 11.5% | 16.2% | 8.3% | 11.2% | 11.4% | 11.4% | | | |
| Southwest Water Co. | 8.0% | 0.4% | 3.7% | 5.0% | 8.5% | 8.3% | 10.0% | 15.5% | 12.2% | 12.0% | 12.1% | 10.2% | 6.8% | 5.4% | 5.6% | -5.0% | | 8.2% | 5.8% | | | |
| York Water Company | 11.9% | 12.6% | 11.7% | 10.7% | 11.1% | 10.9% | 10.3% | 10.3% | 11.9% | 11.5% | 16.7% | 11.7% | 12.2% | 11.6% | 10.5% | 9.7% | 9.4% | 11.3% | 11.7% | | | |
| Mean | 11.4% | 10.7% | 10.1% | 10.4% | 11.4% | 11.4% | 11.0% | 11.6% | 10.3% | 10.7% | 11.4% | 9.5% | 8.6% | 9.9% | 9.7% | 7.0% | 9.1% | 11.0% | 9.4% | 10.0% | 10.3% | 12.0% |
| Median | 11.8% | 12.2% | 10.9% | 10.8% | 11.5% | 11.6% | 10.7% | 11.1% | 10.3% | 10.3% | 9.8% | 9.8% | 9.8% | 10.4% | 8.6% | 8.8% | 9.3% | 11.1% | 9.5% | 10.0% | 10.5% | 12.0% |
| **Zepp Water Sample Group** | | | | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 14.0% | 11.7% | 9.5% | 10.0% | 10.0% | 9.4% | 9.5% | 10.2% | 9.6% | 10.5% | 9.6% | 5.6% | 8.0% | 10.4% | 8.2% | 9.3% | 7.2% | 10.4% | 8.3% | 9.5% | 10.0% | 12.5% |
| Aqua America, Inc. | 11.0% | 11.4% | 11.2% | 12.0% | 11.8% | 12.5% | 14.2% | 13.8% | 13.0% | 14.0% | 13.9% | 12.3% | 11.4% | 11.5% | 11.0% | 10.0% | 9.6% | 12.5% | 11.4% | 10.0% | 10.5% | 11.5% |
| California Water Service Group | 10.4% | 12.6% | 10.6% | 10.0% | 12.6% | 14.5% | 11.0% | 11.4% | 10.3% | 7.5% | 9.6% | 8.7% | 9.8% | 9.3% | 7.6% | 4.9% | 10.1% | 11.1% | 8.6% | 10.5% | 10.5% | 12.0% |
| Connecticut Water Service, Inc. | 12.1% | 12.5% | 12.6% | 12.7% | 12.4% | 12.3% | 12.2% | 12.4% | 11.6% | 13.3% | 11.6% | 11.2% | 11.4% | 12.0% | 7.5% | 6.9% | 9.2% | 12.4% | 10.3% | | | |
| Middlesex Water | 11.7% | 12.6% | 12.1% | 12.0% | 10.3% | 11.2% | 10.7% | 10.2% | 6.5% | 9.0% | 9.8% | 8.2% | 6.3% | 8.4% | 8.6% | 6.8% | 8.8% | 10.6% | 8.7% | | | |
| SJW Corporation | 11.8% | 11.8% | 9.8% | 10.8% | 16.2% | 12.0% | 11.6% | 11.1% | 9.6% | 9.5% | 9.4% | 9.8% | 11.3% | 11.5% | 16.2% | 8.3% | 11.2% | 11.4% | 11.4% | | | |
| Mean | 11.8% | 12.1% | 10.9% | 11.3% | 12.2% | 12.0% | 11.5% | 11.5% | 10.1% | 10.6% | 10.7% | 9.3% | 10.0% | 10.5% | 10.2% | 8.4% | 9.4% | 11.4% | 9.8% | 10.0% | 10.3% | 12.0% |
| Median | 11.8% | 12.2% | 10.9% | 11.4% | 12.1% | 12.2% | 11.3% | 11.3% | 10.0% | 10.0% | 9.7% | 9.3% | 10.6% | 11.0% | 8.4% | 8.9% | 9.4% | 11.3% | 9.8% | 10.0% | 10.5% | 12.0% |

Source: AUS Utility Reports and Value Line Investment Survey.

# PROXY WATER UTILITIES
## MARKET TO BOOK RATIOS

| COMPANY | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 1992-2001 Average | 2002-2008 Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 142% | 156% | 124% | 120% | 134% | 137% | 148% | 177% | 168% | 182% | 176% | 178% | 181% | 230% | 205% | 209% | 210% | 149% | 198% |
| Aqua America, Inc. | 140% | 158% | 151% | 124% | 189% | 237% | 313% | 287% | 302% | 365% | 304% | 280% | 307% | 436% | 332% | 259% | 238% | 227% | 308% |
| California Water Service Group | 147% | 172% | 157% | 140% | 160% | 191% | 207% | 202% | 186% | 201% | 199% | 189% | 218% | 264% | 223% | 219% | 222% | 176% | 219% |
| Southwest Water Co. | 118% | 112% | 85% | 75% | 109% | 153% | 174% | 223% | 266% | 240% | 202% | 250% | 156% | 241% | 201% | 172% | 67% | 156% | 184% |
| Mean | 137% | 150% | 129% | 115% | 148% | 180% | 211% | 222% | 231% | 247% | 220% | 224% | 216% | 293% | 240% | 215% | 184% | 177% | 227% |
| Median | 141% | 157% | 138% | 122% | 147% | 172% | 191% | 213% | 226% | 221% | 201% | 220% | 200% | 253% | 214% | 214% | 216% | 173% | 217% |
| **AUS Utility Reports Group** | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 142% | 156% | 124% | 120% | 134% | 137% | 148% | 177% | 168% | 182% | 176% | 178% | 181% | 230% | 205% | 209% | 210% | 149% | 198% |
| Aqua America, Inc. | 140% | 158% | 151% | 124% | 189% | 237% | 313% | 287% | 302% | 365% | 304% | 280% | 307% | 436% | 332% | 259% | 238% | 227% | 308% |
| Artesian Resources Corp. | | | | | | | 156% | 168% | 143% | 183% | 159% | 207% | 198% | 215% | 198% | 150% | 117% | | 178% |
| California Water Service Group | 147% | 172% | 157% | 140% | 160% | 191% | 207% | 202% | 186% | 201% | 199% | 189% | 218% | 264% | 223% | 219% | 222% | 176% | 219% |
| Connecticut Water Service, Inc. | 162% | 180% | 154% | 149% | 156% | 168% | 193% | 218% | 226% | 304% | 275% | 266% | 233% | 216% | 211% | 199% | 173% | 191% | 225% |
| Middlesex Water | 111% | 184% | 169% | 150% | 150% | 164% | 176% | 218% | 222% | 248% | 225% | 265% | 214% | 214% | 178% | 184% | 141% | 179% | 203% |
| SJW Corporation | 113% | 124% | 117% | 106% | 113% | 133% | 137% | 193% | 195% | 162% | 155% | 193% | 175% | 240% | 307% | 236% | 175% | 139% | 212% |
| Southwest Water Co. | 118% | 112% | 85% | 75% | 109% | 153% | 174% | 223% | 266% | 240% | 202% | 250% | 156% | 241% | 201% | 172% | 67% | 156% | 184% |
| York Water Company | 169% | 174% | 87% | 197% | 195% | 226% | 198% | 174% | 154% | 284% | 277% | 335% | 275% | 367% | 309% | 266% | 190% | 186% | 288% |
| Mean | 138% | 158% | 131% | 133% | 151% | 176% | 189% | 207% | 208% | 241% | 219% | 240% | 217% | 269% | 240% | 210% | 170% | 178% | 224% |
| Median | 141% | 166% | 138% | 132% | 153% | 166% | 176% | 202% | 195% | 240% | 202% | 250% | 214% | 240% | 211% | 209% | 175% | 171% | 214% |
| **Zepp Water Sample Group** | | | | | | | | | | | | | | | | | | | |
| American States Water Co. | 142% | 156% | 124% | 120% | 134% | 137% | 148% | 177% | 168% | 182% | 176% | 178% | 181% | 230% | 205% | 209% | 210% | 149% | 198% |
| Aqua America, Inc. | | | 151% | 124% | 189% | 237% | 313% | 287% | 302% | 365% | 304% | 280% | 307% | 436% | 332% | 259% | 238% | 246% | 308% |
| California Water Service Group | 147% | 172% | 157% | 140% | 160% | 191% | 207% | 202% | 186% | 201% | 199% | 189% | 218% | 264% | 223% | 219% | 222% | 176% | 219% |
| Connecticut Water Service, Inc. | 162% | 180% | 154% | 149% | 156% | 168% | 193% | 218% | 226% | 304% | 275% | 266% | 233% | 216% | 211% | 199% | 173% | 191% | 225% |
| Middlesex Water | 111% | 184% | 169% | 150% | 150% | 164% | 176% | 218% | 222% | 248% | 225% | 265% | 214% | 214% | 178% | 184% | 141% | 179% | 203% |
| SJW Corporation | 113% | 124% | 117% | 106% | 113% | 133% | 137% | 193% | 195% | 162% | 155% | 193% | 175% | 240% | 307% | 236% | 175% | 139% | 212% |
| Mean | 135% | 163% | 145% | 132% | 150% | 172% | 196% | 218% | 217% | 244% | 222% | 229% | 221% | 267% | 243% | 218% | 193% | 180% | 227% |
| Median | 142% | 172% | 153% | 132% | 153% | 166% | 185% | 210% | 209% | 225% | 212% | 229% | 216% | 235% | 217% | 214% | 193% | 176% | 217% |

Source: AUS Utility Reports and Value Line Investment Survey.

# STANDARD & POOR'S 500 COMPOSITE RETURNS AND MARKET-TO-BOOK RATIOS 1992 - 2007

| YEAR | RETURN ON AVERAGE EQUITY | MARKET-TO BOOK RATIO |
|---|---|---|
| 1992 | 12.2% | 271% |
| 1993 | 13.2% | 272% |
| 1994 | 16.4% | 246% |
| 1995 | 16.6% | 264% |
| 1996 | 17.1% | 299% |
| 1997 | 16.3% | 354% |
| 1998 | 14.6% | 421% |
| 1999 | 17.3% | 481% |
| 2000 | 16.2% | 453% |
| 2001 | 7.5% | 353% |
| 2002 | 8.4% | 296% |
| 2003 | 14.2% | 278% |
| 2004 | 15.0% | 291% |
| 2005 | 16.1% | 278% |
| 2006 | 17.0% | 277% |
| 2007 | 12.8% | 284% |
| Averages: | | |
| 1992-2001 | 14.7% | 341% |
| 2002-2007 | 13.9% | 284% |

Source: Standard & Poor's Analyst's Handbook, 2008 edition, page 1.

# RISK INDICATORS

| GROUP | VALUE LINE SAFETY | VALUE LINE BETA | VALUE LINE FIN STR | S & P STK RANK |
|---|---|---|---|---|
| S & P's 500 Composite | 2.7 | 1.05 | B++ | B+ |
| Value Line Water Group | 3.3 | 0.90 | B+ | B+/A- |
| AUS Utility Reports Group | 2.8 | 0.85 | B+ | B+/A- |
| Zepp Water Sample Group | 2.7 | 0.84 | B+/B++ | A- |

Sources: Value Line Investment Survey, Standard & Poor's Stock Guide.

Definitions:

Safety rankings are in a range of 1 to 5, with 1 representing the highest safety or lowest risk.

Beta reflects the variability of a particular stock, relative to the market as a whole. A stock with a beta of 1.0 moves in concert with the market, a stock with a beta below 1.0 is less variable than the market, and a stock with a beta above 1.0 is more variable than the market.

Financial strengths range from C to A++, with the latter representing the highest level.

Common stock rankings range from D to A+, with the later representing the highest level.

## RISK INDICATORS

| COMPANY | VALUE LINE SAFETY | VALUE LINE BETA | VALUE LINE FINANCIAL STRENGTH | | S& P STOCK RANKING | |
|---|---|---|---|---|---|---|
| **Value Line Water Group** | | | | | | |
| American States Water Co. | 3 | 0.85 | B++ | 3.67 | B+ | 3.33 |
| Aqua America, Inc. | 3 | 0.75 | B+ | 3.33 | A | 4.00 |
| California Water Service Group | 3 | 0.85 | B++ | 3.67 | B+ | 3.33 |
| Southwest Water Co. | 4 | 1.15 | C++ | 2.67 | B+ | 3.33 |
| Average | 3.3 | 0.90 | **B+** | **3.34** | B+/A- | 3.50 |
| **AUS Utility Reports Group** | | | | | | |
| American States Water Co. | 3 | 0.85 | B++ | 3.67 | B+ | 3.33 |
| Aqua America, Inc. | 3 | 0.75 | B+ | 3.33 | A | 4.00 |
| Artesian Resources Corp. | | | | | | |
| California Water Service Group | 3 | 0.85 | B++ | 3.67 | B+ | 3.33 |
| Connecticut Water Service, Inc. | 2 | 0.80 | B++ | 3.67 | A- | 3.67 |
| Middlesex Water | 2 | 0.80 | B+ | 3.33 | A- | 3.67 |
| SJW Corporation | 3 | 1.00 | B+ | 3.33 | A | 4.00 |
| Southwest Water Co. | 4 | 1.15 | C++ | 2.67 | B+ | 3.33 |
| York Water Company | 2 | 0.60 | B+ | 3.33 | A | 4.00 |
| Average | 2.8 | 0.85 | **B+** | **3.38** | B+/A- | 3.67 |
| **Zepp Water Sample Group** | | | | | | |
| American States Water Co. | 3 | 0.85 | B++ | 3.67 | B+ | 3.33 |
| Aqua America, Inc. | 3 | 0.75 | B+ | 3.33 | A | 4.00 |
| California Water Service Group | 3 | 0.85 | B++ | 3.67 | B+ | 3.33 |
| Connecticut Water Service, Inc. | 2 | 0.80 | B++ | 3.67 | A- | 3.67 |
| Middlesex Water | 2 | 0.80 | B+ | 3.33 | A- | 3.67 |
| SJW Corporation | 3 | 1.00 | B+ | 3.33 | A | 4.00 |
| Average | 2.7 | 0.84 | **B+/B++** | **3.50** | A- | 3.67 |

Sources: Standard & Poor's Stock Guide and Value Line Investment Survey.

# ARIZONA WATER COMPANY
# RATING AGENCY RATIOS

| ITEM | PERCENT | COST RATE | WEIGHTED COST | PRE-TAX COST | |
|---|---|---|---|---|---|
| Short-Term Debt | 4.80% | 3.00% | 0.14% | 0.14% | |
| Long-Term Debt | 49.35% | 6.83% | 3.37% | 3.37% | |
| Common Equity | 45.85% | 10.00% | 4.58% | 7.64% | (1) |
| TOTAL CAPITAL | 100.00% | | 8.10% | 11.16% | |

(1) Post-tax weighted cost divided by .60 (composite tax factor)

Pre-tax coverage = 11.16%/(0.14% + 3.37%)
**3.17 X**

Standard & Poor's Utility Benchmark Ratios:

| | A | BBB |
|---|---|---|
| Pre-tax coverage (X) Business Position: | | |
| 3 | 2.8x - 3.4x | 1.8x - 2.8x |
| Total Debt to Total Capital (%) Business Position | | |
| 3 | 50% - 55% | 55% - 65% |

Note: Standard & Poor's no longer employs the pre-tax coverage ratios as one of its qualitative ratings criteria. The above-cited S&P benchmark ratios reflect the 1999 criteria reported by S&P.

EXHIBIT A-19

**BEFORE THE ARIZONA CORPORATION C**

COMMISSIONERS

KRISTIN K. MAYES - Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

Arizona Corporation Commission
DOCKETED
OCT 21 2009
DOCKETED BY nr

IN THE MATTER OF THE APPLICATION OF CHAPARRAL CITY WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.

DOCKET NO. W-02113A-07-0551

DECISION NO. 71308

**OPINION AND ORDER**

DATES OF HEARING: December 5, 2008 (Pre-Hearing); December 8, 9, and 10, 2008, and January 8 and 9, 2009.

PLACE OF HEARING: Phoenix, Arizona

ADMINISTRATIVE LAW JUDGE: Teena Wolfe

APPEARANCES: Mr. Norman D. James and Mr. Jay L. Shapiro, FENNEMORE CRAIG, on behalf of Chaparral City Water Company;

Ms. Michelle L. Wood, Attorney, on behalf of the Residential Utility Consumer Office;

Ms. Robin Mitchell, Ms. Amanda Ho, and Mr. Wesley Van Cleve, Staff Attorneys, Legal Division, on behalf of the Utilities Division of the Arizona Corporation Commission.



EXHIBIT A19 ADMIN. NOTICE

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**BY THE COMMISSION:**

## I. INTRODUCTION

On September 26, 2007, Chaparral City Water Company, Inc. ("Company" or "CCWC") filed with the Arizona Corporation Commission ("Commission") an application for a rate increase, based on a test year ended December 31, 2006.

On October 26, 2007, the Commission's Utilities Division ("Staff") filed a letter stating that the application was found sufficient and classifying the Applicant as a Class A utility.

On November 19, 2007, the Residential Utility Consumer Office ("RUCO") filed an Application to Intervene.

By Rate Case Procedural Order issued November 30, 2007, a hearing was set on the application to commence on July 8, 2008, associated procedural deadlines were set, and intervention was granted to RUCO.

On December 19, 2007, the procedural schedule set by the initial Rate Case Procedural Order was modified as requested by the Company, with the hearing set to commence on July 21, 2008.

On January 22, 2008, a Procedural Order was issued granting a January 3, 2008, motion by Staff to suspend the timeclock in this proceeding, until the Commission's final order in Docket No. W-02113A-04-0616, a pending matter in which the rates of Chaparral City Water Company, Inc. were also being considered. The parties were ordered to continue to conduct discovery and case preparation to the greatest extent possible during the duration of the continuance in order to minimize any delay in implementation of new rates pursuant to this application.

By the Second Amended Rate Case Procedural Order issued on July 24, 2008, the hearing was set to commence on December 8, 2008. The Second Amended Rate Case Procedural Order set the deadline for intervenor direct testimony at September 30, 2008, and the deadline for intervenor surrebuttal testimony at November 18, 2008.

On September 15, 2008, Pacific Life Insurance Company dba Eagle Mountain Golf Club ("Pacific Life"), a commercial customer of CCWC, filed a Motion to Intervene, which was granted by Procedural Order issued September 26, 2008.

On September 30, 2008, a Procedural Order Extending Filing Deadlines was issued, extending the deadline for intervenor direct testimony to October 3, 2008, and extending the deadline for intervenor surrebuttal testimony to November 20, 2008.

RUCO and Staff filed direct testimony on September 30, 2008, and October 3, 2008, respectively.

On October 24, 2008, Staff filed a Notice of Filing of Meeting on Settlement, and on October 28, 2008, Staff filed a Corrected Notice of Filing of Meeting on Settlement.

On October 31, 2008, the Company filed its rebuttal testimony.

On November 12, 2008, Pacific Life filed a Notice of Appearance of Counsel, indicating a change of counsel.

On November 21, 2008, Staff filed a Notice of Witness Substitution and Request for Procedural Order. Staff requested that it be allowed to file substitute witness Mr. Parcell's surrebuttal testimony on cost of capital on December 3, 2008, and requested a date certain of December 15, 2008, for Mr. Parcell's live testimony.

On November 24, 2008, the Company filed its Response objecting to Staff's November 21, 2008 filing, and on November 26, 2008, Staff filed a Reply to the Company.

On December 2, 2008, a Procedural Order was issued granting Staff's request to file the surrebuttal testimony of its substitute witness on December 3, 2008, and indicating that the dates certain requested by Staff for presentation of its expert witness were not available for hearing, but that a suitable schedule for proceeding with the parties' presentation of their cases on cost of capital would be discussed at the prehearing conference scheduled for December 5, 2008.

The prehearing conference was held as scheduled. The Company, RUCO and Staff appeared through counsel. Pacific Life did not enter an appearance. The Company stated an objection to Staff's substitute witness Parcell's prefiled surrebuttal testimony, and the objection was discussed. Staff agreed to make a filing regarding Mr. Parcell's adoption of Staff witness Mr. Chaves' testimony. A date for Mr. Parcell to appear for cross-examination was discussed, but not determined, during the prehearing conference.

On December 8, 2008, the hearing convened as scheduled and public comment was taken.

The Company, RUCO and Staff appeared through counsel, presented evidence and cross-examined witnesses on all issues with the exception of cost of capital and rate of return. Pacific Life did not appear. The hearing was recessed on December 10, 2008, and reconvened on January 8, 2009, for the purpose of taking evidence on the bifurcated issues of cost of capital and rate of return. The hearing concluded on January 9, 2009.

The parties subsequently submitted closing and reply briefs which were bifurcated in the same manner as the hearing, with the final round of reply briefs filed on February 27, 2009.

In its reply brief on the issue of cost of capital, Staff requested that in light of the Company's restating of arguments regarding the methodologies employed in Decision No. 70441, in order to have a complete record in this case, that either Staff's testimony in the proceeding leading to Decision No. 70441 ("Remand Proceeding") be admitted as a late-filed exhibit, or that administrative notice be taken of the complete record of Docket No. W-02113A-04-0616. Due to the continuing litigation on the issue of an appropriate fair value rate of return ("FVROR") methodology, administrative notice is taken of the complete record of Docket No. W-02113A-04-0616.

On February 18, 2009, Staff docketed an update to its February 10, 2009, Motion to Compel.[1] Staff indicated that Staff and the Company had agreed to extend the time period in which the Company has to respond, pending the outcome of ongoing negotiations to resolve the Motion to Compel.

On March 4, 2009, the Company filed a Notice of Filing Late-Filed Exhibit. The exhibit attached thereto is a rate case itemization spreadsheet showing a total for January 2007 - December 2008.

On June 3, 2009, a Procedural Order was issued directing Staff to file, by June 12, 2009, an update regarding its Motion to Compel and the progress made in its discovery regarding the CPUC investigation. The Procedural Order further directed that the update include a recommendation regarding an appropriate procedural means of addressing the CPUC investigation issue, including

[1] The Motion to Compel is related to an ongoing investigation by Staff. On January 5, 2009, Staff filed a Notice of Filing Regarding Investigation. The Notice stated that the California Public Service Commission ("CPUC") had contacted Staff regarding a CPUC investigation of Golden States Water Company ("Golden States"), an affiliate of CCWC. The CPUC had alerted Staff that in the course of a CPUC investigation into Golden States, the CPUC had discovered information relating to CCWC that it thought would be of interest to Staff.

whether it should be addressed in this docket, and directed the Company, Pacific Life and RUCO to file responses.

On June 11, 2009, Staff filed a Request for Extension of Time, requesting that it be allowed to file its update by June 19, 2009.

On June 12, 2009, the Company filed a Response in Opposition to Staff's Motion for Extension of Time. Therein, the Company stated that it had offered to stipulate to either (1) keep this docket open, pending conclusion of Staff's review of the CPUC investigation documents and a determination of whether any further proceedings or relief are warranted, or (2) to open a new docket for the same purpose, but that Staff had not definitively responded to the stipulation offer.

On June 17, 2009, RUCO filed a Response to Staff's Request for Extension of Time.

On June 17, 2009, a Procedural Order was issued granting Staff a one-week time extension, and extending the time for filing responses thereto.

On June 19, 2009, Staff filed its Update and Reply to Chaparral City Water Company's Response. Staff stated that ultimately, Staff and the Company had resolved their discovery dispute through the execution of a protective agreement, upon which the Company provided Staff with over 15,000 pages of documents. Staff stated that its investigation is ongoing, and that Staff had not yet determined whether the Company's activities rise to the level of impropriety or wrongdoing or impact the Company's rates or this pending rate case. Staff stated that it had retained an outside consultant to assist in Staff's review of the documents and to determine whether any alleged improprieties have impacts for this rate case. Staff stated that it found the Company's stipulation proposal acceptable, as long as all parties acknowledge that rates could be modified if the investigation yields circumstances which would warrant such action.

On June 23, 2009, RUCO filed its Response to Staff's Update Regarding the CPUC Investigation. RUCO agreed with Staff that there had been insufficient time to review and analyze the documentation which the Company produced on March 10, 13 and 16, 2009. RUCO stated that it did not object to having this matter proceed, but with the docket remaining open subject to reconsideration in the event that the investigation by Staff, RUCO, or the CPUC reflects impropriety by Chaparral or its parent, officers or employees.

On June 25, 2009, the Company filed a Response to Staff's Update. The Company asserted that there is no reason to delay rate relief, and requested the issuance of a decision in this matter as soon as possible.

This matter was subsequently taken under advisement, and a Recommended Opinion and Order was submitted for the Commission's consideration.

## II. APPLICATION

CCWC, a California corporation in good standing in Arizona, is an Arizona public service corporation that holds a Certificate of Convenience and Necessity ("CC&N") authorizing it to provide water utility service within a service territory that is located in the northeastern portion of the Phoenix metropolitan area, in the Town of Fountain Hills and in a small portion of the City of Scottsdale.[2] During the test year, CCWC served 13,333 customers, including 12,431 residential, 375 commercial and 442 irrigation customers.[3] CCWC is in compliance with all federal, state, county and Commission requirements.[4]

On September 26, 2007, CCWC filed this rate increase application with the Commission based on a test year ended December 31, 2006. CCWC is currently charging rates approved in Decision No. 68176 (September 30, 2005), as modified by Decision No. 70441 (July 28, 2008), based on a test year ending December 31, 2003. The Company is requesting a gross revenue increase of $2,852,353, which is an increase of 38.01 percent over test year revenues of $7,505,010.[5] The Company's requested revenues are based on its proposed rate of return of 9.96 percent on a fair value rate base ("FVRB") of $27,751,113. The Company's FVRB is derived from a 50/50 weighting of an Original Cost Rate Base ("OCRB") of $22,647,882, and a Reconstruction Cost New Rate Base ("RCND") of $32,854,345. The Company proposes adjusted test year revenues of $7,505,010 and test year operating expenses of $7,646,730.

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[2] Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 3-5.

[3] Direct Testimony of Company witness Thomas J. Bourassa (Exh. A-3), Schedule H-2 at 1.

[4] Direct Testimony of Staff witness Marlin Scott, Jr. (Exh. S-1) at 5-6.

[5] These figures are from the Company's Amended Final Schedule A-1. The Application originally sought a $3,063,400 increase in its revenue requirement, an increase of 41.14 percent over test year revenues.

## III. RATE BASE ISSUES

### A. Treatment of the FHSD Settlement Proceeds

The Fountain Hills Sanitary District ("FHSD") provides wastewater collection and treatment for most of CCWC's service area. FHSD needed to construct an Aquifer Storage and Recovery ("ASR") well in the vicinity of the Company's Well No. 9.[6] While CCWC's primary water supply is imported Colorado River water, which is delivered by means of the Central Arizona Project ("CAP"),[7] the Company blended CAP water with water from its Well No. 9 and two other wells.[8] The Company and FHSD entered into negotiations on a well exchange agreement, under which FHSD would supply CCWC with a new well similar in production and water quality to Well No. 9.[9] FHSD was unable to drill a well that yielded results satisfactory to the Company, and in January 2005, the parties entered a Well Transfer Agreement under which FHSD paid CCWC $1.52 million in consideration for CCWC ceasing use of Well No. 9 and Well No. 8 (a non-potable well), and CCWC giving FHSD an option to purchase the real property on which Well No. 8 is located.[10]

The Company proposes to treat the proceeds of the settlement in a manner that shares the benefit equally between ratepayers and shareholders.[11] The Company relied on the Commission's treatment of the Pinal Creek Group Settlement ("PCG Settlement") issue in Decision No. 66849 (March 19, 2004) as a guide for its proposal in this case.[12] CCWC contends that it acted in the public interest by protecting its interests and those of its ratepayers by turning two aged wells, one of which was never in service, into cash and seeking to share those proceeds with its ratepayers.[13] At the hearing, Staff's witness stated that for policy reasons, Staff agrees with the Company that the settlement proceeds should be shared equally between the shareholders and ratepayers so long as the Company shares the proceeds equally with the ratepayers in the event the wells are sold.[14] The

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[6] Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 10; Tr. at 118.
[7] *Id.* at 3-5.
[8] *Id.* at 3; Tr. at 101.
[9] *Id.* at 10.
[10] *Id.*
[11] *Id.* at 10-11; Rebuttal Testimony of Company witness Thomas J. Bourassa (Exh. A-5) at 13-15; Rebuttal Testimony of Company witness Robert N. Hanford (Exh. A-2) at 1-4.
[12] Company Brief at 7; Company Reply Brief at 9. The PCG Settlement is discussed at pp. 32-37 of Decision No. 66849.
[13] Company Reply Brief at 9.
[14] Tr. at 351-52.

Company is willing share the gain with ratepayers in the event the wells are ever sold.[15]

RUCO disagrees with the Company's proposal, and recommends that the Company be required to distribute the $1.52 million settlement proceeds to ratepayers minus the associated legal fees.[16] While the Company argues that disallowing the sharing of the FHSD proceeds would serve as a disincentive to utilities to pursue litigation or settlement to protect assets,[17] RUCO responds that in some cases, sharing of settlement proceeds may be appropriate, and that it does not object to the Company recovering its legal expenses associated with the settlement in this case.[18] RUCO disagrees with Staff's position on this issue, contends that Staff's change in recommendation for policy reasons during the hearing is not supported by testimony or evidence,[19] and argues that the prefiled testimony of Staff's witness, entered into the record prior to Staff's changed position on the issue at the hearing, supports its position.[20] RUCO asserts that the FHSD settlement proceeds should be allocated 100 percent to CCWC's ratepayers because Well No. 8 and Well No. 9 were constructed over 36 years ago, have been fully depreciated, and have no impact on rate base in this case.[21] RUCO contends that the Company has fully recovered the cost of the wells and received a reasonable return thereon, and therefore is not entitled to any of the settlement proceeds.[22] RUCO argues that 100 percent of the settlement proceeds should go to ratepayers, because, according to RUCO, the FHSD settlement proceeds compensate CCWC for an equivalent cost of water to replace the amount Well No. 9 would have produced over the remainder of its useful life, and RUCO believes ratepayers will have to pay 100 percent of the cost of replacement water.[23] RUCO contends that this FHSD issue is distinguishable from the PCG Settlement issue, because "there is no evidence in Decision No. 66849 that the Company fully recuperated its investment of and on the contaminated wells."[24] RUCO also contends that this FHSD issue is distinguishable from the PCG Settlement issue, because Arizona

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[15] Rebuttal Testimony of Company witness Robert N. Hanford (Exh. A-2) at 3-4; Tr. at 352-53.
[16] RUCO Brief at 9.
[17] Company Brief at 10.
[18] RUCO Brief at 9.
[19] RUCO Reply Brief at 10-11.
[20] RUCO Brief at 10; RUCO Reply Brief at 8-9, citing Tr. at 416-17 and Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 13
[21] RUCO Brief at 8; Exh. R-10 (Company Response to Staff Data Request MEM 7.3).
[22] RUCO Brief at 8.
[23] *Id.*
[24] *Id.* at 9.

Water received replacement water and wells in that case.[25]

As RUCO points out and the Company admits, Wells 8 and 9 are fully depreciated. The Company and its shareholders have received the full return of and on their investment in Wells 8 and 9 and are entitled to no more. We are cognizant, however, that the Company spent $30,000 in attorneys' fees and costs in pursuing the resolution with the FHSD. We hereby grant $30,000 of the proceeds to the Company for pursuing the matter on behalf of ratepayers and allocate the remaining settlement proceeds to the ratepayers.

**B. Treatment of the Additional CAP Water Allocation Acquisition Cost**

At the end of the test year, the Company had a CAP water allocation allowing it to take up to 6,978 acre-feet of Colorado River water annually.[26] Under that contract, the Company also has the right to buy excess CAP water,[27] and has exercised that right in each of the last two years.[28] As a result of the Arizona Water Settlement Act of 2004, CCWC had an opportunity to purchase an additional CAP allocation of 1,931 acre-feet per year.[29] CCWC states that when presented with the opportunity, it considered the unavailability of additional CAP water and other renewable water supplies, and paid $1.28 million for the additional CAP allocation in December, 2007.[30] As with its first CAP allocation, its contract for the additional CAP allocation requires the Company to pay annual Municipal and Industrial ("M&I") capital charges based on the size of the additional CAP allocation, and to pay purchased water charges based on annual water use.[31]

Parties' Positions

CCWC states that it acquired the additional CAP allocation to ensure its long-term water supply, including an increase to its drought buffer from both intrastate and interstate demand for Colorado River water supply,[32] and to reinforce and continue its reliance on renewable water supplies.[33] CCWC contends that full cost recovery is warranted because the additional CAP

[25] Decision No. 66849 at 34.
[26] Direct Testimony of Staff Witness Marlin Scott, Jr. (Exh. S-1), Engineering Report at 11.
[27] Tr. at 140-141.
[28] Company Brief at 10, fn 36 and Exhibit 1.
[29] Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 5.
[30] Company Brief at 10.
[31] Direct Testimony of Company witness Thomas J. Bourassa (Exh. A-3) at 16 and Schedule C-2, page 6.
[32] Rebuttal Testimony of Company witness Robert N. Hanford (Exh. A-2) at 6
[33] Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 5-7.

allocation was offered only in a fixed amount and was a one-time only opportunity at a fixed price.[34] CCWC contends that the Colorado River is already overcommitted as a water source, and future reductions in CAP water deliveries are a real possibility.[35] CCWC asserts that it must plan for its water supply needs not only for the next year, but for the next several decades and longer.[36] CCWC believes that the acquisition of the additional CAP allocation should be viewed as an "indivisible whole" that produces benefits to the ratepayers that could not have been obtained had the Company not paid the $1.28 million acquisition price, and that the entire acquisition cost is therefore used and useful.[37]

Staff is in agreement with the Company that the entire acquisition cost of the additional CAP allocation should be included in rate base, classified as a plant-in-service component of Land and Land Rights, and not subject to amortization.[38] In its Engineering Report on the application, Staff found that approximately half the requested additional 1,931 acre-feet per year CAP allocation (966 acre-feet) would be used and useful within a five-year timeframe.[39] Based on that determination, Staff is recommending that the Company be allowed recovery of 50 percent of the associated annual M&I charges.[40] Staff contends that the full allocation should be included in rate base at this time, however, because reallocation of CAP water occurs infrequently, and CAP water is oversubscribed.[41] Staff states that it is imperative to secure an additional CAP allotment when it becomes available, and believes CCWC acted prudently in the $1.28 million purchase of the additional CAP allocation, based on the combination of two factors: the CAP reallocation opportunity was for all or nothing of a fixed amount, and the additional CAP allocation will allow CCWC to limit or eliminate the use of groundwater to serve its customers.[42]

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[34] Company Brief at 11.
[35] Company Brief at 12, citing Tr. at 131-133.
[36] *Id.*
[37] Company Brief at 12-13.
[38] Staff Brief at 3, Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 15-18; Company Brief at 11.
[39] Direct Testimony of Staff witness Marlin Scott, Jr. (Exh. S-1) at *ii*, and Engineering Report at 11.
[40] Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 27-28. As discussed in the Operating Income section below, the Company agrees with the operating expense treatment, and RUCO agrees that M&I expenses should be allowed in an amount commensurate with the portion of the additional CAP allocation that is determined to be used and useful.
[41] Staff Brief at 3, citing Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 18.
[42] *Id.*

RUCO disagrees with the recommendations of the Company and Staff, and makes several arguments against inclusion of the additional CAP allocation in rate base. RUCO argues that the additional CAP allocation should not be put in rate base at all, because doing so would allow the Company to expand its service area as requested in Decision No. 68238 (October 25, 2005) for the benefit of the State Land Department or a developer at the expense of current ratepayers.[43] RUCO argues that if the Company needs a drought buffer, it should "work more diligently to resolve its long-standing water loss issue."[44] RUCO contends that Staff's growth projections are unreliable,[45] and that the Company's demand estimates do not support placing 100 percent of the additional CAP allocation in rate base.[46] RUCO states that its witness' accounting analysis opinion is that the current used and useful portion of the additional CAP allocation "is only about in the single digits."[47] RUCO recommends, however, that "[i]f the Commission determines that some measure of the additional CAP allocation is needed for a drought buffer . . . RUCO's revised recommendation is that no more than 35% of the additional CAP allocation be treated as land and land rights in a non-depreciable account."[48] RUCO's arguments are addressed below.

Decision No. 68238 Order Preliminary

RUCO advances an argument that the additional CAP allocation should be totally excluded from rate base, because putting it in rate base "would allow the Company to expand its service area for the benefit of the State Land Department or a developer at the expense of current ratepayers."[49] RUCO is referring to Docket No. W-02113A-05-0178. On October 25, 2005, Decision No. 68238 in that docket granted CCWC an Order Preliminary for a Final Order granting an extension of CCWC's CC&N to include approximately 1,300 acres of state trust land located north of the Town of Fountain Hills, immediately adjacent to the Company's existing CC&N area.[50] The Staff Engineering Report in this case notes that one of the requirements Decision No. 68238, imposed for the issuance of a

[43] RUCO Reply Brief at 2.
[44] *Id.* at 7.
[45] *Id.* at 3-4.
[46] *Id.* at 5.
[47] *Id.* at 7, citing Tr. at 301-02.
[48] *Id.* at 7.
[49] *Id.* at 2.
[50] Decision No. 70608 (November 12, 2008) extended the deadline for compliance with the Order Preliminary deadlines established in Decision No. 68238 to April 25, 2010.

Final Order in that docket is for CCWC to demonstrate sufficient water source capacity for its water system.[51] RUCO charges that the additional CAP allocation at issue in this case is needed not for the purpose of satisfying the demands of current customers, but instead to provide a 100-year assured water supply to permit the sale of the state trust land to a private subdivision developer.[52] RUCO argues that the Order Preliminary indicated that the Company had sufficient source and storage capacity to serve up to 18,000 customers,[53] and is concerned that ratepayers will bear the full cost of the additional CAP allocation "while the true beneficiaries, the subdivision developer and/or the State, receive the benefit."[54]

According to the Company, its request for inclusion of the additional CAP allocation acquisition costs in rate base was not based on benefiting a subdivision developer.[55] In response to RUCO's argument regarding the Order Preliminary requirements, the Company states that in the event the property covered by the Order Preliminary is developed at some future date, current customers would actually benefit from the potential expansion, both from the increase of the customer base over which the Company recovers its cost of service, and from the collection of hook-up fees from new customers.[56] Staff's witness testified that the Order Preliminary's requirement that the Company demonstrate an adequate water supply in order to receive a Final Order was only one item Staff considered in looking at whether the Company's acquisition of the additional CAP allocation was prudent.[57] The witness emphasized that Staff's main consideration in its prudence

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[51] Direct Testimony of Staff Witness Marlin Scott, Jr. (Exh. S-1), Engineering Report at 11. Decision No. 68238 orders the following:

> "IT IS FURTHER ORDERED that, prior to issuance of a Final Order, Chaparral City Water Company, Inc. shall be required to demonstrate to the satisfaction of the Commission's Director of Utilities that the Company is able to meet the water production needs for its system, PWS No. 07-017, for both its current customer base as well as expected demand for the proposed extension area. Sufficient capacity may be demonstrated by filing with Docket control a list of pending or future water sources, their anticipated production capacity in gallons per minute, and a time schedule for ADEQ approval of construction and operation."

Decision No. 68238 at 8.

[52] RUCO Reply Brief at 1-2, citing Decision No. 68238 at 3, fn 2.

[53] RUCO Reply Brief at 1. Decision No. 68238 states that "Staff indicated that Chaparral City currently has sufficient source and storage capacity to serve up to 18,000 customers." Decision No. 68238 at 3, Findings of Fact No. 6.

[54] RUCO Reply Brief at 3.

[55] Company Reply Brief at 13-1; *see also* Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 5-7; Company Brief at 12, citing Tr. at 131-133.

[56] Company Reply Brief at 14.

[57] Tr. at 337.

analysis was ADWR's requirement that the acquisition be an all or nothing purchase.[58]

RUCO did not raise this issue in its prefiled testimony in this case, and therefore the factual record on the issue is limited. As stated above, Decision No. 68238 is an Order Preliminary, and not a Final Order. No request for a Final Order has yet been filed, and it therefore remains to be seen whether a Final Order will be considered in Docket No. W-02113A-05-0178. It is therefore inappropriate to base a determination on whether to allow rate base recovery of the additional CAP allocation acquisition cost on the existence of that docket. We agree with the Company that regardless of the outcome in Docket No. W-02113A-05-0178, all its customers will benefit from the additional CAP allocation.

Unaccounted-for Water

While RUCO recommends inclusion of 35 percent of the additional CAP allocation in rate base as a drought buffer if needed, RUCO simultaneously argues that if the Company needs a drought buffer, it should "work more diligently to resolve its long-standing water loss issue."[59] RUCO states that in 2007, the Company reported unaccounted-for water of 1,030 acre-feet, or 14 percent[60] as a result of metering inaccuracies either at the homes of ratepayers or at the CAP canal.[61] RUCO does not agree with Staff the fact that the Company's current CAP allocation was exceeded in 2006 shows a need for the additional CAP allocation.[62] RUCO argues that "if the Company accounted for the water in excess of the acceptable loss standard (10%), the Company would have an additional 4% or 315.5-plus acre-feet available to satisfy the needs of its customers" and "[i]f the Company accounted for unaccounted water there would be no need for additional CAP allocation for drought buffer."[63] RUCO's position fails to take into account that, as RUCO acknowledges,[64] the Company's test year unaccounted-for water was not due to "water loss," i.e., leaks, broken mains or maintenance issues. The non-account water issue is likely to be the result of a faulty CAP meter, an issue that the

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[58] *Id.*
[59] RUCO Reply Brief at 7.
[60] RUCO Brief at 5, citing to Tr. at 62.
[61] *Id.* at 5-6, citing to Tr. at 67, 320.
[62] RUCO Reply Brief at 6, referring to Direct Testimony of Staff witness Marlin Scott, Jr. (Exh. S-1), Engineering Report at 11.
[63] RUCO Reply Brief at 6.
[64] RUCO Brief at 5-6.

Company is working to resolve with the Central Arizona Water Control District.[65] Staff's engineering witness testified that CCWC is well-operated, well-maintained and well-managed, and that CCWC is not ignoring water loss issues.[66] As the Company points out, resolution of the likely cause of the unaccounted-for water, a faulty CAP meter, will not result in any additional wet water for the Company to serve its customers.[67] We agree with the Company on this point, and find that RUCO's arguments regarding unaccounted-for water do not justify excluding the additional CAP allocation from rate base.

Staff's Engineering witness states that the Company is aware of its 15.9 percent unaccounted-for water/water loss amount, and that the Company informed Staff it will be installing its own CAP water meter at its Shea Water Treatment Plant to determine whether the CAP intake meter is accurately registering.[68] Staff recommends that the Company begin a 12-month monitoring exercise of its water system after the Company completes its own CAP water meter installation.[69] Staff further recommends that the Company docket the results of the system monitoring as a compliance item in this case by March 1, 2010.[70] Staff recommends that if the reported water loss for the period from February 1, 2009 through February 1, 2010 is greater than 10 percent, the Company be required to prepare a report containing a detailed analysis and plan to reduce water loss to 10 percent or less, or alternatively, if the Company believes it is not cost effective to reduce water loss to less than 10 percent, the Company should be required to submit a detailed cost benefit analysis to support its opinion.[71] Staff recommends that the Company be required to docket the report or alternative cost benefit analysis, if required, by April 30, 2010, as a compliance item for this proceeding for review and certification by Staff, and that in no case should water loss be allowed to remain at 15 percent or greater.[72] Staff's recommendations on this issue are reasonable and will be adopted.

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[65] Tr. at 38, 127-131.
[66] Tr. at 312, 319.
[67] Company Reply Brief at 13, citing Tr. at 130-31.
[68] Direct Testimony of Staff Witness Marlin Scott, Jr. (Exh. S-1) at *i*.
[69] Direct Testimony of Staff Witness Marlin Scott, Jr. (Exh. S-1) at *i*.
[70] *Id.*
[71] *Id.*
[72] *Id.*

Need for the Additional CAP Allocation

RUCO contends that CCWC's current water supplies, without the additional CAP allocation, are sufficient to meet the Company's its current and future demand.[73] At the same time, RUCO argues that if it is determined that some measure of the additional CAP allocation is needed to provide a drought buffer in the event of future curtailments of CAP water, only the used and useful portion of the additional CAP allocation should be included in rate base,[74] and that a current absence of growth in CCWC's service area and CCWC's unaccounted-for water should be considered in determining the amount of the additional CAP allocation that is used and useful.[75] RUCO recommends that "no more than 35%" of the additional CAP allocation be treated as Staff and the Company propose.[76] RUCO contends that the Company's demand estimates do not support placing 100 percent of the additional CAP allocation in rate base,[77] arguing on brief that "by Mr. Hanford's optimistic estimates, 18.17% of the additional CAP allocation will be needed by 2010 and 31.43% by 2016."[78] RUCO also expresses disagreement with Staff's projections, arguing that the growth projections Staff relied on in its determination that 50 percent of the additional CAP allocation is used and useful do not consider current economic circumstances in the Company's service territory.[79] RUCO argues that to reach Staff's projections, CCWC would have to establish 334 new accounts per year from 2007 through 2012,[80] but provided no alternative growth projections or evidence to support its claim other than the accounting analysis opinion of RUCO's witness that the current used and useful portion of the additional CAP allocation "is only about in the single digits."[81] RUCO's recommendation on this issue that "no more than 35 percent" of the additional CAP allocation should be allowed in rate base is difficult to reconcile with its arguments.

The Company states that if it is denied recovery for the additional CAP allocation, the Company would receive a message that it should rely on groundwater pumping if shortages occur,

[73] RUCO Reply Brief at 7.
[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] *Id.* at 5.
[78] *Id.*, citing Tr. at 83-84.
[79] RUCO Reply Brief at 3-4.
[80] *Id.* at 4, referring to Direct Testimony of Staff Witness Marlin Scott, Jr. (Exh. S-1), Engineering Report at 5.
[81] *Id.* at 7, citing Tr. at 301-02.

instead of looking out for the long-term interests of its customers and the community of Fountain Hills by obtaining additional CAP water supplies.[82] RUCO argues that since the Company intends to file a rate case again in two to three years,[83] it is not imperative to include 100 percent of the additional CAP allocation in rate base.[84] The Company explains that if it is not accorded reasonable cost recovery for its purchase of the additional CAP allocation, it is unlikely that it will be able to keep the right that it believes it prudently acquired for the benefit of its customers.[85] The Company's witnesses testified that the Company has made an investment and expects a return on the investment, and that if full recovery of the acquisition costs is not allowed, the Company will be faced with a choice of how to otherwise recoup its investment.[86] If denied regulatory recovery of the investment made on behalf of its ratepayers, according to the Company, its choices will be to either: (1) retain the additional allocation and look for entities who wish to enter into wholesale water delivery arrangements from it; or (2) exchange or relinquish the additional acquisition and get its acquisition payment back.[87]

The application process for the available additional CAP allocations was a competitive one that considered the applicants' needs under the Third Management Plan.[88] Of fifty-three applicants seeking a portion of the 65,647 acre-feet of CAP water available for reallocation, only twenty-six applicants were considered in the first round, and CCWC was one of twenty who were subsequently given the opportunity to purchase an additional CAP allocation.[89] Based on the factual record in this case, we agree with Staff's reasoned recommendation, agreed to by the Company, that the entire acquisition cost of the additional CAP allocation be included in rate base, classified as a plant-in-service component of Land and Land Rights, and not subject to amortization. Our determination is based on the Company's need to provide its customers continued access to adequate renewable water supplies, and on the fact that CCWC acted prudently under the circumstances in the December, 2007,

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[82] Rebuttal Testimony of Company witness Robert J. Sprowls (Exh. A-8) at 5.
[83] RUCO Reply Brief at 6, citing Tr. at 121.
[84] RUCO Reply Brief at 6.
[85] Company Reply Brief at 12.
[86] Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 7.
[87] Direct Testimony of Company witness Robert N. Hanford (Exh. A-1) at 7.
[88] Direct Testimony of Staff witness Marlin Scott, Jr. (Exh. S-1), Engineering Report at 11; Tr. at 325-327.
[89] *Id.*

$1.28 million purchase of the additional CAP allocation.

### C. Working Capital

The Company did not prepare a lead/lag study to quantify its cash working capital requirement.[90] Staff contends that in the absence of the cash working capital component of a lead/lag study, it is inappropriate to consider other components of working capital, and therefore disallowed prepayments and materials and supplies inventory from rate base.[91] Staff's proposed adjustment to rate base removes (1) Unamortized Debt Issuance Costs in the amount of $424,010, (2) Prepayments in the amount of $192,485, and (3) Materials and Supplies Inventory in the amount of $14,521, for a total reduction to rate base of $631,016.[92]

The Company argues that there is no requirement that it prepare a lead/lag study, and that it adopted the lead/lag study prepared by RUCO, along with the negative working capital allowance RUCO derived from its study.[93] RUCO's recommended total working capital is $95,400, which consists of a negative Cash Working Capital allowance of ($111,606), Prepayments in the amount of $192,485, and Materials and Supplies in the amount of $14,521.[94] The Company is critical of the fact that Staff did not analyze RUCO's lead/lag study, which was presented in RUCO's direct testimony, and argues that because Staff did not challenge RUCO's lead/lag study, it should therefore be adopted in lieu of Staff's disallowances.[95] Staff responds that if the Company had prepared a lead/lag study and submitted it with its application, Staff would have had an opportunity to review it and make a recommendation on it.[96]

The Company correctly states that Unamortized Debt Issuance Costs are actually not a part of working capital.[97] Staff's witness testified at the hearing that while they are not, they should be removed from rate base nonetheless, because they are a below-the-line expense, and similar to

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[90] A company's working capital requirement represents the amount of cash the company must have on hand to cover any differences in the time period between when revenues are received and expenses must be paid. The most accurate way to measure the working capital requirement is via a lead/lag study. The lead/lag study measures the actual lead and lag days attributable to the individual revenue and expenses. Staff Brief at 4.
[91] Staff Brief at 5, citing Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 23.
[92] Staff Brief at 5, citing Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 22.
[93] Company Reply Brief at 1.
[94] Direct Testimony of RUCO witness Timothy J. Coley (Exh. R-8) at 23-24.
[95] Company Reply Brief at 1.
[96] Staff Reply Brief at 2.
[97] Company Reply Brief at 2.

interest, are amortized over the life of the debt, and adds that it would also be improper to allow them as operating expenses.[98] The Company disagrees with Staff's assessment that the Unamortized Debt Issuance Costs are a below-the-line expense. The Company argues that no evidence was presented that the costs were improper or unreasonable, calls the idea "nonsensical,"[99] and argues that if Unamortized Debt Issuance Costs are removed from rate base, Staff should have included them in calculating the Company's cost of debt, but did not.[100] However, the Company provided no evidence controverting Staff's expert accounting testimony that Unamortized Debt Issuance Costs should be removed from rate base.[101]

A lead/lag study is the most accurate and appropriate means of measuring the working capital requirements of a utility of CCWC's size. The Company could have prepared and included with the application a lead/lag study to support its request for recovery of working capital allowance. If it had, all parties would have had adequate time for analysis and discovery related to the lead/lag study. The Company chose not to do so. In the absence of the cash working capital component of a lead/lag study, it is inappropriate to consider other components of working capital. The Company chose not to provide a lead/lag study for analysis, but wishes the Commission to allow recovery of working capital components nonetheless. The fact that a lead/lag study was presented by RUCO, and that Staff did not challenge it, does not compel its adoption. Neither does the fact that a lead/lag study was presented by RUCO compel the rejection of Staff's proposed adjustments. RUCO's accounting witness testified that "[s]hould the Commission reject RUCO's first recommendation, RUCO's second recommendation would be to disallow the Company the opportunity to recover materials & supplies and prepayments for which it seeks recovery, since those two items are components of a working capital allowance adjustment."[102] Staff's proposed disallowance of $192,485 in Prepayments and $14,521 in Materials and Supplies Inventory is appropriate, and will be adopted. In

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[98] Tr. at 375-381.
[99] Company Brief at 2.
[100] Company Reply Brief at 14.
[101] The Company may be correct that the Unamortized Debt Issuance Costs should have been included in calculating the cost of debt, but if so, the Company also should have included them in its calculation. As discussed below, the parties are in general agreement on the cost of debt, with the cost of debt adopted in this proceeding slightly higher than that proposed by the Company.
[102] RUCO's Direct Testimony of RUCO witness Timothy J. Coley (Exh. R-8) at 24.

addition, the record supports removal of $424,010 in Unamortized Debt Issuance Costs from rate base. A total reduction to rate base of $631,016 is reasonable and will be adopted.

Staff recommends that the Company be ordered to perform and submit a lead/lag study in conjunction with its next rate adjustment request application in order to meet the sufficiency requirements of that filing. There was no objection to that recommendation, which is reasonable and will be adopted.

**D. CIAC Amortization Rate**

The Company and Staff agree regarding the method for amortization of Contributions in Aid of Construction ("CIAC"),[103] which includes computation of a composite CIAC amortization rate based on depreciation expense.[104] RUCO objects to the method, and recommends instead that the Company "be required to utilize the amortization rate established in the prior case or a rate established based on CIAC amounts and the corresponding plant depreciation rates to insure that plant and CIAC are properly matched."[105] Decision No. 68176 did not establish a specific CIAC amortization rate to be used on a going forward basis. The Company is correct that the reason specific CIAC amortization rates are not set on a going forward basis is that the amortization rate is expected to be adjusted to match the composite depreciation rate for each year, and using a fixed composite rate for amortization of CIAC over lengthy intervals between rate cases can result in significant mismatches between net plant-in-service and net CIAC.[106] Using the CIAC amortization rate utilized in that proceeding would not meet RUCO's goal of insuring that plant and CIAC are properly matched, whereas the methodology used by the Company and Staff in this proceeding does. The methodology used by the Company and Staff, which is based on CIAC amounts, depreciable plant, and depreciation expense in this case, properly matches net plant-in-service and net CIAC, and will be adopted.

**E. Accumulated Depreciation**

Staff proposes an adjustment to reduce Accumulated Depreciation by $2,031,950 from the

[103] Company Reply Brief at 14.
[104] Staff Reply Brief at 2-3.
[105] RUCO Reply Brief at 12.
[106] Company Brief at 15.

Company's amount of $15,877,022 to reflect Staff's Accumulated Depreciation of $13,845,072.[107] Staff states that the reason for the difference is related to Staff's use of the 4.0 percent General Office plant allocation factor and the plant additions and retirements of wells and other plant.[108] Staff contends that the 4.0 percent allocation factor is more correctly matched to the test year.[109] The Company agrees, and states that it accepted the 2.8 percent allocation factor proposed by RUCO as a compromise and to help minimize issues, even though it would result in a lower rate base and lower rates.[110] RUCO did not address the issue on brief. Staff's adjustment is reasonable and will be adopted.

## IV. FAIR VALUE RATE BASE

Based on the foregoing discussion, we adopt an adjusted OCRB for the Company of $21,370,877, and an adjusted RCND of $32,181,951, weighted 50/50, for a FVRB of $26,776,414.

## V. OPERATING INCOME ISSUES

### A. Property Tax Expense Calculation

The Company and Staff propose to follow recent Commission Decisions to use adjusted test-year revenues in the application of the Arizona Department of Revenue ("ADOR") formula in order to determine allowed property tax expense.[111] As in many past rate cases, RUCO disagrees with this methodology, and proposes the use of either the "ADOR methodology of averaging three historical years, or RUCO's new alternative of adding the last known and measurable property tax expense and the property tax expense associated with the additional increment of adjusted proposed revenue approved by the Commission."[112] RUCO attached as an exhibit to its closing brief a new schedule showing the effect of RUCO's new alternative methodology on the proposed revenues of the parties.[113] RUCO states that the Company collected nearly $300,000 more property tax expense than it actually paid in the three years from 2006 to 2008, due to a decrease in the Company's property tax

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[107] Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 20.
[108] *Id.*
[109] *Id.*
[110] Company Reply Brief at 3.
[111] Direct Testimony of Staff witness Marvin E. Millsap (Exh. S-2) Schedule MEM-25; Rebuttal Testimony of Company witness Thomas J. Bourassa (Exh. A-5) at 17.
[112] RUCO Reply Brief at 12.
[113] RUCO Brief, Exhibit A.

assessment, which RUCO states was "due in great part to the reduction in tax rate and the tax assessment ratio, adopted by the Arizona Legislature in HB 2779 and codified at A.R.S. § 41-15002."[114] RUCO argues that if the methodology it advocates had been used in the prior rate case, averaging the three prior years of reported gross revenue by a factor of two, would have resulted in $19,000 less in allowed property tax expense.[115] The Company disagrees with RUCO's claim that it has overcollected property tax expense. The Company argues that having consistently failed to earn sufficient revenue to earn its authorized rate of return every year since the current rates went into effect, the Company has not over-recovered anything, rendering RUCO's argument illusory.[116] The Company contends that RUCO's claim demonstrates the danger of singling out one expense to evaluate over-or under-recovery, and that RUCO's contention that the Company "overcollected" property taxes is both misleading and untrue.[117] Staff argues that because RUCO has provided no other substantive basis for deviating from the methodology the Commission has consistently utilized in calculating property tax expense, that the Commission should adopt the methodology used by the Company and RUCO in this case.[118]

We agree with RUCO that the difference in the estimated property tax in the last rate case and the amount of property tax paid in the years from 2006 to 2008 was due largely to tax rate and tax assessment ratio changes, and not to the methodology used to estimate the Company's property tax expense.[119] And we agree with the Company that looking at a single expense allowance from a prior rate case in order to judge expense under- or over-collection, can be misleading and should be avoided, as should any other single-issue ratemaking exercise. Unlike many test year expenses, a determination of property tax expense involves a forward-looking estimation. Using the revenue-dependent methodology based on the ADOR formula that has repeatedly been approved by the Commission, Staff and the Company utilized adjusted test-year revenues in the application of the ADOR formula to estimate the Company's future property tax expense, in order to determine an

[114] RUCO Brief at 12, citing Surrebuttal Testimony of RUCO witness Timothy J. Coley (Exh. R-9) at 31-32.
[115] RUCO Brief at 12, citing Surrebuttal Testimony of RUCO witness Timothy J. Coley (Exh. R-9) at 38-41.
[116] Company Reply Brief at 15.
[117] Company Brief at 17, citing Tr. at 158-59.
[118] Staff Reply Brief at 9.
[119] RUCO Brief at 12.

appropriate allowed expense level based on that estimation. Staff's method calculates the appropriate level of ongoing property tax expense for the revenue requirement by including a component for property taxes that reflects known assessment ratios and tax rates in the gross revenue conversion factor.[120] RUCO's arguments in this case do not provide a basis for requiring any changes to the simple, accurate, reliable and reasonable methodology we have approved in past cases and again adopt in this case.

**B. Expense Normalization**

Staff proposes adjustments to normalize test year Chemical Expenses and Repairs and Maintenance Expenses. The Company opposes both normalization adjustments.

Chemical Expenses

Staff's proposed normalization of Chemical Expenses would reduce the test year expense level from $127,457 to $99,827, which is the three-year average of the Company's chemical expenses for 2004, 2005, and the test year, 2006. The expenses in 2004 were $66,210; in 2005, $105,814; and in 2006, $127,457. Staff asserts that the normalization is appropriate because the Company's chemical expenses have more than doubled subsequent to the Company's prior test year of 2003, and because there were two large invoices totaling approximately $17,000 for chemicals delivered in December, 2006 that Staff believes were to be used post test year.[121] Staff asserts that the December 2006 invoices were for deliveries not made on a monthly basis, but over longer time periods, and that Staff believed those chemicals were for use in the following year, not the test year, and should therefore not have been included in test year expenses.[122] Staff's witness also testified that he knew that a new treatment plant had come online during the three-year time period he used for the normalization averaging, so that he was aware that chemical expenses would increase.[123] The Company disagrees with the normalization adjustment, contending that the test year is presumed to be normal, and adjustments should be based on known and measurable changes.[124] We agree. In this instance, it was known to Staff that due to the new treatment plant, chemical expenses would have

[120] Staff Brief at 10.
[121] Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 33; Tr. at 384-85.
[122] Tr. at 384-85.
[123] *Id.*
[124] Company Brief at 19.

increased.[125] In regard to the December 2006 invoices, the record does not reflect any inquiry demonstrating that Staff's assumption that the chemicals were not properly a test year expense was correct. If so, it may have been proper to exclude them from test year expenses, but that is not what Staff proposed. Even if Staff had shown that the invoice amounts should have been excluded, the exclusion would not have justified a normalization adjustment. Because the record does not support the normalization of Chemical Expense proposed by Staff, the actual test year expense will be allowed instead.

Repairs and Maintenance Expense

Staff proposes a normalization adjustment to the Company's Repair and Maintenance Expense reducing the test year expense from $104,609 to $91,134. Staff believes that the fluctuation in this expense account, from $96,152 in 2004, to $72,640 in 2005, to $104,609 in the test year, called for a normalization adjustment, based on Staff's opinion that there "does not appear to be any upward trending in these expenses."[126] In addition, Staff proposes exclusion of $5,543 of test year expenses booked in this account for the Company's payments to Pepsi Cola Company of Dallas for beverages for the Company's employees. The Company does not dispute that the $5,543 should be disallowed. We agree with Staff that this is an expense that should be borne by the shareholders, not the ratepayers, and will not be allowed. The $5,543 disallowance to test year expenses brings the test year level of repair and maintenance expense down to a level close to the 2004 level of expense, which, based on the evidence presented, is a reasonable level. Because the record does not support Staff's proposed normalization of Repairs and Maintenance Expense, the actual test year expense, less Staff's proposed disallowance of $5,543, will be allowed.

### C. Deferral of CAP M&I Charges

The Company and Staff agree that the Company should be allowed recovery of 50 percent of the CAP M&I charges related to the additional CAP allocation, or $20,306, as an operating expense, based on Staff's position that only 50 percent of the additional CAP allocation is used and useful at this time, and that 50 percent of the charges should be deferred.[127] Staff filed in this docket proposed

[125] Tr. at 384-85.
[126] Testimony of Staff witness Marvin E. Millsap (Exh. S-2) at 34; Staff Reply Brief at 4.
[127] Company Brief at 11, 20-21; Staff Reply Brief at 4.

accounting order language which would allow the deferral of the remaining 50 percent of the M&I charges.[128] RUCO states that if it is determined that some portion of the additional CAP allocation is used and useful, a commensurate portion of the associated annual water service capital charge should be included as an M&I expense in this case.[129] RUCO does not oppose the accounting order language as to form.[130] The Company disagrees with language in Staff's accounting order proposal allowing the Company a 36 month deferral period,[131] and included its own proposed accounting order language as an attachment to its closing brief.[132]

The Company and Staff disagree on two issues related to the deferral: (1) whether the Company should be allowed to defer interest or other carrying charges, and (2) whether the deferral should have a time limitation.

The Company asserts that until the recovery of interest or carrying costs can be considered in a future rate case, the Company should be allowed to accrue reasonable carrying costs.[133] Staff contends that it is inappropriate to allow the Company to accrue interest on the deferral, because 50 percent of the M&I charges are not currently used and useful.[134] As Staff notes, the interest and timeframe requirements of Staff's proposal are consistent with other Commission Accounting Orders.[135] Staff's language "excluding any interest or other carrying charges" is consistent with our other Accounting Orders and will therefore be adopted.

The Company contends that there is no reason for "preset, artificial limits" on the deferral period.[136] Staff argues that without a specified timeframe, the Company would be able to defer the charges indefinitely.[137] Staff contends that 36 months is a reasonable timeframe for the deferral period, and points out that its proposal also includes a provision allowing the Company to continue the deferral beyond its evaluation in the Company's next rate case, such that the Staff proposal does

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[128] Staff Proposed Accounting Order Language docketed on January 6, 2009.
[129] RUCO Reply Brief at 7.
[130] RUCO Response to Proposed Accounting Order, docketed on January 13, 2009.
[131] Company Brief at 21-22 and Exhibit 2.
[132] Company Brief at Exhibit 2.
[133] Company Brief at 21-22 and Exhibit 2.
[134] Staff Reply Brief at 5.
[135] *Id.*
[136] Company Brief at 21-22 and Exhibit 2.
[137] Staff Reply Brief at 5.

not specifically limit the deferral to 36 months.[138] Staff states that it proposed the 36 month timeframe in order to permit time for Staff to evaluate whether the Company is properly accounting for the deferral, and also to determine if all or a portion of the deferred charges are used and useful, and therefore eligible to be placed in rates.[139] For the reasons provided by Staff, we agree that a definite timeframe should be placed on the deferral period, and find that under the circumstances of this case, a 48 month period is reasonable.

### D. Rate Case Expense

The Company requests authority to recover rate case expense associated with this case in the amount of $280,000. The Company states that it based its request primarily on the $285,000 amount awarded in its last rate proceeding, and that it has incurred more than $280,000 in this proceeding.[140] RUCO did not brief the issue of rate case expense for this case. Staff proposes that the Company be allowed to recover no more than $150,000 in rate case expense for this proceeding, arguing that $150,000 in rate case expense is similar to amounts the Commission has allowed comparably-sized utilities to recover through just and reasonable rates.[141] Staff recommends that rate case expense be normalized, instead of amortized.[142] The Company argues that Staff's opposition to the Company's request for this proceeding is not supported by the evidence, because Staff gave no consideration to the specifics of this rate case, to the rate case process, or to the similar rate case expense awards relied on by the Company, and because Staff could not provide specifics regarding the cases its witness relied on in reaching his recommendation.[143] The Company requests that if its rate case expense recovery is normalized, as Staff recommends, rather than amortized, that it be granted authority to institute a surcharge instead "to ensure that recovery actually occurs."[144] Based on our review of the record, we find that it is reasonable to allow recovery of $280,000 for the expenses incurred by the Company in this proceeding. We agree with Staff that because rate case expense is a

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[138] *Id.*
[139] *Id.*
[140] Company Brief at 22, citing Rebuttal Testimony of Company witness Thomas J. Bourassa (Exh. A-5) at 15 and Rebuttal Testimony of Company witness Robert N. Hanford (Exh. A-2) at 10.
[141] Staff Brief at 8.
[142] *Id.*
[143] Company Brief at 24, citing Tr. at 390-98.
[144] Company Reply Brief at 6.

recurring expense, normalization is a more appropriate treatment than amortization, and that a surcharge for recovery of rate case expense would be inappropriate. The $280,000 allowed rate case expense related to this proceeding will therefore be normalized over three years.

### E. Appeal and Remand Rate Case Expense

In addition to the Company's requested recovery of rate case expenses associated with this proceeding, the Company has requested recovery in this docket of its rate case expenses associated with the Remand Proceeding, as allowed by Decision No. 70441.[145] The Company originally requested recovery of $258,111 of the $500,000 of rate case expense it incurred in its appeal of Decision No. 68176 and the Remand Proceeding, which included expert witness fees, copying, mailing and publication costs, and discounted legal fees.[146] The Company currently requests recovery of $100,000 of these expenses through operating expenses, together with the $280,000 in expenses associated with this proceeding, discussed above, for a total recovery of $380,000, amortized over three years, resulting in a total annual expense of $126,667 reflected in the revenue requirement for this case.[147] Staff recommends that the Company be permitted to recover $100,000 in rate case expense related to the Remand Proceeding, normalized over a three year period, which, with its recommendation of recovery of $150,000 related to the current proceeding, would result in total rate case expense of $250,000, normalized over a three year period, for a total annual rate case expense of $83,333 reflected in the revenue requirement for this case.[148] RUCO recommends denial of any rate case expense recovery related to the Company's appeal of Decision No. 68176 and the Remand Proceeding, and RUCO's final schedules show total annual rate case expense of $93,333 reflected in the revenue requirement for this case.[149]

RUCO argues that the Company's request for legal fees for the appeal and remand of Decision No. 68176 should be denied "as a matter of law and public policy."[150] RUCO argues that

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[145] Decision No. 70441 at 43.
[146] Supplemental Direct Testimony of Company witness Thomas J. Bourassa (Exh. A-4) at 2-7.
[147] Company Reply Brief at 6.
[148] Staff Brief at 7-8.
[149] RUCO Final Schedule TJC-27.
[150] RUCO Reply Brief at 12.

"[a]lthough the appeal and remand corrected the method by which the Commission determined FVRB rate of return, the Company pursued the appeal to obtain additional operating income for the benefit of its shareholders,"[151] and contends that the shareholders should therefore bear the costs associated with that lawsuit, and the Company should "pay the costs for its business decision to pursue an appeal."[152] RUCO argues that "[p]ermitting the Company to recover its rate case expense on a lawsuit to benefit shareholders would leave the utilities with the expectation that they can pursue any lawsuit with no worry of the costs associated therewith because captive ratepayers will pick up the tab."[153]

The Company contends that it is in the public interest to ensure the legality of Commission Decisions, and therefore the Company should not bear the entire burden of the expense it incurred to appeal a Decision for which the Company was not responsible, and which the court found unlawful.[154] The Company also states that contrary to RUCO's assertion that a utility "can pursue any lawsuit with no worry of the costs," a utility has no expectation of any expense recovery unless it prevails in its appeal, and that even if a Company is successful, full recovery of expenses is unlikely.[155]

RUCO advances the argument that that Arizona law does not permit recovery of attorney's fees on remand, citing A.R.S. § 12-348 and *Columbia Parcar Corp. v. Arizona Dept. of Transportation.*[156] *Columbia Parcar* held that plaintiffs did not prevail in adjudication "on the merits" on judicial review by securing reversal and remand for new hearing on procedural grounds, and thus were not entitled to award of fees. In *Columbia Parcar*, in the administrative proceeding leading to the appeal, plaintiffs were not allowed to present evidence on statutory requirements related to their claim.[157] The facts of *Columbia Parcar* are therefore distinguishable from the facts in

[151] RUCO Brief at 11.
[152] *Id.*
[153] *Id.* 11.
[154] Company Brief at 24.
[155] Company Reply Brief at 16.
[156] RUCO Brief at 10, citing *Columbia Parcar Corp. v. Arizona Dept. of Transportation,* 193 Ariz. 181, 971 P.2d 1042 (App. 1999).
[157] *Columbia Parcar,* 193 Ariz. at 183, 971 P.2d at 1043.

this case, as CCWC did not secure its remand of Decision No. 68176 on procedural grounds, but because it prevailed on the merits of its appeal of a specific ratemaking issue. We also agree with the Company that the statute cited by RUCO does not apply to this case, as A.R.S. § 12-348(H)(1) does not apply to actions "to establish or fix a rate."[158]

Although we find that the Commission has authority to award attorneys fees to the Company for the appeal and the remand proceeding, we decline to do under these circumstances. The Company spent more than $500,000 to recover an additional $12,000 in operating income. While no one disputes the Company's right to pursue whatever legal recourse it wants to pursue, we believe that Company should maintain a proper perspective of the costs and benefits associated therewith. In order to ensure the Company undertakes the appropriate analysis of the risks and benefits of litigation, we will not allow the Company to impose the costs of the appeal upon captive ratepayers.

### F. Operating Income Summary

With the adjustments discussed above, we find the Company's test year operating expenses to be $6,561,825, on adjusted test year revenues of $7,505,010, for adjusted test year operating income of $943,185.

## VI. COST OF CAPITAL

The parties to this case recommend a rate of return for the Company as follows: CCWC, 9.96 percent; RUCO, 6.38 percent;[159] and Staff, 7.6 percent.[160] For the reasons discussed below, we adopt a FVROR for the Company of 7.52 percent.

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[158] A.R.S. § 12-348(H)(1) provides:

> This section does not:
>
> 1. Apply to an action arising from a proceeding before this state or a city, town or county in which the role of this state or a city, town or county was to determine the eligibility or entitlement of an individual to a monetary benefit or its equivalent, to adjudicate a dispute or issue between private parties or to establish or fix a rate.

[159] RUCO Final Schedule TJC-36.

[160] Staff Final Schedule PMC-2.

### A. Capital Structure and Cost of Debt

Capital Structure

The parties are generally in agreement regarding CCWC's capital structure. The Company proposes a capital structure consisting of 3.97 percent short-term debt, 19.45 percent long-term debt, and 76.58 percent equity. RUCO recommends a capital structure comprised of 4.08 percent short-term debt, 19.17 percent long-term debt, and 76.75 percent common equity. Staff proposes a capital structure of 75.6 percent equity and 24.4 percent debt. The minor differences in the parties' recommendations are attributable to the Company's use of the capital structure at the end of the test year, while Staff and RUCO used a more recent capital structure.[161] Based on the parties' proposals, we find that a capital structure of 24 percent debt and 76 percent equity is reasonable for the Company in this case.

Cost of Debt

The Company proposes a cost of short-term debt of 2.88 percent, which it based on the London Inter-Bank Offered Rate ("LIBOR") reported on November 21, 2008.[162] CCWC's short term debt is provided by its parent, American States Water Company, subject to variable interest rates based on the LIBOR.[163] CCWC's proposed cost of long-term debt, 5.33 percent, is based on the end of test year interest rate on its low-cost bonds issued in 1997,[164] for an overall cost of debt of 4.92 percent.[165] RUCO recommends a cost of short-term debt of 2.71 percent, and a cost of long-term debt of 5.34 percent. Staff proposes a composite cost of long-term and short-term debt of 5.0 percent, which takes into account changes to the Company's long-term debt occurring after the test year.[166] Based on the parties' proposals, we find that the 5.0 percent composite cost of debt recommended by Staff is reasonable, and will adopt it.

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[161] *See* Cost of Capital ("COC") Rejoinder Testimony of Company witness Thomas J. Bourassa (Exh. A-21) at 4-5.
[162] Company COC Brief ("Brief") at 31.
[163] *Id.*
[164] *See* Company Amended Final Sched. D-2.
[165] Staff COC Brief at 2.
[166] Staff Final Sched. PMC-10.

**B. Cost of Equity**

Using the DCF and CAPM models, the Company's cost of capital witness estimated the Company's cost of equity to be 12.7 percent. The Company states that although it believes its current cost of equity is 12.7 percent, it has requested a cost of equity of 11.5 percent in order to minimize disputes.[167] Staff's cost of equity estimate is 10.1 percent.[168] RUCO's unadjusted cost of equity estimate is 8.83 percent.[169]

While the Company and Staff used the same six publicly traded water companies as a sample group in their cost of equity analyses, RUCO's sample group differed. The Company disagrees with the group of publicly traded utilities RUCO used to estimate CCWC's cost of equity. In particular, CCWC disagrees with RUCO's substitution of Southwest Water Company for Connecticut Water Service, Middlesex Water Company, and SJW Corporation. RUCO asserts that Southwest Water Company is an appropriate comparable company because American States Water, CCWC's parent company, offers nearly identical service as Southwest Water Company, including unregulated services, and has an identical risk as Southwest Water Company, demonstrated by the fact that the two companies share the same market beta[170] of 1.05, as reported in Value Line Utility Reports.[171] CCWC argues that Southwest Water Company is not comparable to either CCWC or to the publicly traded water utilities in the sample group used by CCWC and Staff in their cost of equity estimates. CCWC states that according to AUS Utility Reports (November 2008) only 45 percent of Southwest Water Company's revenues are derived from regulated activities, whereas four of the six water utilities used by CCWC and Staff have at least 90 percent of their revenue derived from regulated activities, and the remaining two have 82 percent and 85 percent of their revenues derived from regulated activities.[172] CCWC argues that in comparison to Southwest Water's 45 percent of

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[167] Company COC Brief at 2.
[168] Staff Final Schedule PMC-1.
[169] RUCO Final Schedule TJC-36. RUCO refers to this as the "OCRB Weighted Cost of Capital."
[170] Beta measures the systematic risk of a particular entity's stock relative to the market's beta, which is 1.0. Since the market's beta is 1.0, a security with a beta higher than 1.0 is riskier than the market and a security with a beta lower than 1.0 is less risky than the market. *See* Direct Testimony of Staff Witness Pedro M. Chaves, (Exh. A-16) at 29.
[171] RUCO COC Brief at 8, RUCO COC Reply Brief at 4.
[172] COC Rejoinder Testimony of Company witness Thomas J. Bourassa (Exh. A-21) at 28.

revenues from regulated activities, 86 percent of CCWC's parent company American States Water's revenues and 96 percent of its net income were generated by its principal subsidiary, Golden State Water Company, which also owns 92 percent of American States Water's assets, but CCWC did not specify the percentage of those revenues derived from regulated services.[173] CCWC also argues that Southwest Water Company's earnings per share were negative for the twelve-month period ended June 30, 2008, and that RUCO's use of this financially troubled company in its proxy group depressed RUCO's cost of equity estimate by 60 basis points.[174] CCWC contends that *Sun City Water Co. v. Arizona Corp. Comm'n*[175] supports its position that Southwest Water should be excluded from RUCO's proxy group because it is "financially sick."[176] We disagree. The facts in the *Sun City* case are distinguishable from this case in two significant ways. First, the court in the *Sun City* case did not address the use of companies in a proxy group for either a DCF or CAPM analysis, and was instead criticizing the use of comparative earnings analysis for setting a rate of return for the water utility in question.[177] A comparative earnings analysis, which is not proposed by any party to this case, differs greatly from the DCF and CAPM analyses in the use of companies for comparison purposes. Second, the *Sun City* court referred not to an individual "financially sick" company, but to the "financially sick" condition of the water utility industry as a whole at that time, while criticizing the comparative earnings analysis used in that case as being particularly inappropriate "when evidence was presented that this industry was generally sick financially".[178]

The Company also disagrees with RUCO's use of a sample group of natural gas distribution utilities, and argues that an adjustment must be made to account for their use as proxies. RUCO states that gas utilities serve as an appropriate proxy for CCWC because gas and water companies have similar operating characteristics in terms of distribution and similar risks.[179] CCWC asserts that because RUCO's water utility proxy group, with an average beta of 0.82, has more systematic

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[173] Company COC Reply Brief at 18-19.
[174] *Id.* at 35, citing Rigsby Dt., Sched. WAR-2.
[175] *Sun City Water Company v. Arizona Corp. Comm'n*, 26 Ariz. App. 304 , 310, 547 P.2d 1104, 1110 (App. 1976), *rev'd on other grounds*, 113 Ariz. 464, 556 P.2d 1126 (1976).
[176] Company COC Reply Brief at 19.
[177] *Sun City Water Company*, 26 Ariz. App. at 310, 547 P.2d at 1110.
[178] *Id.*
[179] RUCO COC Brief at 7.

(market) risk than its gas utility proxy group, with an average beta of 1.05, that the gas proxy group is not comparable to CCWC.[180] CCWC argues that because the gas proxy group's average beta is higher than the water proxy group's, an adjustment must be made to account for the current difference in risk between a typical water utility and a typical gas utility.[181] CCWC asserts that Commission Decision No. 66849 "rejected the use of gas companies as proxies for a water utility based on the difference between the average beta of the water utility sample group and average beta of the gas utility sample group," that "use of the gas utility sample as a proxy for the water utility would have increased the cost of equity,"[182] and that Staff's position in the case leading to Decision No. 66849 supports a 250 basis point upward adjustment in this case.[183] Decision No. 66849 does not support such an adjustment. Contrary to the Company's assertion, Decision No. 66849 did not reject Staff's use of a gas proxy group. However, it did reject Staff's position that its use of gas proxies necessitated a downward adjustment to Staff's cost of equity estimate. Decision No. 66849 instead adopted Staff's unadjusted average of its DCF and CAPM models. The use of a gas utility sample had the effect of increasing the cost of equity over Staff's recommendation in that case.[184] The Company's argument that a failure in this case to make an upward adjustment would constitute an arbitrary and capricious action[185] is simply wrong. In this case, as RUCO points out, CCWC itself used water utilities with the same range of beta as RUCO's gas proxy; one third of the companies in CCWC's water proxy group have the same range of betas as the companies in RUCO's gas proxy group; nine of the ten gas utilities in RUCO's gas proxy have betas between 0.80 and 0.90; the Company's proxy group of six water companies included Connecticut and Middlesex Water Companies, which have betas ranging between 0.80 and 0.90;[186] and testimony on the record indicates that there is movement toward using gas utility proxies to derive cost of capital for water

[180] Company COC Brief at 36.
[181] *Id.*
[182] Company COC Reply Brief at 19-20, citing Decision No. 66849 (March 19, 2004) *In the Matter of the Application of Arizona Water Company, an Arizona Corporation, for Adjustments to its Rates and Charges for Utility Service Furnished by its Eastern Group and for Certain Related Approvals* at 21.
[183] Company COC Reply Brief at 20.
[184] Decision No. 66849 at 23.
[185] *See* Company COC Reply Brief at 20.
[186] RUCO COC Brief at 6-7.

companies.[187] The record does not reflect a need for a special adjustment due to RUCO's use of natural gas distribution utilities as proxies.

While the Company arrived at its CAPM cost of equity estimate of 14.6 percent by averaging its historical market risk premium result of 9.8 percent with its 19.4 percent current market risk premium result, RUCO did not use a current market risk premium, but reached its CAPM estimate based on a historic market risk premium.[188] RUCO calculated a range for its CAPM cost of equity between 8.10 and 9.78 percent for its water sample, and between 6.94 and 8.25 percent for its gas sample.[189] RUCO contends that because reliance on past performance is a better indicator of future performance than reliance on analyst's projections of market return and treasury yields, RUCO's use of a historic market risk premium to derive a CAPM cost of equity capital is appropriate, particularly in the current economic circumstances.[190] While the Company argues that market volatility does not make the CAPM unstable or subject to manipulation,[191] RUCO concurs with Staff's witness David Parcell that the current risk premium CAPM is not a proper model in a very depressed market, and that the Company's CAPM analysis should be rejected because it is based, in part, on a current market risk premium.[192] RUCO agrees with Mr. Parcell that development of a growth rate from stocks priced in an extremely depressed market leads to a CAPM which is too high.[193] RUCO further argues that the Company's use of a 19.4 percent current market risk premium to determine a cost of equity capital is inconsistent with the most recently available market data, comparing it to Value Line's October 24, 2008 projections of 7.50 percent for the return on common equity for the water industry through the five year period through 2013, for a difference of 1,190 basis points.[194] We agree with RUCO and Staff that the Company's CAPM should be rejected because it is based, in part on a current market risk premium, which is inappropriate in a depressed market.

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[187] *Id.* at 7, citing Tr. at 776-77.
[188] RUCO COC Brief at 2.
[189] COC Direct Testimony of RUCO witness William A. Rigsby (Exh. R-14) at 333-34.
[190] RUCO COC Brief at 3, RUCO COC Reply Brief at 8.
[191] Company COC Reply Brief at 15.
[192] RUCO COC Brief at 4, citing David Parcell's testimony, Tr. at 746, 759-761.
[193] RUCO COC Reply Br at 7-8, citing Staff witness David Parcell's testimony, Tr. at 759.
[194] RUCO COC Reply Brief at 8, citing Company witness Thomas Bourassa's testimony, Tr. at 580.

The Company asserts that RUCO significantly reduced its CAPM cost of equity estimate by using a geometric mean to calculate the market risk premium, by using two different Treasury securities as its proxy for the risk-free rate of return, and by using the average total return, instead of the average income return, on risk-free Treasuries.[195] RUCO derived its historic market premium using both a geometric and an arithmetic mean of the historical returns on the Standard and Poor's 500 ("S&P 500") index from 1926 to 2007 as the proxy for the market rate of return.[196] RUCO states that the use of geometric mean is the industry standard, that geometric means are published in Morningstar, and that Value Line calculates both historic and prospective growth rates on a geometric or compound growth rate basis.[197] RUCO also argues that its historic market risk premium range of between 4.90 percent and 6.5 percent, for an average of 5.7 percent, falls close to the range of 4.0 to 5.0 percent identified as reasonable in a recent professional presentation,[198] and the range of 4.5 to 5.5 percent identified as reasonable in a recent publication cited in this case by both the Company and RUCO.[199] RUCO contends that because its historic market risk premium falls close to the range identified as reasonable by recent empirical research, and the Company's historic market risk premium using an arithmetic mean of 7.5 percent does not, the Company's cost of equity recommendation should be rejected.[200] CCWC argues, unconvincingly, that RUCO's use of an excerpt from the Koller, Goedhart, and Wessels text[201] (to which the Company cited as supporting a separate issue) fails to support RUCO's contention that its market risk premium of 5.7 percent, the average of its geometric and arithmetic mean, is reasonable, because the risk premium in this case is not being computed with short-term bonds, and because the Company's calculations are not found in a textbook.[202] The Company argues that its 7.5 percent historic market risk premium is not too high,

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[195] Company COC Brief at 40-49.
[196] RUCO COC Brief at 4.
[197] *Id.* at 4-5.
[198] *Id.* at 5, citing opinions given by Dr. Aswarth Damdaran, New York University professor of finance and Dr. Felicia C. Marston, University of Virginia professor of finance during a panel discussion presentation at the 39th Annual Financial Forum of the Society of Utility and Regulatory Financial Analysts held April 19 and 20, 2007, at Georgetown University.
[199] RUCO COC Brief at 5, citing *Valuation: Measuring and Managing the Value of Companies*, 4th Ed., 2005, by McKinsey & Company, Inc., Koller, Goedhart, and Wessels, p. 306.
[200] RUCO COC Brief at 5.
[201] *Valuation: Measuring and Managing the Value of Companies*, 4th Ed., 2005, by McKinsey & Company, Inc., Koller, Goedhart, and Wessels, p. 306.
[202] Company COC Reply Brief at 17.

as RUCO contends, because both Staff and the Company used the arithmetic mean published in the *2008 Ibbotson SBBI Valuation Edition Yearbook* (Morningstar 2008), which calculates the historic risk premium by averaging the historic arithmetic differences between the S&P 500 and intermediate-term government bond income returns for the period 1926 through 2007, and RUCO "has presented no evidence that *Ibbotson*'s calculations are erroneous.[203] Staff's witness Mr. Parcell states that because investors use both arithmetic and geometric average returns, both should be considered in the development of a risk premium.[204] Mr. Parcell states that exclusive use of arithmetic averages leads to a higher, and potentially excessive risk premium, and thus CAPM results, because arithmetic averages exceed geometric averages.[205] Although Staff has traditionally used arithmetic averages as a component of its historic risk premium, Staff's witness Mr. Parcell's testimony supports RUCO's use of both arithmetic and geometric averages in the development of the historic market risk premium.

In response to CCWC's assertion that RUCO significantly reduced its CAPM cost of equity estimate by using two different Treasury securities as its proxy for the risk-free rate of return, and by using the average total return, instead of the average income return, on risk-free Treasuries, RUCO states that initially, it used both intermediate and long-term securities to estimate the risk-free rate of return, but then recalculated its historic market risk premium, using matching intermediate treasuries as advocated by the Company, and that the impact of recalculating its cost of equity capital estimate based on the Company's methodology would be an increase of 10 basis points, from 6.38 percent to 6.48 percent.[206] RUCO explains that it is not modifying its recommendation, because its recommendation of 6.38 percent is based on a market risk premium that already exceeds the market risk premium recommended by the authorities on which RUCO relied.[207]

CCWC asserts that RUCO's reliance on only the sustainable growth method to estimate the dividend growth component of its constant growth DCF estimate also causes RUCO's cost of equity

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[203] *Id.*
[204] Surrebuttal Testimony of Staff witness David C. Parcell (Exh. S-7) at 10.
[205] *Id.*
[206] RUCO COC Reply Brief at 6.
[207] *Id.* at 7.

estimate to be understated.[208] CCWC argues that RUCO failed to disclose the key inputs necessary to estimate the internal or retention growth rate it used in the constant growth DCF model, and the estimate should be rejected because it cannot be reproduced or updated based on more current market data or information.[209] RUCO responds that this argument is a red herring, as there was essentially no difference between the parties' cost of capital experts' estimates of average sustainable growth for water utility proxies.[210] RUCO points out that CCWC's cost of capital expert estimated the average sustainable growth to be 6.39 percent for his water utility sample, leaving a difference of only 9 basis points between the Company's estimate and RUCO's estimate, which was 6.30 percent.[211]

CCWC argues that because Mr. Parcell testified that he was required to accept the models and inputs used by Staff's witness, Mr. Chaves, to estimate CCWC's cost of equity, Mr. Parcell's testimony has limited relevance to this case.[212] Until it filed its reply brief, the Company's arguments actually ignored Staff's recommended cost of equity of 10.1 percent, apparently preferring to argue that "Staff's final recommendation is 11.9 percent," and that Staff's recommendation is "not affected by recent market volatility and related events.[213] The Company also argued that the only aspect of Mr. Chaves' methods Mr. Parcell actually disagreed with was that Staff's current market risk premium estimate was too high due to current market volatility.[214] Because Staff filed surrebuttal testimony withdrawing its recommendation for a Hamada adjustment prior to the hearing,[215] The Company's post-hearing brief argument against the "recommended 180 basis point downward adjustment to [Staff's] 11.9 percent cost of equity estimate"[216] is misplaced and irrelevant.

Staff is critical of the Company's use, in the current economic environment, of spot stock prices in its DCF and CAPM models.[217] Staff argues that theses are not normal times, and that times

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[208] Company COC Brief at 38.
[209] *Id.* at 38-39
[210] RUCO COC Reply Brief at 2.
[211] *Id.*
[212] Company COC Brief at 49.
[213] *Id.* at 50-51(emphasis in original).
[214] *Id.* at 50.
[215] Surrebuttal Testimony of Staff witness David C. Parcell (Exh. S-7) at 12.
[216] Company COC Brief at 52-55.
[217] Staff COC Brief at 6.

such as these may require a departure from methods the Commission has previously relied on.[218] Staff's witness testified that market models such as the DCF and CAPM are forward looking, and assume that stock prices and interest rates reflect current expectations of the future, but that such assumptions are not applicable in today's economic environment.[219]

The Company asserts that the riskiness of the sample water utilities the parties used to estimate cost of equity has increased since CCWC's last rate case, as shown by the sample companies' increase in their average beta, which the Company states is currently 0.93, while the average beta for the same proxy group was 0.68.[220] The Company argues that the fact that the markets are riskier now than in previous years requires a higher cost of equity than CCWC was authorized in its prior case, in order to allow it to continue to attract capital.[221] Staff notes that its cost of equity recommendation of 10.1 percent constitutes an 80 basis point increase from the 9.3 percent cost of equity as determined in Decision No. 68176 and upheld by the Court of Appeals, but that the Company's cost of equity estimate of 11.5 percent constitutes an increase of 220 basis points.[222] Staff contends that the Company has failed to justify such a large increase in its cost of equity.[223]

We certainly recognize that current market conditions present increased risks over recent years for many companies. However, we do not find that a general increased level of risk justifies the cost of equity requested by the Company. While the Company is critical of the inputs RUCO and Staff chose to use in their cost of equity estimation models, as discussed herein, several of the Company's arguments against them are unsupported by the facts. Taken in total, we find the methodologies Staff and RUCO used to be less biased than those used by the Company, and more reasonable and more reflective of current market conditions. Based on the analyses presented, we find a cost of common equity of 9.9 percent to be reasonable in this case.

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[218] *Id.*
[219] Tr. at 740.
[220] Company COC Brief at 1.
[221] Company COC Reply Brief at 10-11.
[222] Staff COC Reply Brief at 3
[223] *Id.*

### C. Cost of Capital Summary

| | Percentage | Cost | Weighted Cost |
|---|---|---|---|
| Debt | 24.0 | 5.0% | 1.20% |
| Common Equity | 76.0 | 9.9% | 7.52% |
| **Weighted Average Cost of Capital** | | | **8.72%** |

### D. Fair Value Rate of Return

CCWC's most recent rate proceeding, which resulted in Decision No. 68176, was the subject of an Arizona Court of Appeals decision which ordered a remand to this Commission on the issue of the method used to calculate operating income. Decision No. 68176 determined operating income and set rates in a manner consistent with prior Commission decisions, by multiplying the weighted average cost of capital ("WACC") by the OCRB, and dividing the resulting product by the FVRB[224] in order to determine a FVROR. Under that method, the operating income, determined by multiplying the FVRB times the FVROR, provided the same operating income as multiplying the WACC by the OCRB.

Following the Remand Proceeding ordered by the Arizona Court of Appeals, a hearing was held and Decision No. 70441 (July 28, 2008) was issued. Decision No. 70441 did not adopt the Company's proposal to determine a FVROR by applying the WACC directly to the FVRB, but revised the method used in Decision No. 68176 to calculate operating income. The Commission found that applying the WACC to the FVRB would over-compensate the Company for inflation and calculated the FVROR by adjusting the WACC to reflect an inflation adjustment that reduced the cost of equity.[225] The FVROR was then applied to the FVRB to determine operating income. Decision No. 70441 found that the evidence presented in the Remand Proceeding was not sufficiently developed to make a determination of whether the cost of debt reflects the effects of inflation, and therefore Decision No. 70441 did not adopt an inflation adjustment to the cost of debt.

[224] In Decision No. 70441 and in this case, the FVRB reflects a 50/50 weighting of OCRB and RCND.
[225] Decision No. 70441 at 41.

The Company has appealed Decision No. 70441, and in this proceeding, continues to advocate applying the WACC directly to its FVRB, without any inflation adjustment, in order to calculate the Company's authorized operating income.[226] RUCO advocates using the same methodology in this case as that used in Decision No. 70441 to reach a FVROR, by deducting a general inflation component from the cost of equity in order to avoid double-counting inflation ("Method 1").[227] Staff's FVROR proposal in this case is based on the FVROR formula used in Decision No. 70441, but with a change to the application of the inflation adjustment. Staff's methodology removes the inflation component from both the cost of equity and the cost of debt to determine a FVROR ("Method 2"). Staff states that Method 1 remains a viable alternative for computing the FVROR,[228] but that Method 2 benefits a utility by providing higher returns when utility property appreciates at a rate exceeding the additional return required by investors due to inflation.[229]

The Company argues that application of the unadjusted WACC to FVRB is necessary to allow the utility to earn a fair return on the current value of its property.[230] CCWC charges that the recommendations of Staff and RUCO are predicated on the view that the rate of return must be reduced if the fair value of the utility's plant is used as its rate base, and that their FVROR approaches are "intended to deprive Chaparral City of the benefit of the increase in value of its property."[231] CCWC continues to argue that the WACC can be directly applied to FVRB because the WACC is a function of the ratio of debt in its capital structure, and does not depend on either the amount of invested capital or the size of the rate base used to set rates, and that a market-derived rate of return can appropriately be applied to a market-based rate base.[232] The Company also argues that application of the unadjusted WACC to FVRB is appropriate because the rate of return is not related

[226] Company COC Brief at 27. The Company continues to argue issues previously decided in Decision No. 70441, and some of those issues are discussed herein. The fact that this Decision does not again address some of the arguments re-proffered by the Company in this case, such as, for example, its arguments regarding market-based rate base and market-derived return, does not change our analysis and determination thereon as set forth in Decision No. 70441.
[227] RUCO COC Brief at 10, RUCO COC Reply Brief at 10.
[228] Staff COC Brief at 5.
[229] *Id.*
[230] Company COC Brief at 14.
[231] Company COC Brief at 26, 27.
[232] *Id.* at 20, 22-23.

to rate base, and because the inputs used to develop the WACC have no relationship to the type of rate base to which the WACC is applied.[233] CCWC argues that FVRB is not the "inflated" cost of its plant, but is the average of its OCRB and RCND,[234] and contends that the downward adjustment to the WACC as recommended by RUCO and Staff to determine a FVROR "undermines the use of fair value."[235]

We agree with the Company that there has been no dispute in this case that FVRB is the average of CCWC's OCRB and RCND. We disagree with the Company, however, that the FVROR methodologies proposed by RUCO and Staff "undermine" the use of fair value, or "deprive Chaparral City of the benefit of the increase in value of its property." There are many methods the Commission can use to determine an appropriate FVROR, and as we found in Decision No. 70441, one of those methods is adjusting the WACC to exclude the effect of inflation. RUCO and Staff's recommendations both adjust the WACC to exclude the effect of inflation in order to calculate a FVROR for the Company. CCWC claims that Staff and RUCO have focused on the effect of inflation on the cost of capital, but have ignored its effect on rate base, that neither provided a study or analysis of the impact of inflation on the Company's rate base.[236] CCWC contends that utilizing an inflation adjustment to reach a FVROR incorrectly assumes that general inflation in the economy affects both rate base and the cost of capital in the same way.[237] We disagree. The FVROR analyses provided by RUCO and Staff focused on the inflation component contained in cost of capital. The effect of inflation on rate base is separately calculated in determining the RCND, and the Company's proposed method has been accepted by the Commission.

As we determined after considering all the evidence in the Remand Proceeding in Docket No. W-02113A-04-0616, the FVRB, which was the average of OCRB and RCND, included an inflation component.[238] The FVRB in this case was determined in the same way as the FVRB we considered

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[233] *Id.* at 16, 21.
[234] *Id.* at 3.
[235] *Id.* at 57.
[236] *Id.* at 60-64.
[237] *Id.*
[238] Decision No. 70441 at 41, Findings of Fact No. 14.

in Decision No. 68176 and Decision No. 70441. The record in this proceeding contains essentially the same arguments CCWC made in the Remand Proceeding and affords no basis upon which to reverse our determination of fact on the issue. The Company acknowledges that the RCND is the current value of its plant based on its reconstruction cost, and there is no dispute in this case that FVRB is the average of OCRB and RCND. RUCO and Staff's FVROR recommendations in this case both take into consideration our determination in Decision No. 70441 that the FVRB, which is the average of OCRB and RCND, includes an inflation component. The Company provided no study or other evidence that controverts the existence of an inflation component in RCND rate base. We note that the Company used the Handy-Whitman Index and the Consumer Price Index to trend its OCRB to a RCND value.[239] Both of these indices are measures of inflation. Clearly, the RCND value proposed by the Company includes inflation, and that inflation component carries into the FVRB.

The Company's proposal in this case to determine a rate of return by applying the WACC directly to a FVRB comprised of an average of OCRB and RCND does not include an adjustment to account for inflation. CCWC contends that the fact that application of the WACC to FVRB may produce return dollars greater or less than would be produced using the "prudent investment" approach is irrelevant, because fair value ratemaking is intended to recognize increases (and decreases) in property values.[240] The Company continues its argument from the Remand Proceeding that *Duke Power*[241] supports its position on FVROR, [242] because the *Duke Power* court determined that North Carolina's ratemaking statutes required the North Carolina Utilities Commission to treat the difference between the OCRB and the FVRB as equity.[243] Staff points out that in North Carolina, the state's police power regarding ratemaking resides with the legislature, in contrast to Arizona, where the Arizona Constitution places Arizona's ratemaking authority exclusively with this Commission, and that *Duke Power* involved interpretation of a statute governing the treatment of

[239] Direct Testimony of Thomas J. Bourassa (Exh. A-3) at 7-8; Decision No. 70441 at 31-32.
[240] Company COC Brief at 14.
[241] *State ex rel. Utilities Comm'n v. Duke Power Company*, 206 S.E.2d 269 (N.C. 1974).
[242] Company COC Brief at 25-26.
[243] *State ex rel. Utilities Comm'n v. Duke Power Company*, 206 S.E.2d 269 (N.C. 1974).

FVRB.[244] As noted in Decision No. 70441, the Company's reliance on *Duke Power* is misplaced, because the North Carolina Supreme Court indicated that the North Carolina Commission could consider the effect of inflation in computing the cost of capital, and remanded that case to the North Carolina Commission because the fair rate of return determination had been made "through a misunderstanding" of another decision by the North Carolina Supreme Court.[245] The Company also continues to argue in this case that the Illinois case *City of Alton*[246] supports its position.[247] As Decision No. 70441 states, the methods addressed in that case are not helpful in setting rates in Arizona, as they seem to be after the fact, "fall-out numbers" determinations.[248] CCWC has not presented any legal arguments that convince us to change our determination made in Decision No. 70441.

Staff and RUCO are in agreement that, as Decision No. 68176 and Decision No. 70441 have already found, the Company's proposal to adopt the WACC as the FVROR and apply it to the FVRB would produce excessive returns.[249] RUCO takes issue with the Company's assertion[250] that the WACC is the fair rate of return regardless of the rate base to which it is applied.[251] RUCO argues that an appropriate rate of return is one that compensates, but does not overcompensate, the Company for its costs.[252] RUCO states that Decision No. 70441 determined that the double counting of inflation in rate base and the rate of return would unfairly overcompensate investors,[253] and Staff contends that rates producing an excessive return would be neither just nor reasonable.[254] In response to the Company's assertion that the results of the Remand Proceeding are "anomalous,"[255] Staff responds that this Commission, in the Remand Proceeding resulting in Decision No. 70441, was

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[244] Staff COC Reply Brief at 5-6.
[245] Decision No. 70441 at 24-25.
[246] *City of Alton v. Commerce Comm'n, 165 N.E.2d 513 (Ill. 1960).*
[247] Company COC Brief at 23-26.
[248] Staff COC Reply Brief at 6, citing Decision No. 70441 at 25-26.
[249] Staff COC Reply Brief at 4, RUCO COC Reply Brief at 10.
[250] Company COC Brief at 20-24.
[251] RUCO COC Reply Brief at 9.
[252] *Id.*
[253] RUCO COC Brief at 10, RUCO COC Reply Brief at 10.
[254] Staff COC Reply Brief at 4.
[255] Company COC Brief at 6.

completely within its constitutional authority to craft a FVROR methodology that removed the effects of inflation.[256]

The Company's extensive arguments on brief in this case repeat the arguments made in the Remand Proceeding, and provide no basis for a deviation from our finding in those Decisions that applying WACC to the FVRB would inappropriately allow inflation to be reflected in both the WACC and in the FVRB, thus overstating inflation.[257] The Company is correct that fair value ratemaking recognizes increases or decreases in property values, which in this case is accomplished through the use of a FVRB that includes an RCND component. In addition, fair value ratemaking also recognizes the need for a fair return on the fair value of utility property. The Company's proposal must be rejected, because a rate of return reached by applying the WACC directly to its FVRB which includes inflation would overcompensate for inflation, and would produce an excessive return on FVRB, thereby resulting in rates and charges that would be excessive, and therefore not just and reasonable.

In order to calculate the inflation factor in the WACC, both Staff and RUCO's methods subtracted the yields on Treasury inflation protected securities ("TIPS") from the yields on Treasury securities with constant maturities. Staff used the 2.4 percent difference between the spot yields on a 20-year Treasury and a 20-year TIPS as a proxy for expected inflation.[258] Because one half of the FVRB includes OCRB, which does not include inflation, Staff adjusted the 2.4 percent inflation

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[256] Staff COC Reply Brief at 4.

[257] *See* Decision No. 70441 at 36.

[258] Staff calculated its inflation adjustment as follows:

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|---|---|
| 20-year Treasury Yield (as of 8/6/08) | 4.7% |
| less: 20-year Treasury Real Yield (as of 8/6/08) | 2.3% |
| Return required by investors due to inflation* | 2.4% |
| Times a 50% factor (to account for lack of inflation in OCRB) | 0.5 |
| **Inflation adjustment** | **1.2%** |

* Staff's Final Schedule PMC-2 showed 2.5%, presumably due to rounding, which is corrected here to 2.4%.

Staff Final Schedule PMC-2; Direct Testimony of Staff witness Pedro M. Chaves adopted by Staff witness David C. Parcell (Exh. S-8) at 36-37; Direct Testimony of Staff witness Gordon L. Fox (Exh. S-5) at 4-11.

factor by one-half, resulting in an inflation adjustment to the WACC of 1.2 percent.[259] RUCO used historic average Treasury yields for the period 2001 through the first half of 2008 to reach its inflation estimate and deducted 200 basis points from its unadjusted cost of equity to derive the return that RUCO recommends be applied to the Company's FVRB.[260]

The Company disagrees with RUCO's 200 basis point inflation adjustment.[261] CCWC argues that any inflation adjustment should be reduced by one-half to account for the fact that one-half of the FVRB is comprised of plant valued at its historic cost, and that if an inflation adjustment is found appropriate in this case, the adjustment should not exceed 100 basis points.[262] The Company contends that Staff's methodology is more appropriate than RUCO's, arguing that because RUCO's inflation adjustment is based on historical information, it is not a good proxy for any future inflation contained in investors' expected equity returns.[263] While the Company finds Staff's methodology preferable, it disagrees with Staff's inputs, and argues that Staff should have used 5-year Treasuries instead of 20-year Treasuries, and that Staff failed to update its estimate to take into account current inflationary expectations.[264] At the hearing on January 9, 2009, Staff's witness Mr. Parcell testified that during the current economic climate, economists' opinions of projected inflation would be a much better indicator of expected inflation, and stated that in recent testimony, he had found that the consensus forecast for inflation was 2 to 2.5 percent.[265] Mr. Parcell's testimony corroborates and validates Staff's earlier 2.4 percent estimate, obtained using the Treasury yields as of August 6, 2008.

CCWC disagrees with Staff's Method 2 for calculating the FVROR. CCWC argues that it is improper to apply an inflation adjustment to both the debt and equity portions of the Company's capital structure, and that Method 2 erroneously treats the cost of its long-term debt as if it increases

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[259] *Id.*
[260] RUCO Final Schedule TJC-36; Direct Testimony of RUCO witness William A. Rigsby (Exh. R-14) at 62.
[261] Company COC Reply Brief at 24.
[262] *Id.*
[263] Company COC Brief at 62.
[264] *Id.*
[265] Tr. at 748-749. Mr. Parcell's testimony was in response to a Federal Reserve Statistical Release ("FRSR") dated January 7, 2009, which the Company introduced at the hearing (Exh. A-17). Mr. Parcell testified that in normal times, looking at the differential between long-term Treasury bonds and long-term interest rate swaps using the same maturity may be a reasonable way to develop a proxy for inflation, but that in the current economic environment using the differential is problematic because both instruments have been driven to such low levels.

or decreases based on current market conditions.[266] CCWC argues that because its cost of debt is determined based not on current market debt costs, but on its pre-existing, embedded cost of debt, which does not increase or decrease in response to future inflation or other economic conditions, Method 2 should be rejected.[267] CCWC is correct that its cost of debt is determined based not on current market debt costs, but on its pre-existing, embedded cost of debt, which does not increase or decrease in response to future inflation or other economic conditions. However, as CCWC itself acknowledges, inflation is a component of the cost of debt. The Company states in a footnote that "[i]n some cases, there may be a secondary market for bonds, notes and other debt instruments. The price that a purchaser is willing to pay for a particular debt instrument is affected by a number of different factors, including expected inflation."[268] The Company's footnote goes on to state that despite the existence of secondary markets, "the borrower's obligation to pay interest in accordance with the terms of the debt instrument is unaffected by such secondary sales and remains fixed."[269] While this is true, it does not change the fact that debt includes an inflation component. The cost of debt includes the investors' expectations regarding inflation, and, as Staff explains, a change in purchase price of debt instruments on the secondary market reflects the change in debt cost that the investor requires due to inflation.[270] While the Company is correct that the inflation component embedded in its existing debt does not change unless it is refinanced, the inflation component is nonetheless there, and the Company failed to provide an estimate of that inflation component embedded its existing debt. Accordingly, the best evidence available on the record is Staff's. Staff's proposed Method 2 applies the inflationary adjustment to the entire cost of capital, including equity and debt, in recognition of the fact, demonstrated in the record in this case,[271] that inflation is a component of debt as well as equity.

The Company contends that RUCO's proposed rate of return of 6.38 percent is too low and attempts to support its position by comparing it to the 9 percent interest rate on investment grade

[266] Company COC Brief at 67, 69.
[267] *Id.*
[268] Company COC Brief at 68, fn 279.
[269] *Id.*
[270] Staff COC Reply Brief at 8.
[271] *See, e.g.*, Direct Testimony of Staff witness Gordon L. Fox (Exh. S-5) at 5-7.

(Baa) bonds.[272] RUCO argues in response that the Company's reliance on a FRSR showing the interest rate on investment grade bonds at 9 percent is misplaced because the FRSR does not distinguish the rates of return for utilities bonds from other corporate bonds.[273] RUCO believes that the Company's rate of return comparison should be based on the returns of regulated utilities as opposed to the returns of other corporations, and recommends that the Commission consider, instead of the January 7, 2009, FRSR,[274] the January 9, 2009 Value Line Investment Survey,[275] which contains statistical analysis of corporate bond yields, but distinguishes yields on utility bonds from yields on other corporate bonds, and shows the return on corporate utility bonds for 25-30 year grade Baa/BBB to be 6.58 percent.[276] Our FVROR determination in this proceeding is not based on any comparable earnings analysis, but on the market-based analyses performed by the parties. However, we note that the Company's argument that a 6.38 percent FVROR is too low because the interest rate on investment grade (Baa) bonds is 9 percent is not convincing, and that RUCO is correct that if such a comparison were to be made, it would be more appropriate to compare the recommended rates of return to yields on utility bonds rather than on the FRSR produced by the Company at the hearing.

The Company again asserts that if adjustments are made to components of the WACC to account for inflation, inflation must also be considered in relation to operating expenses,[277] and contends that the normalization of test year operating expenses using expense levels from 2004 and 2005 as recommended by RUCO and Staff ignores inflationary effects.[278] The Company argues that considering the impact of inflation only on the cost of capital ignores the impact of inflation on the Company's overall earnings, and argues that adjusting cost of equity estimates to account for inflation in determining the rate of return while ignoring the impact of inflation on the Company's overall cost of providing service amounts to "piecemeal regulation."[279] The Company contends that if an inflation adjustment is used to determine its rate of return, an upward adjustment using the same

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[272] *See* Exh. A-17, FRSR dated January 7, 2009.
[273] RUCO COC Brief at 10.
[274] Exh. A-17.
[275] Exh. R-16.
[276] RUCO COC Brief at 10.
[277] Company COC Brief at 3-4.
[278] *Id.*
[279] *Id.*

percentage should be made to its test year operating expenses, in order to account for the impact of inflation during 2007 and 2008, and during the time rates will be in effect.[280] The "matching" adjustment to operating expenses proposed by the Company is unsupported by the evidence and inappropriate. We disagree with the Company's assertion that adjusting the WACC to arrive at a FVROR "ignores the impact of inflation on the Company's overall earnings," or amounts to "piecemeal regulation." As Staff explains, an adjustment to the WACC to arrive at the FVROR is not an adjustment to reflect matching, but is necessary to avoid double counting of inflation that is found in the RCND rate base and in the cost of capital.[281] As we noted in Decision No. 70441, removing inflation from the return no more amounts to "piecemeal regulation" than does adding inflation to the rate base.[282] In contrast to FVROR, which is forward-looking, operating expenses are matched with associated revenues.[283] Inflation in operating expenses is already inherently recognized in the ratemaking framework, which encourages utilities to seek operating efficiencies[284] and allows modifications to test year expenses based on known and measurable changes in costs during the test year. There is no basis in the record to support the Company's proposed inflationary adjustment to operating expenses.

The rate of return applied to a utility's FVRB is designed to (1) allow the utility to attract capital on reasonable terms; (2) maintain the utility's financial integrity; and (3) permit the utility to realize a return that is commensurate with the returns earned by enterprises with commensurate risks. CCWC states that in setting its rate of return, this Commission must take into account the risks associated with the particular rate-setting methodologies used in Arizona and their impact on the Company's ability to earn a reasonable return on the fair value of its utility plant used to provide service.[285] CCWC contends that a lack of adjustment mechanisms and inability to obtain rate relief outside a general rate case create additional business risk and requires a "higher return on equity,"[286]

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[280] *Id.*
[281] Staff COC Brief at 4, citing Tr. at 461.
[282] Decision No. 70441 at 32.
[283] Tr. at 461.
[284] Tr. at 461.
[285] *Id.*
[286] *Id.* at 19.

and that the regulatory lag related to Arizona's use of a historic test year impacts the Company's ability to earn a reasonable return.[287] The Company states that operating expenses reflected in its current rates are based on the 12-month period ended December 31, 2003, and that it is not currently earning a return on the increased value of its plant since its rates were set in Decision No. 68176, or on plant constructed and placed in service since December 31, 2003.[288] The Company complains that when rates are set in this case, they will be based on operating expenses for the year ended December 31, 2006, and will not provide the Company with a return on plant constructed and placed in service after December 31, 2006.[289] The Company's argument ignores the fact that in this case, we are allowing $1.28 million in post-test year plant to be included in rate base. The issues the Company raises here related to the regulatory lag and Arizona's constitutional constraints affecting the ratemaking process are issues that apply to all Arizona utilities, and not just CCWC. As RUCO acknowledges, the fundamental premise of the return on rate base ratemaking approach is to allow utilities an opportunity to recover their actual costs, including their actual cost of capital, consistent with competitive industries.[290] Applying the WACC directly to a utility's FVRB when the WACC includes an inflation component would not accomplish this ratemaking goal. As Staff contends, the Company is advocating for a rate of return methodology which would produce comparably higher rates, which conflicts with the most basic tenet of rate regulation, which is that a utility should be provided with rates that will allow it an opportunity to earn a return that is comparable to those of similarly situated enterprises.[291] We addressed these arguments in Decision No. 70441, and nothing presented in this case causes us to change our determination therein.

In determining an appropriate and equitable level for the FVROR in this case, we are mindful of the need for the Company to have the ability to attract capital and obtain a fair return, and we are also mindful of the need to take into account the interests of the ratepayers. As we found in Decision No. 68176 and Decision No. 70441, using the Company's proposed methodology would produce

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[287] *Id.* at 19-20.
[288] *Id.* at 65.
[289] *Id.*
[290] RUCO COC Reply Brief at 9.
[291] Staff COC Reply Brief at 5, citing *Federal Power Comm'n v. Hope Natural Gas*, 320 U.S. 591, 64 S.Ct. 281 (1944).

excessive returns, and it must therefore be rejected. Because there is an inflation component in the Company's FVRB, all inflation must be removed from the rate of return, whether in debt or equity. While further refinements to methodologies to accomplish this necessity may be possible, and are encouraged, we find that Staff's Method 2 appropriately matches an inflation-free rate of return to FVRB. The Method 2 recommendation of Staff to apply an inflation adjustment to both the equity and debt components of the WACC is a reasoned and sound approach to determining a FVROR that equitably balances the needs of the Company and its ratepayers, and results in the setting of just and reasonable rates. We therefore adopt a FVROR of 7.52 percent in this case.

### E. Fair Value Rate of Return Summary

| | |
|---|---|
| Weighted Average Cost of Capital | 8.72% |
| Inflation Adjustment | -1.20% |
| Fair Value Rate of Return | 7.52% |

## VII. AUTHORIZED INCREASE

Based on our findings herein, we determine that the Company's gross revenue should increase by $1,764,371.

| | |
|---|---|
| Fair Value Rate Base | $26,776,414 |
| Adjusted Operating Income | 943,185 |
| Required Fair Value Rate of Return | 7.52% |
| Required Operating Income | $2,013,586 |
| Operating Income Deficiency | $1,070,401 |
| Gross Revenue Conversion Factor | 1.6483 |
| Gross Revenue Increase | $1,764,371 |

## VIII. RATE DESIGN

### A. Irrigation and Construction Rates

The Company is proposing the same rate design approved in Decision No. 68176, with the exception of increasing the commodity rate for Irrigation and Construction water. Zero gallons are included in the monthly minimum charge, and the commodity rate has three inverted tier blocks, with the first breakover point at 3,000 gallons, and the second breakover point at 9,000 gallons. In order to eliminate the disparity in the current rate design between Irrigation and Construction water customers and other customers, and to promote water conservation,[292] the Company proposes to

[292] Company Brief at 25.

charge Irrigation and Construction water customers the same monthly minimum charges as other customers according to meter size, with a single Irrigation and Construction commodity rate equal to the first tier commodity charge for commercial and industrial customers, for all usage. Staff proposes a rate design similar to the Company's for Irrigation and Construction water.[293] Currently, the Irrigation Service commodity charge is a flat $1.56 per 1,000 gallons, which is lower than the first tier commodity rate for 3/4-inch metered residential customers. The Company believes that from a water conservation standpoint, customers using potable water for irrigating turf and landscaping should be charged more.[294] Under the rates proposed by the Company, RUCO, and Staff in their final schedules, the commodity charge would increase to $3.34, $2.65, and $2.95, respectively, with the differences being due to differing recommended revenue requirements. Staff states that the purpose of its proposal is to move the rates for Irrigation and Construction water closer to the commodity rates paid by other customers, and that it believes the approach will help in promoting water conservation.[295]

Pacific Life argues that the Company's proposed increase for Irrigation and Construction water customers was not properly noticed.[296] Staff states that CCWC published notice in compliance with the rate case procedural order issued in this case, and that Pacific Life filed for intervention on September 15, 2008, which was granted on September 26, 2008. Staff notes that Pacific Life did not raise any issues regarding notice once it was granted intervenor status, or during the time leading up to the date for filing direct testimony.[297] As Staff notes, Pacific Life did not file direct testimony or actively participate during the evidentiary hearings.[298] The Company points out that, as Pacific Life discusses in its brief, a discussion of the increases in specific rates for specific customer classes was set forth in the Company's filing in the direct testimony of its accounting witness,[299] and that the direct testimony of the Company's witness Mr. Hanford also addressed the Company's requested change in the irrigation rate. Those direct testimonies were filed with the Company's application,

[293] Staff Final Schedule MEM-27.
[294] Company Brief at 25.
[295] Staff Brief at 12-13; Staff Reply Brief at 6.
[296] Pacific Life Brief at 1-4.
[297] Staff Reply Brief at 9-10.
[298] *Id.* at 10.
[299] Company Reply Brief at 19.

and the published notice directed interested parties how to view a copy of the application. The notice, which was published on August 6 and August 13, 2008, also specifically stated that "[t]he actual percentage rate increase for individual customers would vary depending on the type and quantity of service provided. You may contact Chaparral City to determine what the effect of its rate proposal may be on your individual bill." The record in this proceeding reflects the fact that while Pacific Life may have chosen not to take advantage of its procedural opportunities to present a case and cross examine witnesses in this proceeding, the opportunity was available to it, and Pacific Life was not procedurally disadvantaged.

Pacific Life argues that the Company's proposed increase for Irrigation and Construction water customers could be detrimental to golf course and residential users.[300] The Company contends that this claim by Pacific Life on brief is unsupported by any evidence on record in this case, and that the two possible explanations for the lack of evidence are (1) the evidence does not exist; or (2) Pacific Life failed to avail itself of the opportunity to present evidence.[301] Staff states that it is concerned about the effect a rate increase will have on all customers, including irrigation customers, and that in making its recommendations, Staff must balance the interests of the Company and the interests of all customers.[302] Staff notes that currently, irrigation customers have the lowest commodity charge, that the disparity between the commodity rates of the classes should be minimized to encourage water conservation, and that Staff believes its approach is fair and balances the interests of the Company and its customers.[303]

Pacific Life argues that a similar proposed increase for Irrigation and Construction water customers was rejected in the Company's last rate case.[304] Staff states that each case that comes before the Commission requires independent analysis and a determination based on the facts of the specific case, and therefore the fact that the Commission considered and rejected a similar increase to irrigation customers in a prior case is not binding on a determination in this case.[305] The Company

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[300] Pacific Life Brief at 4-6.
[301] Company Reply Brief at 20.
[302] Staff Reply Brief at 11.
[303] *Id.*
[304] Pacific Life Brief at 6.
[305] *Id.*

also argues that Decision No. 68176 is not dispositive on the issue, and that Pacific Life offers no reason that the Company could not again raise the issue in this rate case for Commission consideration based on fair treatment of all its customers and to promote conservation.[306]

Pacific Life argues that without a cost-of-service study, there is no evidentiary basis to increase rates for one class of customers more than for another customer class.[307] The Company disagrees, stating that it is not requesting a change to its rate design in this case, but is seeking to address what appeared to be an anomaly in its rate design, given the Commission's decision to adopt Staff's proposed inverted tier rate design in the last rate case for the purpose of promoting conservation.[308] The Company contends that Pacific Life's assertions concerning the need for a cost of service study are unsupported and irrelevant, because the Company's current rate design is not based on a cost of service study. Staff contends that because the Company's proposed rate design is not different than the one approved in its last rate case, a cost of service study is not required.[309]

Pacific Life argues that the Company admits that test year revenues reflect that irrigation customers have already been successful in conserving water, and that "[t]here is no evidence that further conservation is needed, or even wise."[310] The Company states that it is proposing to raise the rate structure for Irrigation and Construction water because the current rate design is inconsistent with and contrary to the premise of the inverted tier rate design adopted in Decision No. 68176 to promote water conservation.[311] The Company believes the Commission should consider whether it is appropriate to impose inverted tier rates on residential and commercial customers, while allowing Irrigation and Construction water customers to purchase potable water for landscape irrigation at a rate that is substantially below the first tier commodity rate applicable to other customers.[312]

We agree with the Company that the current rates for potable irrigation water are inconsistent with and contrary to the premise of the inverted tier rate design adopted in Decision No. 68176 to promote water conservation. The disparity between the commodity rate for Irrigation and

[306] Company Reply Brief at 21.
[307] Pacific Life Reply Brief at 1-3.
[308] *Id.*
[309] *Id.*
[310] Pacific Life Brief at 6-8; Pacific Life Reply Brief at 2.
[311] Company Reply Brief at 22.
[312] *Id.*

Construction water customers and other customers needs to be addressed, and the rate designs proposed by the parties fairly address the issue. While we are cognizant of the fact that bringing the Irrigation and Construction commodity rates closer to those for other customers will affect golf courses and other customers who purchase potable water for turf and landscape purposes and construction, we find that a correction to the rate design approved in Decision No. 68176 is in order. We will adopt the parties' proposals to charge Irrigation and Construction water customers the monthly minimum charges by meter size and a flat commodity rate equal to the first tier commodity rate for other commercial and industrial customers.

**B. Low Income Tariff**

Staff states that the Commission has approved low income tariffs for a number of utilities, and with the recent downturn in our economy, there is an even greater need for these types of tariffs.[313] The Company has proposed a low income tariff to provide an opportunity for those customers that need assistance to lower their cost of water utility service. The Company proposes that customers meeting the necessary qualifications would receive a 15 percent discount off their water bill.[314] The primary criteria would be based on the combined gross annual income of all persons living in the household. For example, a 4-person household with a total gross annual income of less than or equal to $31,800 would meet the criteria.[315] Customers would sign up for the program by completing an application and eligibility declaration and submitting proof of income to the Company.[316] The income guidelines are based on 150 percent of the 2008 federal poverty guidelines.[317] The Company would update its gross annual household income limits annually.[318]

The program costs (the discounts given to participants plus a 10 percent fee for administration and carrying costs) would be recovered from non-participants via a commodity surcharge.[319] The Company would maintain a balancing account to keep track of the program costs and the collections made from non-participants, and the commodity surcharge to non-participants would begin one year

[313] Staff Reply Br. at 13.
[314] Supplemental Rebuttal Testimony of Company witness Thomas J. Bourassa (Exh. A-6) at 2.
[315] *Id.*
[316] *Id.*
[317] *Id.*
[318] *Id.* at 3.
[319] *Id.*

after the program begins.[320] CCWC will track the program costs for 12 months, and upon completion of the 12 month period, the Company will compute a surcharge intended to collect the prior year's program costs over the next 12 months.[321] CCWC would submit an annual report to the Commission showing the number of participants for the year, the discounts given to participants, administration fee and carrying costs, and the collection made from non-participants through the surcharge.[322] Based on the existing bill for median usage on a 3/4-inch meter currently at $24.94, the low income program would result in a reduction of $3.74.[323] The surcharge impact for non-participants, based on the 2006 gallons sold, would be about 4 cents on the average 3/4-inch customer bill.[324]

Staff recommends that the Company's low income tariff proposal be adopted.[325] Staff's recommendation is reasonable and will be adopted. We will direct the Company to file, along with the tariff of rates and charges approved herein, a copy of the Low Income Tariff it provided with its brief and reproduced and attached hereto as Exhibit A, and to implement the Low Income Tariff as described in the Supplemental Rebuttal Testimony of Company witness Thomas J. Bourassa (Exh. A-6).

### C. Delay Surcharge Request

The Company proposes on brief that a "surcharge for delay" should be imposed on its customers to allow it to recover revenue increases it did not recover during the six-month stay of proceedings in this case granted at Staff's request pending the outcome of the Remand Proceeding.[326] The Company requests that the surcharge include "appropriate carrying costs."[327] The Company contends that it should be compensated both for that delay and for the additional delay caused by Staff's decision to bring in an outside consultant three days prior to the hearing, and the subsequent bifurcation of the hearing to hear cost of capital issues separately from the other issues.[328]

Staff responds that while there were delays in this case, CCWC has not demonstrated, other

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[320] *Id.*
[321] *Id.*
[322] *Id.* at 4.
[323] *Id.* at 5.
[324] *Id.* at 6.
[325] Staff Brief at 14.
[326] Company Brief at 26-27.
[327] *Id.*
[328] *Id*

than by the assertions made on brief, any harm that should be ameliorated.[329] Staff contends that delays can be common in rate cases where the issues are complex, and that the Company's ratepayers should not bear the burden of the delays.[330] Staff argues that the surcharge proposed by the Company is not supported by the record and it should therefore be rejected.[331]

After the parties made their arguments on the appropriateness of Staff's requested suspension of the Commission's Time Clock Rule[332] in this matter, a Procedural Order was issued in this case on January 22, 2008. The January 22, 2008, Procedural Order outlined the parties' positions and the consideration of the issue, and ultimately found that the timing of this rate case, in conjunction with the uncommon nature, and the timing, of the Remand Proceeding that was pending at the time, constituted an extraordinary circumstance, pursuant to A.A.C. R14-2-103(B)(11)(e)(ii), requiring suspension of the Timeclock Rule. The January 22, 2008, Procedural Order called for the hearing to continue in this proceeding as soon as practicable following the Commission's final order in the Remand Proceeding, and directed the parties to continue to conduct discovery and case preparation to the greatest extent possible during the duration of the continuance in order to minimize any delay in implementation of new rates pursuant to this application.

We agree with Staff that the Company has not demonstrated the "injury due to this delay" it alleges on brief. Neither has the Company quantified the extent of the alleged injury. The delay was necessary to resolve the issues in the Remand Proceeding, which directly affects this case. We agree with Staff that under the circumstances of this case, the Company's ratepayers should not be asked to bear any additional burden due to the extraordinary circumstances that led to the suspension of the Timeclock Rule in this proceeding, and will deny the Company's request.

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Having considered the entire record herein and being fully advised in the premises, the Commission finds, concludes, and orders that:

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[329] Staff Reply Brief at 6.
[330] *Id.*
[331] *Id.*
[332] A.A.C. R14-2-103(B)(11).

## FINDINGS OF FACT

1. On September 26, 2007, CCWC filed a rate increase application with the Commission based on a test year ended December 31, 2006.

2. On October 26, 2007, the Staff filed a letter finding the application sufficient and classifying CCWC as a Class A utility.

3. By Procedural Order issued November 30, 2007, a hearing was set on the application to commence on July 8, 2008, associated procedural deadlines were set, and intervention was granted to RUCO.

4. On December 7, 2007, the Company filed a Request to Modify Procedural Schedule in which the Company requested a continuation of the hearing due to a conflict on the part of counsel.

5. A telephonic procedural conference was held on December 13, 2007, for discussion of the need for an extension of the deadline for a Commission Decision in this matter pursuant to A.A.C. R14-3-103(B)(11) (the Commission's "Time Clock Rule") in conjunction with the Company's requested schedule modification.

6. An Amended Rate Case Procedural Order was issued on December 19, 2007, continuing the hearing on this matter from July 8, 2008, to July 21, 2008, and continuing associated procedural deadlines.

7. On January 3, 2008, Staff filed a Motion to Suspend Time Clock.

8. On January 8, 2008, CCWC filed its Response in Opposition to the Motion to Suspend Time Clock.

9. On January 10, 2008, RUCO filed its Response to the Utilities Division's Motion to Suspend Time Clock.

10. On January 14, 2008, Staff filed its Reply to Company's Response to Staff's Motion to Suspend Time Clock.

11. On January 22, 2008, a Procedural Order was issued granting Staff's Motion to Suspend Timeclock. The Procedural Order continued the hearing pursuant to the Time Clock Rule, and ordered that the hearing would be reset to continue as soon as practicable following the Commission's final order in Docket No. W-02113A-04-0616, the remand of Decision No. 68176

(September 30, 2005), a pending matter in which the rates of CCWC were also being considered. The Procedural Order directed all parties to continue to conduct discovery and case preparation to the greatest extent possible during the duration of the continuance, in order to minimize any delay in implementation of new rates pursuant to the application.

12. On January 24, 2008, the Company filed a Motion for Reconsideration by the Commission of Procedural Order Staying Rate Application.

13. On January 28, 2008, Staff filed Staff's Response to Chaparral City Water Company's Motion for Reconsideration.

14. On June 30, 2008, a Recommended Opinion and Order for Commission consideration was filed in Docket No. W-02113A-04-0616.

15. On July 7, 2008, the Company filed a Notice of Implementation of Interim Rates Pursuant to A.R.S. § 40-256.

16. On July 8, 2008, RUCO filed its Opposition to the Company's Implementation of Interim Rates and Motion to Prohibit the Company from Implementing Interim Rates.

17. On July 11, 2008, the Company filed a Notice of Postponement of Implementation of Interim Rates Pursuant to A.R.S. § 40-256.

18. On July 16, 2008, Staff filed Staff's Response to the Company's Notice of Implementation of Interim Rates Pursuant to A.R.S. § 40-256 and Notice of Postponement. Therein, Staff stated that it would oppose an attempt by the Company to notice and implement a rate increase without an order by the Commission. Staff included legal arguments in support of its position, and requested that a procedural conference be scheduled to address the issues raised by the Company's notices regarding interim rates.

19. On July 17, 2008, at an Open Meeting of the Commission, the Commission voted to adopt, as amended, the Recommended Opinion and Order filed in Docket No. W-02113A-04-0616 on June 30, 2008. The Commission subsequently issued Decision No. 70441 (July 28, 2008) in that docket.

20. On July 18, 2008, a procedural order was issued setting a procedural conference for the purpose of allowing the parties to discuss an appropriate procedural schedule, including the

resetting of a hearing date so that the case could proceed as quickly as possible, and to discuss the Company's filings regarding the implementation of interim rates.

21. On July 21, 2008, the Procedural Conference was convened as scheduled. Counsel for the Company, RUCO and Staff appeared and discussed procedural deadlines for the filing of Staff and intervenor direct testimony and also briefly discussed their positions regarding the Company's filings regarding implementation of interim rates. Counsel for RUCO withdrew its Motion to Prohibit the Company from Implementing Interim Rates.

22. On July 24, 2008, a Second Amended Rate Case Procedural Order was issued, continuing the hearing date to commence on December 8, 2008.

23. On September 4, 2008, the Company filed its Certification of Publication and Proof of Mailing, indicating that it provided notice of the hearing as required.

24. On September 8, 2008, the Company submitted a Notice of Filing requesting, as authorized in Decision No. 70441, recovery of the Company's rate case expense in connection with the appeal and remand of Decision No. 68176.

25. Also on September 8, 2008, the Company filed a Motion for Approval of Interim Rates (Expedited Action Requested).

26. On September 12, 2008, the Company filed a Request for Procedural Conference.

27. On September 23, 2008, Staff filed its Response to the Company's Motion for Approval of Interim Rates.

28. On September 23, 2008, RUCO filed its Opposition to the Company's Motion for Interim Rates.

29. On September 26, 2008, by procedural order, Pacific Life's September 15, 2008, Motion to Intervene was granted.

30. On September 30, 2008, the Company filed its Reply in Support of Motion for Approval of Interim Rates (Expedited Action Requested).

31. On September 30, 2008, a Procedural Order Extending Filing Deadlines was issued, granting Staff's request to extend the deadline for Staff and intervenor direct testimony to October 3, 2008, and extending the deadline for intervenor surrebuttal testimony to November 20, 2008.

32. RUCO and Staff filed direct testimony on September 30, 2008, and October 3, 2008, respectively.

33. On October 2, 2008, the Company filed its Second Request for Procedural Conference.

34. On October 7, 2008, a procedural order was issued setting a procedural conference for October 20, 2008, for the purpose of allowing the parties to discuss the Company's Motion for Approval of Interim Rates.

35. A procedural conference was held as scheduled. The Company, RUCO and Staff appeared through counsel. At the procedural conference, the Company stated that it wished to proceed with the rate application in lieu of the alternative option of suspending the rate proceeding in favor of proceeding to hearing on the Motion for Approval of Interim Rates.

36. On October 24, 2008, Staff filed a Notice of Filing of Meeting on Settlement, and on October 28, 2008, Staff filed a Corrected Notice of Filing of Meeting on Settlement.

37. On October 31, 2008, the Company filed its rebuttal testimony, and filed supplemental rebuttal testimony on November 19, 2008.

38. On November 12, 2008, Pacific Life filed a Notice of Appearance of Counsel, indicating a change of counsel.

39. On November 20, 2008, RUCO filed surrebuttal testimony. An Errata thereto was filed on November 25, 2008.

40. On November 20, 2008, Staff filed surrebuttal testimony of two witnesses.

41. On November 21, 2008, Staff filed a Notice of Witness Substitution and Request for Procedural Order. Staff requested that it be allowed to file substitute witness Mr. Parcell's surrebuttal testimony on cost of capital on December 3, 2008, and requested a date certain of December 15, 2008, for Mr. Parcell's live testimony.

42. On November 24, 2008, the Company filed its Response objecting to Staff's November 21, 2008 filing.

43. On November 24, 2008, the Town of Fountain Hills filed a public comment letter requesting that the Commission not approve the Company's requested rate increase.

44. On November 26, 2008, Staff filed a Reply to the Company.

45. On December 2, 2008, a Procedural Order was issued granting Staff's request to file the surrebuttal testimony of its substitute witness on December 3, 2008, and indicating that the dates certain requested by Staff for presentation of its expert witness were not available for hearing, but that a suitable schedule for proceeding with the parties' presentation of their cases on cost of capital would be discussed at the prehearing conference scheduled for December 5, 2008.

46. On December 3, 2008, Staff filed a Notice of Filing Surrebuttal Testimony of David C. Parcell.

47. On December 4, 2008, the Company filed rejoinder testimony. An Errata thereto was filed on December 5, 2008.

48. On December 5, 2008, the prehearing conference was held as scheduled. The Company, RUCO and Staff appeared through counsel. Pacific Life did not enter an appearance. The Company stated an objection to Staff's substitute witness Parcell's prefiled surrebuttal testimony, and after discussion, Staff agreed to make a filing regarding Mr. Parcell's adoption of Staff witness Chaves' testimony.

49. 241 written public comments were filed in opposition to the Company's requested rate increase between August 20, 2008, and March 9, 2009.

50. On December 8, 2008, the hearing convened as scheduled. Prior to the presentation of evidence, members of the public provided comments for the record. Commenters included Fountain Hills Mayor Jay T. Schlum, Stephen Dausch, Marianne Wiggishoff, Richard V. Kloster, Richard Baurle, Leona Johnston, Jerry Butler, Beth Mulcahy, and Ken Watkins. Commenters indicated a concern that the proposed rate increase would affect homeowners in the Company's service area not only by increasing individual homeowners' water bills, but also by increasing community associations' water utility costs.[333] Commenter Ken Watkins stated that he believes the Company's rate proposal has an unfair effect on the Company's golf course customers.[334]

51. The Company, RUCO and Staff appeared at the hearing through counsel. Pacific Life

[333] Tr. at 6-23.
[334] Tr. at 19-23.

did not appear. The Company, RUCO and Staff presented evidence and cross-examined witnesses on all issues with the exception of cost of capital and rate of return. The hearing was recessed on December 10, 2008, and was scheduled to reconvene on January 8 and 9, 2009, for the purpose of taking evidence on the bifurcated issues of cost of capital and rate of return.

52. On December 9, 2008, Staff filed the portions of Pedro M. Chaves' direct testimony adopted by David C. Parcell, and an Errata thereto was filed on December 15, 2008.

53. On December 11, 2008, Pacific Life filed a Motion for Leave to Present Testimony, requesting leave to present testimony on the issue of the impact of the Company's proposed increase in irrigation rates.

54 On December 16, 2008, the Company filed a Response to Pacific Life's Motion. The Company opposed granting Pacific Life's request. The Company stated that the Motion was filed substantially beyond the deadlines set for prefiled intervenor testimony, after the prehearing conference, and following the completion of the hearing on all issues with the exception of the bifurcated cost of capital and rate of return issues. The Company argued that Pacific Life had not provided a legitimate basis for its request to file testimony at the late date, following the completion of the parties' rate design witnesses' testimony. The Company further argued that the hearing had already been delayed, and that allowing the requested untimely filing of rate design testimony would prejudice the Company.

55. On December 17, 2008, RUCO filed its Response to the Motion. Therein, RUCO requested that the current witness schedule not be disrupted, and stated that if Pacific Life's testimony was allowed, RUCO reserved the right to present rebuttal testimony.

56. On December 17, 2008, Staff filed its Response to the Motion. Therein, Staff stated that it was not opposed to the filing of testimony by Pacific Life's proposed witness, but that it would reserve the right to recall its witness on rate design. Staff filed an Errata to its Response on December 18, 2008.

57. On December 17, 2008, Pacific Life filed a Reply to the Company's Response to the Motion. Pacific Life contended that presentation of the testimony of its witness would not delay this case, because it was not asking to reopen the record, but wished to take advantage of an additional

hearing day that had already been scheduled.

58. On December 23, 2008, the Company filed supplemental rejoinder testimony on cost of capital. An Errata thereto was filed on December 30, 2008.

59. On December 24, 2009, a Procedural Order was issued denying Pacific Life's Motion, finding that granting the Motion would require reopening the completed first segment of the bifurcated hearing, resulting in a time delay and prejudice to the parties, and that Pacific Life had failed to avail itself of numerous opportunities to either conform to the same procedural schedule as the other parties to this case, or to request accommodation in a timely manner.

60. On January 5, 2009, Staff filed a Notice of Filing Regarding Investigation. The Notice stated that the CPUC had contacted Staff regarding a CPUC investigation of Golden States, an affiliate of CCWC. The CPUC had alerted Staff that in the course of a CPUC investigation into Golden States, the CPUC had discovered information relating to CCWC that it thought would be of interest to Staff. The Notice stated that Staff was working with the CPUC on a confidentiality agreement that would allow Staff to obtain information from the CPUC regarding the investigation.

61. On January 6, 2009, Staff filed a Notice of Filing to which was attached a copy of a November 15, 2007, complaint filed in Los Angeles Superior Court against Golden States Water Company, American States Water Company, et al.

62. On January 6, 2009, Staff filed proposed accounting order language for the treatment of the deferred Municipal and Industrial charges related to the Company's 2997 CAP allocation purchase.

63. On January 8, 2009, the hearing reconvened. The Company, RUCO and Staff appeared, presented evidence, and cross-examined witnesses. The hearing concluded on January 9, 2009.

64. On January 13, 2009, RUCO filed a response to Staff's Proposed Accounting Order.

65. On January 16, 2009, the Company filed its Final Schedules. On February 13, 2009, the Company filed a Notice of Errata that included corrected Final Schedules reflecting its final position in this case regarding rate case expense.

66. On January 16, 2009, RUCO filed its Final Schedules.

67. On January 16, 2009, RUCO filed a Notice of Errata with corrections to Hearing Exhibits R-17 and R-18.

68. On January 21, 2009, Staff filed its Final Schedules.

69. On January 21, 2009, the Company filed its Response to Staff's Proposed Accounting Order.

70. On January 21, 2009, the Company, Pacific Life, RUCO, and Staff filed a Stipulation to Extend Briefing Schedule.

71. On January 28, 2009, the Company, Pacific Life, RUCO, and Staff filed initial closing briefs on all issues with the exception of cost of capital and rate of return.

72. On January 29, 2009, Staff filed a Notice of Filing. The Notice stated that on January 12, 2009, the Company had provided responses to Staff's data requests related to the CPUC investigation of Golden States, and that based on the responses, Staff concluded that additional discovery was necessary, and that Staff would continue to provide updates on the issue in this docket.

73. On February 10, 2009, Staff filed a Motion to Compel requesting that the Commission order the Company to promptly provide information requested by Staff related to the CPUC investigation of Golden States.

74. On February 13, 2009, the Company, Pacific Life, RUCO, and Staff filed reply briefs on all issues with the exception of cost of capital and rate of return.

75. On February 13, 2009, the Company, RUCO, and Staff filed closing briefs on cost of capital and rate of return.

76. On February 18, 2009, Staff docketed an update to its February 10, 2009, Motion to Compel. Staff indicated that Staff and the Company had agreed to extend the time period in which the Company has to respond, pending the outcome of ongoing negotiations to resolve the Motion to Compel.

77. On February 27, 2009, the Company, RUCO and Staff filed reply briefs on cost of capital and rate of return.

78. On March 4, 2009, the Company filed a Notice of Filing Late-Filed Exhibit. The exhibit attached thereto is a rate case expense itemization spreadsheet showing a total for January

2007 - December 2008.

79. On June 3, 2009, a procedural order was issued directing Staff to file an update on its Motion to Compel and the progress made in its discovery related to the CPUC investigation of Chaparral City Water Company's parent, Golden States Water Company. The procedural order directed Staff to include in the update a recommendation regarding an appropriate procedural means of addressing the CPUC investigation issue, including whether it should be addressed in this docket. The procedural order also directed the Company, Pacific Life, and RUCO to file responses to Staff's update.

80. On June 11, 2009, Staff filed a Request for Extension of Time. Therein, Staff stated that all three of the attorneys assigned to this case had time constraint conflicts with appellate matters and settlement negotiations in other cases to which they are assigned that prevent them from meeting the June 12, 2009 deadline.

81. On June 12, 2009, the Company filed a Response in Opposition to Staff's Motion for Extension of Time. The Company objected to Staff's request for a one-week extension of time because, according to the Company, the update is not needed. The Company argued that the Motion to Compel is moot because the Company provided all the documents Staff requested by mid-March, 2009. The Company stated that it had offered to stipulate to either (1) keep this docket open, pending conclusion of Staff's review of the CPUC investigation documents and a determination of whether any further proceedings or relief are warranted, or (2) to open a new docket for the same purpose, but that Staff had not definitively responded to the stipulation offer.

82. On June 17, 2009, RUCO filed a Response to Staff's Request for Extension of Time, indicating support for Staff's request.

83. On June 17, 2009, a procedural order was issued granting a one week time extension for Staff's update.

84. On June 19, 2009, Staff filed its Update and Reply to Chaparral City Water Company's Response. Staff stated that ultimately, Staff and the Company had resolved their discovery dispute through the execution of a protective agreement, upon which the Company provided Staff with over 15,000 pages of documents. Staff stated that its investigation was ongoing,

and that Staff had not yet determined whether the Company's activities rise to the level of impropriety or wrongdoing or impact the Company's rates or this pending rate case. Staff stated that it had retained an outside consultant to assist in Staff's review of the documents and to determine whether any alleged improprieties have impacts for this rate case. Staff stated that it found the Company's stipulation proposal acceptable, as long as all parties acknowledge that rates could be modified if the investigation yields circumstances which would warrant such action.

85. On June 23, 2009, RUCO filed its Response to Staff's Update Regarding the CPUC Investigation. RUCO agrees that there has been insufficient time to review and analyze the documentation which the Company produced on March 10, 13 and 16, 2009. RUCO stated that it does not object to having this matter proceed, but with the docket remaining open subject to reconsideration in the event that the investigation by Staff, RUCO, or the CPUC reflects impropriety by Chaparral or its parent, officers or employees.

86. On June 25, 2009, the Company filed a Response to Staff's Update. The Company asserted that there is no reason to delay rate relief, and requested the issuance of a decision in this matter as soon as possible.

87. It is reasonable to require Staff to file by January 15, 2010, with docket control, as a compliance item in this docket, a report documenting its review of the CPUC investigation documents, and to require Staff to indicate in the report its findings and a recommendation regarding whether any further proceedings or relief are warranted in this docket.

88. It is reasonable under the circumstances to make the rates approved herein interim rates subject to modification in the event the ongoing Staff investigation reveals the existence of circumstances which would warrant such action.

89. Under the circumstances of this case, it is not reasonable or in the public interest to grant the Company's request for a "delay surcharge."

90. As discussed herein, an appropriate and reasonable capital structure for the Company is 24 percent debt and 76 percent equity. The cost of debt is 5.0 percent, and an appropriate and reasonable cost of equity is 9.9 percent.

91. In the test year ended December 31, 2006, the Company experienced Operating

Income of $943,185, on total revenues of $7,505,010 for a 3.52 percent rate of return on FVRB.

92. The Company requested rates that would result in total revenues of $10,357,363, a revenue increase of $2,852,353, or 38.01 percent. RUCO recommended rates that would yield total revenues of $8,649,874, an increase of $1,144,864 or 15.25 percent. Staff recommended total revenues of $9,350,843 an increase of $1,904,143 or 25.57 percent.

93. As discussed herein, the Company's FVRB is determined to be $26,776,414.

94. A FVROR on FVRB of 7.52 percent is reasonable and appropriate.

95. The revenue increase requested by the Company would produce an excessive return on FVRB.

96. The Company's gross revenue should increase by $1,764,371.

97. Under the Company's proposed rates, an average usage (8,400 gallons/month) residential customer on a 3/4-inch meter would experience an increase of $10.90, approximately 34 percent, from $32.28 per month to $43.27 per month.

98. Under the rates adopted herein, an average usage (8,400 gallons/month) residential customer on a 3/4-inch meter would experience a monthly rate increase of $5.14, approximately 15.88 percent, from $32.37 per month to $37.51 per month.

99. It is reasonable and in the public interest to correct the rate design disparity for irrigation customers adopted in Decision No. 68176 by charging Irrigation and Construction water customers the monthly minimum charges by meter size and a flat commodity rate equal to the first tier commodity rate for other commercial and industrial customers.

100. The Company should be required to perform a monitoring exercise of its water system as recommended by Staff, to docket the results by March 10, 2010, and to comply with the filing requirements recommended by Staff and ordered herein, in the event the reported water loss is greater than 10 percent. In no case should water loss be allowed to remain at 15 percent or greater.

101. The Company should be required to perform and submit a lead/lag study in conjunction with its next rate application in order to meet the sufficiency requirements of that filing.

102. The property tax expense calculation methodology recommended by Staff is reasonable and should be adopted.

103. Because CCWC acted prudently under the circumstances in its December, 2007, $1.28 million purchase of the additional CAP allocation, the acquisition cost of the additional CAP allocation should be included in rate base, classified as a plant-in-service component of Land and Land Rights, and not subject to amortization.

104. CCWC should be allowed recovery of fifty percent of the CAP M&I charges related to the additional CAP allocation, or $20,306, as an operating expense.

105. CCWC should be allowed to defer, for possible later recovery through rates, the other fifty-percent of its costs, excluding any interest or other carrying charges, incurred for the annual CAP M&I charges.

106. CCWC should be authorized to create a deferral account to accrue these charges beginning on January 1, 2008, which is the first time the CAP M&I charges are applicable according to the contract.

107. The cost deferral authorization granted herein will allow consideration of, but not guarantee recovery of these costs in future ratemaking proceedings.

108. CCWC should be required to prepare and retain accounting records sufficient to permit detailed review of all deferred costs in a rate proceeding.

109. CCWC's deferral authority is limited to 48 months from January 1, 2008, unless Chaparral City Water Company, Inc. has a general rate case pending at the end of the 48 month period, in which case Chaparral City Water Company, Inc. may continue to defer these costs until such rate case is concluded. Chaparral City Water Company, Inc. shall address the deferred amounts recorded as of ninety days before the due date for filing Staff's Direct Testimony in the rate case. Any additional properly deferred amounts recorded after that date may be considered in subsequent rate case(s).

110. CCWC should be allowed to seek to include the accumulated deferred balance associated with all amounts deferred pursuant to this Decision in the cost of service for rate-making purposes in Chaparral City Water Company, Inc.'s next general rate case. Nothing in this Decision shall be construed to limit this Commission's authority to review such balance and to make disallowances thereof due to imprudence, errors or inappropriate application of the requirements of

this Decision.

111. This Decision should not be construed in any way to limit this Commission's authority to review the entirety of the acquisition and to make any disallowances thereof due to imprudence, error or inappropriate application of the requirements of this Decision.

112. ADEQ's formally delegated agent, the Maricopa County Environmental Services Department ("MCESD") has determined that the CCWC drinking water system, PWS #07-017, is currently delivering water that meets quality standards required by the Arizona Administrative Code, Title 18, Chapter 4.

113. The Company's service territory is within the Phoenix Active Management Area ("AMA"), and the Arizona Department of Water Resources ("ADWR") has reported that the Company is in compliance with its requirements governing water providers.

114. The Company has no delinquent Arizona Corporation Commission compliance issues.

115. The Company has an approved curtailment plan tariff that became effective on October 1, 2005.

116. The Company has an approved backflow prevention tariff that became effective on October 1, 2005.

117. The Company should be required to use, on a going-forward basis, the depreciation rates set forth at Table J-1 of the Engineering Report attached to the Direct Testimony of Staff witness Marlin Scott, Jr.

## CONCLUSIONS OF LAW

1. CCWC is a public service corporation pursuant to Article XV of the Arizona Constitution and A.R.S. §§ 40-250 and 40-251.

2. The Commission has jurisdiction over CCWC and the subject matter of the application.

3. Notice of the proceeding was provided in conformance with law.

4. The fair value of CCWC's rate base is $26,776,414, and applying a 7.52 percent fair value rate of return on this fair value rate base produces rates and charges that are just and reasonable.

5. The rates and charges approved herein are reasonable.

6. Administrative notice is taken of the complete record of Docket No. W-02113A-04-0616.

7. It is reasonable to require Staff to file by January 15, 2010, with docket control, as a compliance item in this docket, a report documenting its review of the CPUC investigation documents, and to require Staff to indicate in the report its findings and a recommendation regarding whether any further proceedings or relief are warranted in this docket and when interim rates become permanent.

8. It is reasonable under the circumstances to make the rates approved herein interim rates subject to modification in the event the ongoing Staff investigation reveals the existence of circumstances which would warrant such action.

9. It is reasonable and in the public interest to require the Company to perform a monitoring exercise of its water system as recommended by Staff, to docket the results by March 10, 2010, and to comply with the filing requirements recommended by Staff and ordered herein, in the event the reported water loss is greater than 10 percent. It is reasonable and in the public interest to require that in no case shall water loss be allowed to remain at 15 percent or greater.

10. It is reasonable and in the public interest to adopt the property tax expense calculation methodology recommended by Staff.

11. It is reasonable and in the public interest to allow CCWC to defer fifty percent of the CAP M&I charges subject to the requirements and conditions set forth herein.

12. It is reasonable and in the public interest to require CCWC to perform and submit a lead/lag study in conjunction with its next rate adjustment request application in order to meet the sufficiency requirements of that filing.

13. It is reasonable and in the public interest to correct the rate design disparity adopted in Decision No. 68176 by charging Irrigation and Construction water customers the monthly minimum charges by meter size and a flat commodity rate equal to the first tier commodity rate for other commercial and industrial customers.

**ORDER**

IT IS THEREFORE ORDERED that Chaparral City Water Company, Inc. is hereby

authorized and directed to file with the Commission, on or before October 15, 2009, the following schedules of rates and charges, which shall be effective for all service rendered on and after October 15, 2009:

MONTHLY USAGE CHARGE:

| | |
|---|---|
| 3/4" Meter | $ 16.50 |
| 1" Meter | 27.50 |
| 1 ½" Meter | 55.00 |
| 2" Meter | 88.00 |
| 3" Meter | 176.00 |
| 4" Meter | 275.00 |
| 6" Meter | 550.00 |
| 8" Meter | 880.00 |
| 10" Meter | 1,265.00 |
| 12" Meter | 2,365.00 |
| Fire Hydrants Used for Irrigation | Per Meter Size |
| Irrigation and Construction | Per Meter Size |
| Monthly Service Charge for Fire Sprinkler | |
| 4" or smaller Meter | 10.00 |
| 6" Meter | 10.00 |
| 8" Meter | 10.00 |
| 10" or larger Meter | 10.00 |

COMMODITY RATES

| | |
|---|---|
| Per 1,000 Gallons | |
| (Residential, Commercial, Industrial) | |
| 3/4-inch Meter - Residential | |
| 0-3,000 Gallons | $2.19 |
| 3,001 – 9,000 Gallons | 2.65 |
| Over 9,000 Gallons | 3.15 |
| 3/4-inch Meter – Commercial and Industrial | |
| 0 – 9,000 Gallons | 2.65 |
| Over 9,000 Gallons | 3.15 |
| 1-inch Meter | |
| 0 to 24,000 Gallons | 2.65 |
| Over 24,000 Gallons | 3.15 |
| 1 1/2- inch Meter | |
| 0 to 60,000 Gallons | 2.65 |
| Over 60,000 Gallons | 3.15 |
| 2-inch Meter | |

| | |
|---|---|
| 0 to 100,000 Gallons | 2.65 |
| Over 100,000 Gallons | 3.15 |
| 3-inch Meter | |
| 0 to 225,000 Gallons | 2.65 |
| Over 225,000 Gallons | 3.15 |
| 4 - inch Meter | |
| 0 to 350,000 Gallons | 2.65 |
| Over 350,000 Gallons | 3.15 |
| 6-inch Meter | |
| 0 to 725,000 Gallons | 2.65 |
| Over 725,000 Gallons | 3.15 |
| 8 - inch Meter | |
| 0 to 1,125,000 Gallons | 2.65 |
| Over 1,125,000 Gallons | 3.15 |
| 10 -inch Meter | |
| 0 to 1,500,000 Gallons | 2.65 |
| Over 1,500,000 Gallons | 3.15 |
| 12 - inch Meter | |
| 0 to 2,250,000 Gallons | 2.65 |
| Over 2,250,000 Gallons | 3.15 |
| Irrigation and Construction /Bulk – All Gallons | 2.65 |
| Fire Hydrant Irrigation/Construction – All Gallons | 2.65 |
| Standpipe (Fire Hydrants) – All Gallons | 2.65 |
| Fire Sprinklers – All Gallons | 2.65 |

SERVICE CHARGES:

| | |
|---|---|
| Establishment of Service: | |
| Regular Hours | $25.00 |
| After Hours | 35.00 |
| Reestablishment of Service (within 12 months) | * |
| Reconnection of Service (Delinquent): | |
| Regular Hours | 35.00 |
| After Hours | 50.00 |
| Water Meter Test (If Correct) | 35.00 |
| Water Meter relocation at Customer Request (Per ACC Rule 14-2-405(B)) | Cost |
| Meter Re-Read (If Correct) | $25.00 |
| NSF Check Charge | 25.00 |
| Late Fee Charge | 1.5% per month |
| Deferred Payment Finance Charge | 1.5% per month |
| Service Call – After Hours (Per ACC Rule 14-2-403(D)) | Refer to charges above |
| Deposit Requirements Residential | ** |

Deposit Requirements Non-Residential **
Deposit Interest ***

* Monthly Minimum times Months Disconnected From the Water System (Per A.A.C. Rule 14-2-403(D))
**Residential – two times the average bill. Non-residential – two and one-half times the estimated maximum bill.

***Interest per (Per ACC Rule 14-2-403(B)).

OFF-SITE FACILITIES HOOK-UP FEE:

| | |
|---|---|
| 5/8" x 3/4" Meter | **** |
| 3/4" Meter | **** |
| 1" Meter | **** |
| 1 1/2" Meter | **** |
| 2" Meter | **** |
| 3" Meter | **** |
| 4" Meter | **** |
| 6" or Larger Meter | **** |

**** The fee shall be variable, fixed on January 1 of each calendar year, computed by dividing $369,404.50 by the number of hook-ups during the previous calendar year. However, in no event shall the hook-up fee be higher than $1,000 nor less than $500.
2006 filing – New water installations. May be assessed only once per parcel, service connection, or lot within a subdivision. Purpose is to equitably apportion the costs of construction additional off-site facilities to provide water production, delivery, storage, and pressure among all new service connections.

SERVICE LINE AND METER INSTALLATION CHARGES:

| | Service Line Charge | Meter Charge | Total Charge |
|---|---|---|---|
| 5/8" x 3/4" Meter | $ 385.00 | $ 135.00 | $ 520.00 |
| 3/4" Meter | 385.00 | 215.00 | 600.00 |
| 1" Meter | 435.00 | 255.00 | 690.00 |
| 1-1/2" Meter | 470.00 | 465.00 | 935.00 |
| 2" Turbine | 630.00 | 965.00 | 1,595.00 |
| 2" Compound | 630.00 | 1,690.00 | 2,320.00 |
| 3" Turbine | 805.00 | 1,470 00 | 2,275.00 |
| 3" Compound | 845.00 | 2,265.00 | 3,110.00 |
| 4" Turbine | 1,170.00 | 2,350.00 | 3,520.00 |
| 4" Compound | 1,230.00 | 3,245.00 | 4,475.00 |
| 6" Turbine | 1,730.00 | 4,545.00 | 6,275.00 |
| 6" Compound | 1,770.00 | 6,280.00 | 8,050.00 |
| 8" or Larger | At Cost | At Cost | At Cost |

> In addition to the collection of regular rates, the utility will collect from its customers a proportionate share of any privilege, sales, use and franchise tax. Per Commission Rule 14-2-408(D)(5).
>
> All advances and/or contributions are to include labor, materials, overheads, and all applicable taxes, including all gross-up taxes for income taxes, if applicable.

IT IS FURTHER ORDERED that the Low Income Tariff attached hereto as Exhibit A is hereby adopted and shall be included with the tariffs filed in accordance with the Ordering Paragraph above.

IT IS FURTHER ORDERED that this docket shall remain open, pending conclusion of the parties' review of the California Public Utilities Commission investigation documents.

IT IS FURTHER ORDERED that the rates approved herein are interim rates subject to modification in the event the ongoing Staff investigation related to the California Public Utilities Commission investigation documents reveals the existence of circumstances which would warrant such action.

IT IS FURTHER ORDERED that Staff shall file by January 15, 2010, with Docket Control, as a compliance item in this docket, a report documenting its review of the California Public Utilities Commission investigation documents. The report shall indicate Staff's findings and a recommendation regarding whether any further proceedings or relief are warranted in this docket.

IT IS FURTHER ORDERED that the property tax expense calculation methodology recommended by Staff is hereby adopted

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. shall begin a 12-month monitoring exercise of its water system after the Company completes its own Central Arizona Project water meter installation, and shall docket the results of the system monitoring as a compliance item in this case by March 1, 2010. If the reported water loss for the period from February 1, 2009 through February 1, 2010 is greater than 10 percent, the Company shall prepare, and file, by April 30, 2010. as a compliance item for this proceeding for review and certification by Staff, a report containing a detailed analysis and plan to reduce water loss to 10 percent or less, or alternatively, if the Company believes it is not cost effective to reduce water loss to less than 10 percent, the

Company shall submit a detailed cost benefit analysis to support its opinion. In no case shall water loss be allowed to remain at 15 percent or greater.

IT IS FURTHER ORDERED that because Chaparral City Water Company, Inc. acted prudently under the circumstances in its December, 2007, $1.28 million purchase of the additional Central Arizona Project allocation, the acquisition cost of the additional allocation should be included in rate base, classified as a plant-in-service component of Land and Land Rights, and not subject to amortization.

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. shall be allowed recovery of fifty percent of the Central Arizona Project Municipal and Industrial charges related to the additional Central Arizona Project allocation, or $20,306, as an operating expense in this case.

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. is hereby authorized to defer, for possible later recovery through rates, the remaining fifty-percent of its costs, excluding any interest or other carrying charges, incurred for the annual Central Arizona Project Municipal and Industrial charges, and absolutely nothing in this Decision shall be construed in any way to limit this Commission's authority to review the entirety of the acquisition and to make any disallowances thereof due to imprudence, error or inappropriate application of the requirements of this Decision.

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. is authorized to create a deferral account to accrue the authorized deferral charges beginning on January 1, 2008, which is the first time the Municipal and Industrial charges are applicable according to the contract.

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. shall prepare and retain accounting records sufficient to permit detailed review, in a rate proceeding, of all deferred costs recorded as authorized above.

IT IS FURTHER ORDERED that the cost deferral authorization granted herein will allow consideration of, but not guarantee recovery of these costs in future ratemaking proceedings.

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc.'s deferral authority is limited to 48 months from January 1, 2008, unless Chaparral City Water Company, Inc. has a general rate case pending at the end of the 48 month period, in which case Chaparral City Water Company, Inc. may continue to defer these costs until such rate case is concluded. Chaparral City Water

Company, Inc. shall address the deferred amounts recorded as of ninety days before the due date for filing Staff's Direct Testimony. Any additional properly deferred amounts recorded after that date may be considered in subsequent rate case(s).

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. may seek to include the accumulated deferred balance associated with all amounts deferred pursuant to this Decision in the cost of service for rate-making purposes in Chaparral City Water Company, Inc.'s next general rate case. Nothing in this Decision shall be construed to limit this Commission's authority to review such balance and to make disallowances thereof due to imprudence, errors or inappropriate application of the requirements of this Decision.

IT IS FURTHER ORDERED that Chaparral City Water Company, Inc. shall perform and submit a lead/lag study in conjunction with its next rate adjustment request application in order to meet the sufficiency requirements of that filing.

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IT IS FURTHER ORDERED that administrative notice is hereby taken in this docket of the complete record of Docket No. W-02113A-04-0616.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY ORDER OF THE ARIZONA CORPORATION COMMISSION.

CHAIRMAN COMMISSIONER

COMMISSIONER COMMISSIONER COMMISSIONER

IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto set my hand and caused the official seal of the Commission to be affixed at the Capitol, in the City of Phoenix, this ~~oct~~ 21st day of October 2009.

ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT

DISSENT

SERVICE LIST FOR: CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO.: W-02113A-07-0551

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**EXHIBIT A**

CHAPARRAL CITY WATER COMPANY (CCWC)
ALTERNATE RATES FOR WATER (ARW)
DOMESTIC SERVICE – SINGLE FAMILY ACCOMMODATION

APPLICABILITY

Applicable to residential water service for domestic use rendered to low-income households where the customer meets all the Program Qualifications and Special Conditions of this rate schedule.

TERRITORY

Within all Customer Service Areas served by the Company.

RATES

*Fifteen percent* (15%) discount applied to the regular filed tariff.

PROGRAM QUALIFICATIONS

1. The CCWC bill must be in your name and the address must be your primary residence or you must be a tenant receiving water service by a sub-metered system in a mobile home park.
2. You may not be claimed as a dependent on another person's tax return.
3. You must reapply each time you move.
4. You must renew your application every two years, or sooner, if requested.
5. You must notify CCWC within 30 days if you become ineligible for ARW.
6. Your total gross annual income of all persons living in your household cannot exceed the income levels below:

**Effective October 15, 2009**

| No. of Person In Household | Total Gross Annual Income |
|---|---|
| 1 | $15,600 |
| 2 | 21,000 |
| 3 | 26,400 |
| 4 | 31,800 |
| 5 | 37,200 |
| 6 | 42,600 |

For each additional person residing in the household, add $5,400.

(Continued)

**EXHIBIT A**

For the purpose of the program the "gross household income" means all money and non cash benefits, available for living expenses, from all sources, both taxable and non taxable, before deductions for all people who live in my home. This includes, but is not limited to:

Wages or salaries
Interest or dividends from:
Savings accounts, stocks or bonds
Unemployment benefits
TANF(AFDC)
Pensions
Gifts

Social Security, SSI, SSP
Scholarships, grants, or other aid used for living expenses
Disability payments
Food Stamps
Insurance settlements

Rental or royalty income
Profit from self-employment (IRS form Schedule C, Line 29)
Worker's Compensation
Child Support
Spousal Support

## SPECIAL CONDITIONS

1. Application and Eligibility Declaration: An Application and eligibility declaration on a form authorized by the Commission is required for each request for service under this schedule. Renewal of a customer's eligibility declaration will be required, at least, every two years.

2. Commencement of Rate: Eligible customers shall be billed on this schedule commencing with the next regularly scheduled billing period that follows receipt of application by the Utility.

3. Verification: Information provided by the applicant is subject to verification by the Utility. Refusal or failure of a customer to provide documentation of eligibility acceptable to the Utility, upon request by the Utility, shall result in removal from this rate schedule.

4. Notice From Customer: It is the customer's responsibility to notify the Utility if there is a change of eligibility status.

5. Rebilling: Customers may be re-billed for periods of ineligibility under the applicable rate schedule.

6. Mobile home Park and Master-metered: A reduction will calculated in the bill of mobile home park and master-metered customers, who have sub-metered tenants that meet the income eligibility criteria, so an equivalent discount (15%) can be passed through to eligible customer(s).

EXHIBIT A-20

**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

| | |
|---|---|
| IN THE MATTER OF THE APPLICATION OF GLOBAL WATER – PALO VERDE UTILITIES COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES FOR UTILITY SERVICE DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTY THROUGHOUT THE STATE OF ARIZONA. | DOCKET NO. SW-03575A-09- |

Direct Testimony

of

Gregory A. Barber

February 20, 2009

EXHIBIT
A-20
ADMITTED

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## I. Introduction.

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

A. My name is Gregory A. Barber. I am employed as Senior Vice President and Chief Financial Officer by Global Water Management, LLC. My business address is 21410 North 19th Avenue, Suite 201, Phoenix, Arizona 85027. For the purposes of this testimony, "Global Water", "Global Utilities", "Global Parent" and "Global Management" have the same definitions given in Mr. Hill's testimony.

**Q. Please summarize your work experience and qualifications.**

A. I have extensive, senior level experience in corporate finance, including responsibility for SEC reporting, budgeting, forecasting, cash management and internal controls. I have previously served as an executive of several large, publicly traded companies. From 2006 to 2008, I served as Vice President, Chief Accounting Officer and Controller of Rural/Metro Corporation. Rural/Metro provides medical transportation services to more than 400 communities, and is a public company headquartered in Scottsdale, Arizona. My responsibilities included full responsibility for internal and external reporting. I also directed the company-wide payroll function for approximately 8,000 employees and the company-wide accounts payable function for approximately 15,000 invoices per month.

Before that, from 1998 to 2006, I served in several executive or management positions for Giant Industries, Inc. Giant is a $4.5 billion per year public company headquartered in Scottsdale, Arizona. While at Giant, my final position was Vice President, Chief Accounting Officer and Assistant Secretary. In that position, I was responsible for all financial statements, SEC reporting, SEC compliance, and Sarbanes-Oxley compliance.

From 1988 to 1998, I served as an executive for several businesses in New Mexico. Prior to that, I served as a Staff Accountant at two public accounting firms, including the predecessor to KPMG. I hold a bachelor's of business administration in accounting and financial management, from the University of New Mexico. I am a Certified Public Accountant licensed in Arizona.

**Q. What topics do you cover in your direct testimony?**

A. I address the following topics:

- I describe our cost allocation system.
- I sponsor many of our rate case schedules.
- I testify in support of our test year rate base, expenses and revenue.
- I provide the cost of debt for the Global Utilities.

## II. Cost Allocation.

### *A. Corporate and Regional Structure.*

**Q. Can you explain the general functions and operations of Global Parent, Global Management and GWI?**

A. Global Water Resources, LLC (Global Parent)

Global Parent employs the executive staff. Global Parent is responsible for the long-term strategic planning and management of our Infrastructure Coordination and Financing Agreements ("ICFA"). It raises equity and debt to fund the unregulated and regulated companies. Global Parent is funded by the Global Parent shareholders' equity and debt.

Global Water Management, LLC (Global Management)

Global Management provides growth-related services to the Global Utilities, such as engineering of new facilities, system planning, construction management, inspection of new facilities, and regional and project permitting. Many of these functions are normally outsourced by many other utility companies. Global Management also provides regional planning and it is responsible for maximizing use of recycled water. It is funded through fees for its growth services to the Global Utilities, Global Management shareholders and third party services.

Global Water, Inc (GWI)

GWI provides the operational and administrative staff for the day-to-day activities of the Global Utilities. GWI is responsible for the support of the Global Utilities and is funded through utility revenues.

**Q. Can you explain how this relates to Global Water's cost allocation?**

**A.** The costs of long-term strategic planning are accounted for at **Global Parent**. These are the costs associated with the majority of the Global executives[1], the economic evaluation of capital expenditures, utility acquisitions, marketing (Global Parent works to extensively advertise the importance of water conservation), lobbying, etc. *None of these costs are allocated to utilities.*

The costs of growth services are accounted for at **Global Management.**[2] These are the costs associated with new-build engineering, system planning, construction management, initial construction inspections, and permitting. These costs are not required to meet the

[1] 84% of executive compensation is paid for by Global Parent shareholders.

[2] Since Global Management is where growth-oriented employees and costs are allocated, it is the entity that has been subject to some downsizing as growth has slowed. Due to these growth-oriented costs being accounted for at Global Management the operations of the regulated subsidiaries (utilities) have been relatively unaffected by the downturn in the economy.

day to day activities of utilities, but rather are used to meet requirements due to expansion and growth. These costs should be allocated under NARUC standards to the capital projects they support.

The costs of day-to-day activities are placed in **Global Water, Inc ("GWI")**. These are costs such as utility operations, billing, customer service, etc. All Arizona utilities will be subsidiaries of GWI. These costs are necessary for the day to day activities of utilities regulated by the Commission, as they are necessary to serve customers regardless of growth. Under the Global Water approach, these services are consolidated – which saves ratepayers money by providing economies of scale. These costs are allocated in accordance with the methodology described in further detail below.

All costs are directly classified to the appropriate entity described above (Global Parent, Global Management or GWI), and the costs at GWI are further directly allocated to the utilities to the maximum extent practicable. Ultimately, the allocation methodology involves several steps and is described in detail below.

**Q. Please explain Global Water's regions?**

A. From an accounting perspective, we have established 5 regions based on the practical realities of how the Global Utilities operate:

- The West Valley Region includes Water Utility of Greater Tonopah, Valencia Water Company – Town Division, Valencia Water Company – Greater Buckeye Division and Water Utility of Northern Scottsdale. These utilities are all served by operators working out of our West Valley Regional office in Buckeye.
- The Maricopa-Casa Grande Region includes Global Water – Santa Cruz Water Company, Global Water – Palo Verde Utilities Company, CP Water

Company and Francisco Grande Utilities Company. These entities are all served by operators working in our facilities in and around Maricopa.

- The Willow Valley Region includes Willow Valley Water Company, which is located in Mohave County.
- The Deer Valley Region includes our corporate headquarters. Costs from this region are allocated partly to the Global Utilities (through GWI), partly to Global Management, and partly to Global Parent.
- The Global Parent region is comprised of costs that are allocated solely to Global Parent.
- We may also establish an Eloy region once Global Water – Picacho Cove Utilites Company and Global Water – Picacho Cove Water Company become active.

### *B. Global Water's cost allocation principles and methods.*

**Q. Please explain Global Water's system of cost allocation.**

A. Global Water used the NARUC's "Guidelines for Cost Allocation and Affiliate Transactions" (July 12, 1999) as guidance for cost allocation between affiliates.[3] Global Water implemented these concepts for the 2008 test year, and throughout our internal evaluation of cost-allocation, Global Water has used them as guidance.

In evaluating costs company-wide, Global Water recognized that groups of costs can be separated into three distinct brackets:

- Long-Term Strategic Planning (Global Parent)
- Growth Services (Global Management)

[3] "Guidelines for Cost Allocations and Affiliate Transactions." National Association of Regulatory Utility Commissioners, July 12, 1999.

- Day-to-Day Activities (GWI)

**Q. How are affiliate transactions between the regulated and non-regulated entities handled?**

A. According to the NARUC guidelines, the objective of the affiliate transactions' guidelines is to decrease the likelihood of subsidization in order to protect utility ratepayers. NARUC guidelines state: "if the affiliate transaction pricing guidelines are too strict, economic transactions in the best interest of ratepayers may be discouraged. These guidelines need to offer flexibility to accommodate exceptions where the outcome is in the best interest of the utility and its ratepayers." Global Water has implemented the following guidelines to its affiliate transactions:

1. Global Parent, Global Management and GWI will strive to charge the lower of fully allocated cost or market price whenever goods, products or services are sold or provided by Global Water to a regulated utility.
2. Global Utilities will strive to charge the higher of fully allocated cost or market price whenever goods, products or services are sold or provided by a regulated utility to Global Management, GWI or Global Parent.
3. Global Water will perform a market pricing analysis for (1) and (2) above when the annual fully allocated cost for a given good, product or service exceeds $1,000,000.
4. Global Water will maintain all information underlying affiliate transactions with the affiliated utility for a minimum of three years, or as required by law or regulation.

**Q. What tests does Global Water use in allocating costs?**

A. Global Water applied two tests in deciding where to allocate costs and employees:

1. Employees should be allocated to the lowest possible level on the organization chart. For example, a wastewater plant operator in Maricopa can obviously and easily be allocated to Global Water - Palo Verde Utilities Company – her work directly benefits only that entity. A customer service representative in our main headquarters answers calls from every Global Utility – his work directly benefits all utilities, so he would obviously be allocated to all utilities.

2. If the function in question can be considered a part of the normal, steady-state operation of a water or wastewater utility, that function should be provided by a regulated entity. If the function in question represents a task or skill that would not be required in the normal, steady-state operation of a water or wastewater utility (i.e. it is related to growth), that function should be provided by a non-regulated entity, and its costs allocated under NARUC standards.

Accordingly, the Global Utilities are placed under GWI, and employees are directly allocated to each utility where possible. Any employee who performs tasks for only one utility will be allocated to that utility directly.

These breakouts comply with B.5 of the NARUC guidelines, "All costs should be classified to services or products which, by their very nature, are either regulated, non-regulated, or common to both."

*C. Employee Cost Allocation.*

**Q. Can you provide some general examples of how the cost allocation system works for employees?**

A. Yes. Here are some examples:

- A plant operator working solely for Global Water - Palo Verde Utilities Company ("Palo Verde") – the costs will be directly allocated to Palo Verde; no further allocation will be necessary.
- A plant operator who normally spends time working between Valencia Water Company – Town Division, Valencia Water Company - Greater Buckeye Division, Water Utility of Greater Tonopah and Water Utility of Northern Scottsdale – the employee's costs will be allocated to the West Valley Regional cost pool, and then allocated among those utilities.
- A customer service representative ("CSR") – if the CSR is located at Maricopa, Buckeye or Willow Valley, the costs will be allocated to the appropriate regional cost pool, and then allocated among the respective utilities. If the CSR is located at the Global Support Center in Deer Valley, the costs will be allocated amongst all the Global Utilities.
- An engineer – Global Management's engineers provide utility planning services; they provide project management from initial concept, through 30% design, through bid to construction, and manage the project through its commissioning, acceptance and warranty periods. The costs of an engineer would be classified to Global Management – under our 'steady state' test, these functions (while certainly necessary) would not be required on a day to day basis by a water or wastewater utility.
- A staff accountant – the costs of a staff accountant would be allocated amongst Global Parent, Global Management and GWI at rates of 20%, 35% and 45% respectively. The GWI portion is then allocated amongst the Global Utilities.
- The Chief Financial Officer – the costs of the Chief Financial Officer would be classified to Global Parent and would not be allocated to any of the Global Utilities.

*D. Allocation of Operating Expenses.*

**Q: How are expenses applied to the companies?**

A: Expenses are applied to each company by the parent company, region or department either through a direct expense incurred by them specifically, or through an allocation.

**Q: What is the objective of applying expenses using an allocation?**

A: First, remember that direct expenses incurred by the Global Utilities are allocated directly to them -- that is expenses such as direct employees, power, chemicals, consumables, etc. The expense allocation requirement only comes into play when there are expenses incurred that benefit several utilities or regions simultaneously. The objective of the allocation is to correctly allocate these expenses to Global Management, GWI (i.e., the regulated utilities) and Global Parent. This includes such things as technical expertise and services (compliance services, financial services) and operational support services such as Information Technology systems (hardware, software) and services. We leverage these combined services and systems to provide stronger, more cost effective utilities. As a result, each individual utility receives services for a lower cost than what they could obtain on their own.

**Q: Why is an allocation necessary?**

A: Global Water employs staff and systems to provide support services across our entire family of companies. As such it is important that strategic expenses be allocated to Global Parent, capital costs be allocated to Global Management and operating expenses be allocated to GWI.

*E. Allocation process and allocation percentages.*

**Q: Can you walk us through the decision process?**

A: A flow chart is included at Attachment Barber-1 for reference. When an invoice is received, it is identified as a direct expense or a parent, regional, or departmental expense in accordance with the criteria established above. A direct expense is an expense that only applies to one company (a regulated subsidiary of GWI) and no further allocation is needed. A parent company, regional or departmental expense is an expense that benefits more than one Global Utility is then subject to the allocation methodologies discussed below.

**Q: Can you describe the Regional, Departmental and Parent Company allocation process?**

A: Regional Allocation

The objective of the regional allocation is to assign general and administrative (G&A) expenses which are not direct cost to a specific utility but benefit a specific region as a whole. Global Water establishes an allocation percentage to allocate expenses to the Global Utilities on a combination of connection counts and management experience.

An example of a regional expense is the Qwest bill for the West Valley Region (Buckeye office). This telephone service is used by all subsidiaries associated with the West Valley (WUNS, WUGT, Valencia Water Company – Town Division, and Valencia Water Company – Greater Buckeye Division). In this case, the phone bill is charged to each company based on established allocation percentage.

Departmental Allocation

The objective of the departmental allocation is to assign G&A expenses from employee expense reports, purchasing cards or departmental purchases to the department that benefited from the purchase or service. The allocation percentages are detailed in Attachment Barber-2. The allocation percentages are based on total company, total region and total regional office customer counts and management judgment. These expense allocation percentages are reduced and allocated to Global Management and Global Parent when portions of the expense benefit them.

An example of a departmental expense is the Verizon Wireless bill. The bill is expensed to the department of the employee to whom the cellular phone is provided. That expense is spread over the companies that the employee does work for; thus a cell phone for the Operations Supervisor in the Maricopa-Casa Grande Region would be coded to the Operations Department and the cost allocated to Santa Cruz and Palo Verde because the Supervisor spends his time working on both utilities.

Parent Company Allocation

The objective of the Parent Company allocation is to allocate expenses from Global Parent, Global Management and GWI to the appropriate entity. The allocation percentages vary by account type and were developed with the input from senior management's experience guided by the following factors:

1. Weighted Management – the proportion of managers to total employees in a region or department.
2. Payroll – the proportion of payroll costs incurred by a department or region.
3. Revenue – the proportion of revenue received by a region or subsidiary.

4. An average of the above factors.

It should be noted that the conceptual allocation methodologies were determined and implemented for the entire test year (2008). Once the percentages were established they have remained unchanged (see Attachment Barber-2). The allocation percentages are based on the management judgment using the four factors described above as a starting point.

**Q: Can you further describe the factors employed in the Parent Company allocation?**

A: Weighted Management

The weighted management method identifies the relative number of managers associated with each department. This factor is employed when we are considering those expenses that are routinely confined to that level of employee. For example, Global Water would not normally pay relocation expenses for line employees (operations staff, CSR staff, etc). However, we may choose to do so at the management level. In these cases, it is appropriate to allocate those costs on the basis of the relative numbers of managers in a department.

Payroll

Expenses allocated using the payroll methodology are allocated on the basis of the relative amounts of total payroll in a department or subsidiary. Under this methodology, those departments or regions having a greater payroll will incur a higher proportion of this cost. Examples of the use of this methodology include rent expense and human resource expenses. In these cases, more payroll is interpreted as a greater necessity for and reliance upon the service in question.

Revenue

The revenue allocation is calculated by taking the total revenue generated from the specific company, and comparing it to the consolidated revenue of all of the companies. Account categories that are allocated using the revenue methodology are expenses that have a direct relationship with the increase and decrease of revenue dollars. An example of this type of expense is insurance premiums as the insurance carrier bases the premium amount on the revenue of the company. Another example is communications expenses where we assume that more revenue requires more field and customer service telephone costs.

Average

Average allocation is based on taking an average of a company's percentages for revenue, people and payroll dollars. Account categories that are allocated using an average are expenses that cannot be fairly allocated based on one specific methodology. Rather, a blend of all of the variables is used. For example, the demand for maintenance items such as computer repairs can fluctuate when revenue, number of employees or payroll dollars increase. The risk that a computer may malfunction would increase when more employees are working on the system, or more transactions (revenue) are being processed.

**Q: Can you describe why this is a better process than the standard Four Factor Methodology?**

A: The "4 factor" traditionally used by the Commission includes factors for revenue, customer count, plant in service and operating expenses minus depreciation. We currently use two of the four methods traditionally used by the commission. We feel our other allocation methodologies of payroll dollars and weighted management more accurately allocate expenses within our companies than the 4 factor approach.

**Q: How do you keep direct, parent, regional and departmental expenses separate in the General Ledger so that they do not get comingled in the allocation process?**

A: If it is a direct expense, the invoice is coded directly to the company that incurred the expense. No allocation required. If it is a parent, regional or departmental expense, the invoice is coded to the corresponding company, department or region based on the type of allocation method the expense applies to (as already discussed above).

Accounts Payable codes each invoice or expense with specific sub-codes to tell our GL of proper allocation methods. As a result, we can track expenses through the exact allocation process. In general, allocation codes have the following convention:

101–80901–45–07

Company Code – the first three digitals represent the company (101 in the example above).

GL Account Code – the next five digits represent the GL Account (80901 in the example above).

Department Code – the following two digits represent the department (45 in the example above).

Regional Code – the last two digitals represent the region (07 in the example above). Regional Code applies to all allocation methods.

There are five regional codes and they are:

1. 00 – Default for Deer Valley and Global Management allocation to Global Parent and GWI, sub code not picked up on utility companies for allocations.
2. 05 – Global Parent allocation.

3. 06 – West Valley allocation to WUNS, WUGT, WUGB and VWC.

4. 07 – Maricopa Region allocation to SCWC and PVUC.

5. 08 – Willow Valley allocation.

## III. Schedules.

**Q. Are you sponsoring the standard rate schedules?**

A. Yes, I am sponsoring the following schedules, which have been developed in accordance with Commission Rule R14-2-103.

| Schedule | Type |
|---|---|
| A | Summary |
| B | Rate Base |
| C | Income Statement |
| E | Financial Statements |
| F | Projections |
| H | Effect of Rates |

The "D" Schedules (Cost of Capital) are sponsored by Mr. Rowell. We did not file the "G" schedules (cost of service). Mr. Moe describes the adjustments shown in these schedules in his testimony.

## IV. Rate Base.

**Q. How did you arrive at the test year original cost rate base shown on Schedule B-1?**

A. The original cost was calculated by beginning with each utility's plant in service at the end of the Test Year, as shown in Column A of Schedule B-2. Typical rate base adjustments

(accumulated depreciation, Advances in Aid of Construction, etc.) were then made to establish actual end of Test Year rate base shown in Column A, Line 41 of Schedule B-2. As shown on Column J, Line 41 of Schedule B-2, and summarized on Schedule B-1, the Utilities have the following adjusted Test Year rate bases:

| | |
|---|---|
| Global Water - Santa Cruz Water Company | $ 45,260,919 |
| Global Water - Palo Verde Utilities Company | $ 63,637,830 |
| Valencia Water Company – Town Department | $ 4,240,018 |
| Valencia Water Company – Greater Buckeye | $ 929,057 |
| Water Utility of Greater Tonopah | $ 2,598,259 |
| Willow Valley Water Company | $ 2,251,164 |

**Q. Are the Global Utilities proposing a Reconstruction Cost Net of Depreciation (RCND) rate base?**

A. No, not in this rate case. The Global Utilities accept the use of the Original Cost Rate Base (OCRB) as the Fair Value Rate base (FVRB) in this case. The Commission's approach to FVRB is in flux, and the Global Utilities have taken this step to simplify the issues in this case. However, the Global Utilities reserve the right to propose a RCND rate base or other modifications to FVRB in future cases.

## V. <u>Cost of Debt.</u>

**Q. What is the cost of debt in the capital structure?**

A. The cost of debt is set forth below and in Schedule D-2. Valencia Water Company – Town Department; Valencia Water Company – Greater Buckeye Department and Willow Valley Water Company have received loans through the Water Infrastructure Financing Authority ("WIFA").

The cost of the WIFA loans for each applicable utility is as follows:

| Cost of Valencia Town Division WIFA Loans | | | | |
|---|---|---|---|---|
| WIFA Loan | | 12/31/2008 Balance | Interest Rate | |
| WIFA 920024-99 | $ | 43,427 | 5.81% | 0.11% |
| WIFA 920102-06 | $ | 2,338,158 | 6.75% | 6.63% |
| Total | $ | 2,381,585 | | 6.73% |

| Cost of Valencia Greater Buckeye Division WIFA Loans | | | | |
|---|---|---|---|---|
| WIFA Loan | | 12/31/2008 Balance | Interest Rate | |
| WIFA 920072-03 | $ | 43,351 | 4.69% | 1.21% |
| WIFA 920103-06 | $ | 94,825 | 6.65% | 3.75% |
| Stewart Title (Garcia) | $ | 29,925 | 8% | 1.42% |
| Total | $ 168,101 | | | 6.38% |

| Cost of Tonopah WIFA Loans | | | | |
|---|---|---|---|---|
| WIFA Loan | | 12/31/2008 Balance | Interest Rate | |
| WIFA 920071-03 | $ | 77,649 | 4.38% | 0.67% |
| WIFA 920104-06 | $ | 431,705 | 6.65% | 5.64% |
| Total | $ | 509,354 | | 6.30% |

| Cost of Willow Valley WIFA Loans | | | | |
|---|---|---|---|---|
| WIFA Loan | | 12/31/2008 Balance | Interest Rate | |
| WIFA 920010-98 | $ | 143,557 | 6.13% | 3.86% |
| WIFA 920078-03 | $ | 84,396 | 4.38% | 1.62% |
| Total | $ | 227,953 | | 5.48% |

**Q. What about Palo Verde and Santa Cruz?**

A. Palo Verde and Santa Cruz do not have any long term debt. However, Global Water has agreed to impute the debt associated with the IDA bonds of Global Parent to Palo Verde and Santa Cruz. These IDA bonds are listed by series with the annual interest rate. The method weights the cost of each debt issuance by its percentage of the total debt

outstanding. Global Parent has obtained capital through bond issuances utilizing public IDA funds.

The cost of the IDA Bonds is as follows:

| Cost of Bond Debt Calculation | | | | |
|---|---|---|---|---|
| Bond Due Date | | Amount | Interest Rate | Weighted Debt |
| 12/1/2017 | $ | 6,910,000 | 5.45% | 0.33% |
| 12/1/2022 | $ | 6,215,000 | 5.60% | 0.30% |
| 12/1/2032 | $ | 23,370,000 | 5.75% | 1.17% |
| 12/1/2013 | $ | 1,635,000 | 5.50% | 0.08% |
| 12/1/2037 | $ | 52,500,000 | 6.55% | 2.99% |
| 12/1/2018 | $ | 1,315,000 | 6.38% | 0.07% |
| 12/1/2038 | $ | 23,235,000 | 7.50% | 1.51% |
| Total | $ | 115,180,000 | | 6.45% |

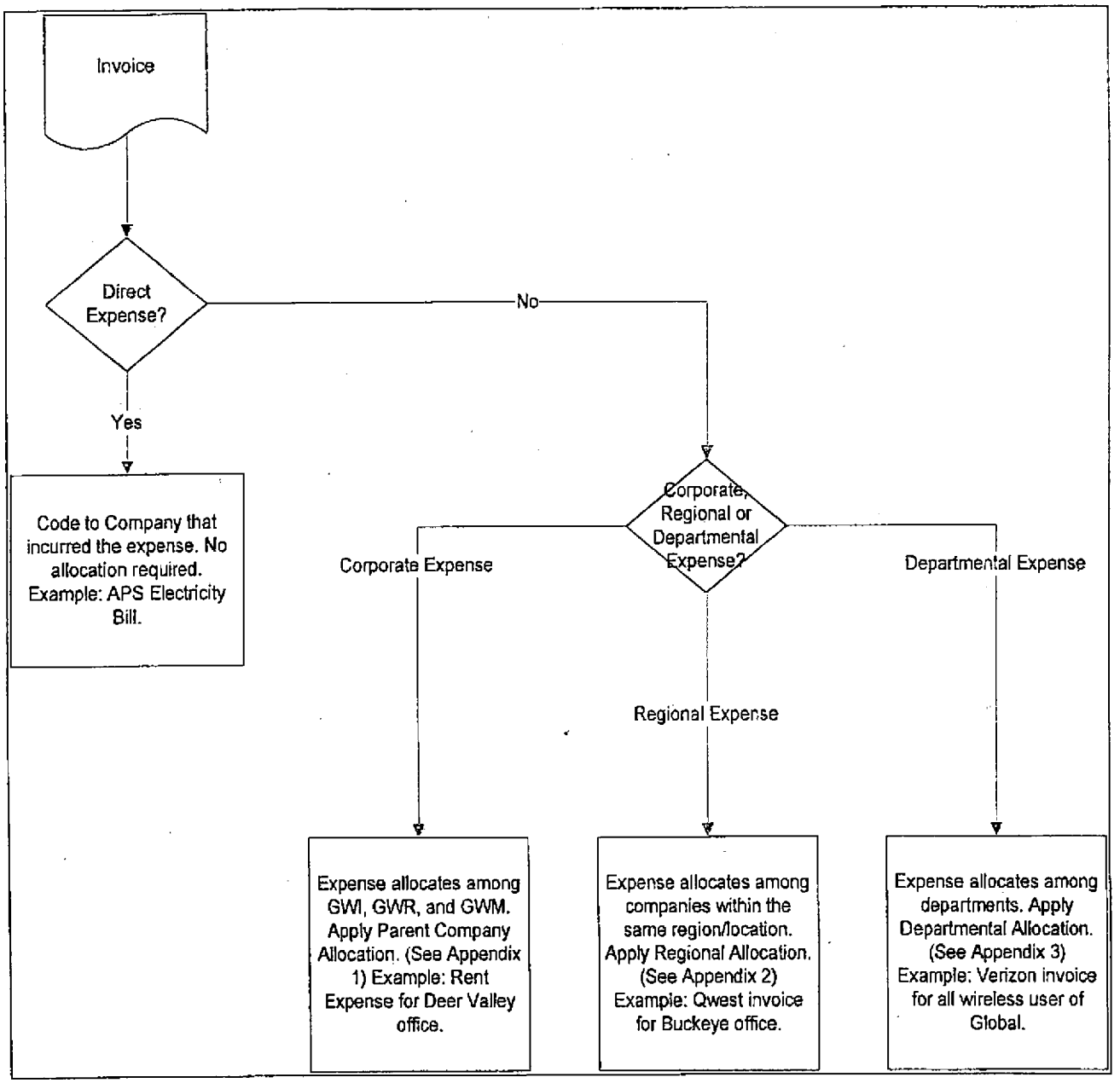
**Q. Does this conclude your direct testimony?**

A. Yes.

# Barber Exhibits

# Barber 1

## Life of an Invoice Flow Chart



# Barber 2

**GWM- PARENT COMPANY ALLOCATION**
**Appendix 1**

GWM Parent Company Allocation - The objective of this allocation is to allocate overhead expenses from GWM, GWI and GWR. Allocation percentages vary by account type and were developed with the input from senior management and based on experience using the Weighted Management, Payroll, and Revenue factors as well as an Average of those variables

| | | | | | MGMT & UTILITIES | EXEC & SEC FS | GROWTH/E&C |
|---|---|---|---|---|---|---|---|
| Description | Company | Account | Sub Account | Method | GWI | GWR | GWM |
| Emp Hiring & Moving | 101 | 80901 | 00-00 | Wgtd Mgmt | 12% | 55% | 33% |
| Emp Training & Certification | 101 | 80902 | 00-00 | Wgtd Mgmt | 12% | 55% | 33% |
| Contract Services Legal | 101 | 83507 | 00-00 | Payroll $ | 52% | 23% | 25% |
| Contract Services Other | 101 | 84507 | 00-00 | Payroll $ | 52% | 23% | 25% |
| Rent Expense Property | 101 | 85007 | 00-00 | Payroll $ | 52% | 23% | 25% |
| Rent Expense Equip | 101 | 85207 | 00-00 | Payroll $ | 52% | 23% | 25% |
| Transportation Exp | 101 | 86007 | 00-00 | People | 70% | 10% | 20% |
| Insurance Vechicle | 101 | 87107 | 00-00 | Revenue | 66% | 17% | 17% |
| Insurance General Liab | 101 | 87307 | 00-00 | Revenue | 66% | 17% | 17% |
| Insurance Worker's Comp | 101 | 87507 | 00-00 | Revenue | 66% | 17% | 17% |
| Insurance Fed Unemploy | 101 | 87509 | 00-00 | Revenue | 66% | 17% | 17% |
| Insurance State Unemploy | 101 | 87511 | 00-00 | Revenue | 66% | 17% | 17% |
| Other Taxes & Licenses | 101 | 93939 | 00-00 | Average | 62% | 18% | 20% |
| Travel Expense | 101 | 94022 | 00-00 | Wgtd Mgmt | 12% | 55% | 33% |
| Meals Expense | 101 | 94023 | 00-00 | Wgtd Mgmt | 12% | 55% | 33% |
| Uniforms | 101 | 94025 | 00-00 | Average | 62% | 18% | 20% |
| Postage & Mailing | 101 | 94028 | 00-00 | Average | 62% | 18% | 20% |
| Payroll Fees | 101 | 94031 | 00-00 | Average | 62% | 18% | 20% |
| Cash Short/Over | 101 | 94033 | 00-00 | Average | 62% | 18% | 20% |
| Communications Expense | 101 | 94038 | 00-00 | Revenue | 66% | 17% | 17% |
| Dues & Subscriptions | 101 | 94041 | 00-00 | Average | 62% | 18% | 20% |
| Promotions & Advertising | 101 | 94043 | 00-00 | Payroll | 52% | 23% | 25% |
| Employee Relations | 101 | 94045 | 00-00 | Average | 62% | 18% | 20% |
| Professional Fees Legal | 101 | 94203 | 00-00 | Payroll $ | 52% | 23% | 25% |
| Computer Repair & Maint | 101 | 94401 | 00-00 | Average | 62% | 18% | 20% |
| Equipment Maintenance | 101 | 94405 | 00-00 | Average | 62% | 18% | 20% |
| Office Supplies Misc | 101 | 94409 | 00-00 | Average | 62% | 18% | 20% |
| Kitchen Supplies | 101 | 94412 | 00-00 | Average | 62% | 18% | 20% |
| Bank Service Charges | 101 | 94501 | 00-00 | Average | 62% | 18% | 20% |
| Credit Card Fees | 101 | 94502 | 00-00 | Average | 62% | 18% | 20% |

REGIONAL AL ATION
Appendix 2

REGIONAL ALLOCATION - The objective of this allocation is to assign general and administrative (G&A) expenses which are not direct cost to a specific utility company but benefit a specific region as a whole. All invoices under this category will be coded to GWM and then allocated from GWM to individual utility companies by the GL system, based on the pre-defined regional allocation percentages. Global Water establishes these percentage to allocate expenses to the Global Utilities on a combination of connection counts, management experience and judgement.

06 - West Valley allocation to WUNS, WUGT, WUGB, and VWC
07 - Maricopa Region allocation to SC and PV
08 - Willow Valley allocation

| Account Description | Company | Account | Sub Account | SC | PV | Valencia | WUNS | WUGT | WUGB | Willow |
|---|---|---|---|---|---|---|---|---|---|---|
| Emp Hiring & Moving | 101 | 80901 | 61-07 | 50.00% | 50.00% | | | | | |
| Emp Training & Certification | 101 | 80902 | 61-07 | 50.00% | 50.00% | | | | | |
| Contract Services Labor | 101 | 83907 | 61-07 | 50.00% | 50.00% | | | | | |
| Cleaning Services | 101 | 84504 | 61-07 | 50.00% | 50.00% | | | | | |
| Transportation Expense | 101 | 86007 | 61-07 | 50.00% | 50.00% | | | | | |
| Travel Expense | 101 | 94022 | 61-07 | 50.00% | 50.00% | | | | | |
| Meals Expense | 101 | 94023 | 61-07 | 50.00% | 50.00% | | | | | |
| Uniforms | 101 | 94025 | 61-07 | 50.00% | 50.00% | | | | | |
| Postage & Mailing | 101 | 94028 | 61-07 | 50.00% | 50.00% | | | | | |
| Communication Expense | 101 | 94038 | 61-07 | 50.00% | 50.00% | | | | | |
| Employee Relations | 101 | 94045 | 61-07 | 50.00% | 50.00% | | | | | |
| Office Supplies Misc | 101 | 94409 | 61-07 | 50.00% | 50.00% | | | | | |
| Kitchen Supplies | 101 | 94412 | 61-07 | 50.00% | 50.00% | | | | | |
| Emp Hiring & Moving | 101 | 80901 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Emp Training & Certification | 101 | 80902 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Contract Services Labor | 101 | 83907 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Cleaning Services | 101 | 84504 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Transportation Expense | 101 | 86007 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Travel Expense | 101 | 94022 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Meals Expense | 101 | 94023 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Uniforms | 101 | 94025 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Postage & Mailing | 101 | 94028 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Communication Expense | 101 | 94038 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Employee Relations | 101 | 94045 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Office Supplies Misc | 101 | 94409 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Kitchen Supplies | 101 | 94412 | 61-06 | | | 74.80% | 1.10% | 10.60% | 13.50% | |
| Emp Hiring & Moving | 101 | 80901 | 61-08 | | | | | | | 100.00% |
| Emp Training & Certification | 101 | 80902 | 61-08 | | | | | | | 100.00% |
| Contract Services Labor | 101 | 83907 | 61-08 | | | | | | | 100.00% |
| Cleaning Services | 101 | 84504 | 61-08 | | | | | | | 100.00% |
| Transportation Expense | 101 | 86007 | 61-08 | | | | | | | 100.00% |
| Travel Expense | 101 | 94022 | 61-08 | | | | | | | 100.00% |
| Meals Expense | 101 | 94023 | 61-08 | | | | | | | 100.00% |
| Uniforms | 101 | 94025 | 61-08 | | | | | | | 100.00% |
| Postage & Mailing | 101 | 94028 | 61-08 | | | | | | | 100.00% |
| Communication Expense | 101 | 94038 | 61-08 | | | | | | | 100.00% |
| Employee Relations | 101 | 94045 | 61-08 | | | | | | | 100.00% |
| Office Supplies Misc | 101 | 94409 | 61-08 | | | | | | | 100.00% |
| Kitchen Supplies | 101 | 94412 | 61-08 | | | | | | | 100.00% |

Departmental [illegible]tion
Appendix 3

DEPARTMENTAL EXPENSE ALLOCATION - The objective of the Departmental allocation is to assign G&A expenses from employee expense reports, purchasing cards or departmental purchases to the department that benefited from the purchase or service. The allocation percentages are based on total company, total region and total regional office customer counts, management experience and judgment. These expense allocation percentages are reduced and allocated to GWM and GWR when portions of the expense benefit them.

| Department Description | Dept# | GWM | SC | PV | Valencia | WUNS | WUGT | WUGB | Willow | GWR | WMC | Explanation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AP & Cash Mgmt | 41-00 | 35.00% | 18.00% | 18.00% | 5.85% | 0.45% | 0.45% | 0.45% | 1.80% | 20.00% | | Department responsibilities include all utility operations and growth, and executive management functions |
| Accounting | 42-00 | 35.00% | 18.00% | 18.00% | 5.85% | 0.45% | 0.45% | 0.45% | 1.80% | 20.00% | | Department responsibilities include all utility operations and growth, and executive management functions |
| Facilities & Admin | 48-00 | 35.00% | 18.00% | 18.00% | 5.85% | 0.45% | 0.45% | 0.45% | 1.80% | 20.00% | | Department responsibilities include all utility operations and growth, and executive management functions |
| Human Capital | 51-00 | 35.00% | 18.00% | 18.00% | 5.85% | 0.45% | 0.45% | 0.45% | 1.80% | 20.00% | | Department responsibilities include all utility operations and growth, and executive management functions |
| Information Technology | 53-00 | 35.00% | 18.00% | 18.00% | 5.85% | 0.45% | 0.45% | 0.45% | 1.80% | 20.00% | | Department responsibilities include all utility operations and growth, and executive management functions |
| Billing & Collections | 44-00 | | 40.00% | 40.00% | 13.00% | 1.00% | 1.00% | 1.00% | 4.00% | | | Department exists to serve and support all utility customers |
| Customer Service | 44-00 | | 40.00% | 40.00% | 13.00% | 1.00% | 1.00% | 1.00% | 4.00% | | | Department exists to serve and support all utility customers |
| Customer Service - Maricopa | 44-07 | | 50.00% | 50.00% | | | | | | | | Department is responsible for customer service for Maricopa Regional office only |
| Maintenance - Maricopa | 54-07 | | 50.00% | 50.00% | | | | | | | | Department is responsible for maintenance for Maricopa Regional office only |
| Management - Maricopa | 56-07 | | 50.00% | 50.00% | | | | | | | | Department is responsible for management for Maricopa Region |
| Operations - Maricopa | 61-07 | | 50.00% | 50.00% | | | | | | | | Department is for operations for Maricopa Regional office only |
| Customer Service - West Valley | 44-06 | | | | 82.91% | 1.22% | 5.87% | 10.00% | | | | Department is for customer service for Buckeye Regional office only |
| Maintenance - West Valley | 54-06 | | | | 82.91% | 1.22% | 5.87% | 10.00% | | | | Department is responsible for maintenance for Buckeye Regional office only |
| Operations - West Valley | 61-06 | | | | 82.91% | 1.22% | 5.87% | 10.00% | | | | Department is for operations for Buckeye Regional office only |
| Compliance & In Service Insp | 46-00 | 35.00% | 26.00% | 26.00% | 8.45% | 0.65% | 0.05% | 0.65% | 2.60% | | | Department responsibilities include all utility operations and growth |
| Management - West Valley | 56-06 | | | | 68.75% | 1.00% | 4.75% | 8.00% | 18.50% | | | Department is responsible for management for West Valley Region (including Willow) |
| Admin | 43-05 | | | | | | | | | 100.00% | | Department primarily supports executive management team and Support Office |
| Business Development | 49-05 | | | | | | | | | 100.00% | | Department primarily supports executive management team and Support Office |
| C-Suite & SVPs | 56-05 | | | | | | | | | 100.00% | | Department consists of executive management team |
| SEC & Financial | 56-05 | | | | | | | | | 100.00% | | Department consists of executive management team |
| Lab Services | 71-00 | | | | | | | | | 100.00% | | Department primarily supports executive management team, Support Office with unregulated activities |
| Customer Service - Willow Valley | 44-08 | | | | | | | | 100.00% | | | Department is for customer service for Willow Valley Regional office only |
| Operations - Willow Valley | 61-08 | | | | | | | | 100.00% | | | Department is for operations for Willow Valley Regional office only |
| Asset Mgmt | 47-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| Capital Program | 47-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| E&C Mgmt | 47-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| Growth & Development Svcs | 49-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| Growth Services Support | 49-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| Inspection Services | 52-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| Utility Mgmt Support | 56-00 | 100.00% | | | | | | | | | | Department is responsible for management of Growth and E&C activities |
| Permitting & Reg Reporting | 57-00 | 100.00% | | | | | | | | | | Department is responsible for Growth and E&C activities |
| Unregulated Services | 58-00 | | | | | | | | | | 100.00% | Department primarily supports executive management team, Support Office with unregulated activities |
| Water Operations | 61-00 | | 100.00% | | | | | | | | | Department is responsible for Santa Cruz water operations only |
| Wastewaste Operations | 59-00 | | | 100.00% | | | | | | | | Department is responsible for Palo Verde waste water operations only |

# EXHIBIT A-21

**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

| | |
|---|---|
| IN THE MATTER OF THE APPLICATION OF GLOBAL WATER – PALO VERDE UTILITIES COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES FOR UTILITY SERVICE DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTY THROUGHOUT THE STATE OF ARIZONA. | DOCKET NO. SW-03575A-09- |

Direct Testimony

of

Jamie Moe

February 20, 2009

EXHIBIT
A-21
ADMITTED

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## I. Introduction.

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

A. My name is Jamie Moe. I am a regulatory accountant employed by Global Water Management, LLC "Global Management. My business address is 21410 North 19th Avenue #201, Phoenix, Arizona 85027. For the purposes of this testimony, "Global Water", "Global Utilities", "Global Parent" and "Global Management" have the same definitions given in Mr. Hill's testimony.

**Q. Briefly describe your responsibilities as a regulatory accountant.**

A. I analyze and examine accounting, financial, statistical and other information and prepare reports based on my analysis. My main responsibilities include monthly accounting entries, preparation of CC&N applications and rate cases, assistance in regulatory matters, and input related to regulatory accounting issues.

**Q. Please describe your educational background and professional experience.**

A. In 2000, I graduated from North Dakota State University, receiving a Bachelor of Science degree in Accounting, and I am a Certified Public Accountant with the North Dakota State Board of Accountancy. I have attended various seminars and classes on general regulatory and business issues, including the National Association of Regulatory Commissioners ("NARUC") Annual Regulatory Studies Program and the NARUC Utility Rate School.

I began employment with Global Water Management in April 2007. Previously, I worked for Honeywell as a Senior Project Accountant in their Aerospace Division. Prior to that, my regulatory experience includes employment by the Arizona Corporation Commission ("Commission") as a Public Utilities Analyst from January 2003 through

October 2006. My main duties as a Public Utilities Analyst included reviewing, auditing and analyzing utility financial and accounting information and presenting recommendations to the Commission on behalf of Staff regarding revenue requirements, rate design and other matters. As a Public Utilities Analyst, I testified before the Commission in a number of rate cases and other proceedings.

**Q. What topics does your testimony address?**

A. My testimony will support the Global Utilities' adjustments to revenues and expenses as well as the requests for rate pass-throughs mechanisms, as follows:

- Distributed Renewable Energy Recovery Tariff;
- Central Arizona Groundwater Replenishment District (CAGRD) Fee Pass-Through;
- Franchise Fee Pass-Through; and
- Property Tax Pass-Through.

## II. Adjustment to Test Year Revenues and Expenses.

**Q. Please explain Income Statement Adjustment 1 – Elimination of Unbilled Revenues and Other Accounting Entries.**

A. Income statement adjustment 1, as shown on page 2 of Schedule C-2, removes the effect of the accounting requirement to accrue revenues earned, but not yet billed. Each utility makes this entry monthly. The net effect of the December 2007 and December 2008 entries are removed from the operating income by this adjustment. In addition, other accounting entries unrelated to customer bill counts have been removed to reconcile customer bill counts to actual revenues. The adjustment to revenues for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $102,160 |
| Palo Verde | 38,508 |
| Valencia – Town Division | (9,187) |
| Valencia –Greater Buckeye Division | 1,501 |
| WUGT | 2,404 |
| Willow Valley | (2,467) |

**Q. Please explain Income Statement Adjustment 2 – Adjustment to Miscellaneous Revenues.**

A. Income statement adjustment 2, as shown on page 3 of Schedule C-2, affects two utilities, Santa Cruz and Valencia. The Santa Cruz adjustment removes meter sales to the 387 Domestic Water Improvement District, prior to its transfer to Santa Cruz's CC&N. The Valencia adjustment removes a refund received from APS related to 2006. Income statement adjustment 2 for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $(145,739) |
| Palo Verde | N/A |
| Valencia – Town Division | (31,628) |
| Valencia – Greater Buckeye Division | N/A |
| WUGT | N/A |
| Willow Valley | N/A |

**Q. Please explain Income Statement Adjustment 3 – Annualize Revenue and Expense to Reflect End-of-Test Year Customer Counts.**

A. Income statement adjustment 3, as shown on page 4 of Schedule C-2, adjusts revenues and expenses to reflect the number of customers served by each utility on December 31, 2008. The adjustment to revenues is the difference between the revenues generated by the Test Year bill count, and a pro forma bill count that reflects the number of residential

and commercial customers served on December 31, 2008. In addition, pro forma construction water customer counts have been removed, as changes in the economy have resulted in construction moving towards zero. The revenue portion of income statement adjustment 3 for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $(299,141) |
| Palo Verde | (122,612) |
| Valencia – Town Division | (143,041) |
| Valencia – Greater Buckeye Division | (43,655) |
| WUGT | (23,955) |
| Willow Valley | (6,172) |

A decrease in purchased power and water treatment expense is also calculated based upon the estimated reduction in gallons to be sold resulting from the change in year-end customer counts. The expense portion, related to purchased power and chemical expense, of income statement 3 for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $(18,284) |
| Palo Verde | (9,505) |
| Valencia – Town Division | (24,879) |
| Valencia – Greater Buckeye Division | (6,710) |
| WUGT | (4,377) |
| Willow Valley | (641) |

**Q. Please explain Income Statement Adjustment 4 – Adjustment to Employee Salaries and Wages and Benefits.**

A. Income Statement Adjustment 4, as shown on page 5 of Schedule C-2, reduces employee salaries and wages and benefits. In this difficult economy, the utilities have been

proactive in trying to minimize costs where possible, and have made reductions to their staff in an effort to cut costs. The adjustment to expense for each utility as follows:

| | |
|---|---|
| Santa Cruz | $(141,989) |
| Palo Verde | (141,989) |
| Valencia – Town Division | (40,859) |
| Valencia – Greater Buckeye Division | (3,143) |
| WUGT | (3,143) |
| Willow Valley | (32,006) |

**Q. Please explain Income Statement Adjustment 5 – Adjustment to Purchased Power Expense.**

A. Income statement adjustment 5, as shown on page 6 of Schedule C-2, adjusts purchased power to reflect the most recent known and measurable changes from each utility's power providers. Santa Cruz and Palo Verde are served by Electric District No. 3 of Pinal County, and have received notice of 12.5% increase to its commercial and industrial rates. Valencia, WUGB and WUGT are served by APS, and the estimated increase in purchased power is 3.4%. Willow Valley has not received notice of any upcoming rate increase to date. The adjustment to expense for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $63,445 |
| Palo Verde | 66,886 |
| Valencia – Town Division | 10,127 |
| Valencia – Greater Buckeye Division | 888 |
| WUGT | 581 |
| Willow Valley | N/A |

**Q. Please explain Income Statement Adjustment 6 – Adjustment to Advertising Expense.**

A. Income statement adjustment 6, as shown on page 7 of Schedule C-2, removes advertising expense from the utilities. The adjustment to expense for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $(1,825) |
| Palo Verde | (256) |
| Valencia – Town Division | (123) |
| Valencia – Greater Buckeye Division | (336) |
| WUGT | (17) |
| Willow Valley | (578) |

**Q. Please explain Income Statement Adjustment 7 – Adjustment to Rate Case Expense.**

A. Income statement adjustment 7, as shown on page 8 of Schedule C-2, adjusts expenses to allow for the recovery of costs for this rate case. The current estimate of total rate case costs is $400,000, amortized over 3 years for an annual total of $133,333. The allocation of rate case expense is based on the cost allocation methodology described in Mr. Barber's testimony, with the percentage allocation to each utility listed below. The adjustment to expense for each utility for rate case expense is as follows:

| | |
|---|---|
| Santa Cruz – 40% | $53,333 |
| Palo Verde – 40% | 53,333 |
| Valencia – Town Division – 14% | 18,667 |
| Valencia – Greater Buckeye Division – 1% | 1,333 |
| WUGT – 1% | 1,333 |
| Willow Valley – 4% | 5,333 |

**Q. Please explain Income Statement 8 – Adjustment to Bad Debt Expense.**

A. Income statement adjustment 8, as shown on page 9 of Schedule C-2, adjusts bad debt expense to a level of one percent to adjusted Test Year revenues. It also takes into account on the Global Utilities' proposed revenues. This adjustment to expense for each utility is as follows:

| | Adjusted TY | Proposed |
|---|---|---|
| Santa Cruz | $4,657 | $30,816 |
| Palo Verde | (30,477) | 84,923 |
| Valencia – Town Division | (14,025) | 16,646 |
| Valencia – Greater Buckeye Division | (750) | 1,557 |
| WUGT | 142 | 6,772 |
| Willow Valley | 885 | 4,993 |

**Q. Please explain Income Statement Adjustment 9 – Adjustment to Depreciation Expense.**

A. Income statement adjustment 9, as shown on page 10 of Schedule C-2, adjusts depreciation expense to reflect an expense level reflective of each utility's utility plant in service as of December 31, 2008. In addition, each utility proposes to implement the water and wastewater depreciation rates typically proposed by ACC Staff. This adjustment to depreciation expense for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $75,498 |
| Palo Verde | 258,362 |
| Valencia | 1,064,639 |
| WUGB | 18,239 |
| WUGT | 104,692 |
| Willow Valley | 59,013 |

**Q. Please explain Income Statement Adjustment 10 – Adjustment for Pass-Through of ACC and RUCO Annual Assessments.**

A. Income statement adjustment 10, as shown on page 11 of Schedule C-2, adjusts expenses to remove ACC and RUCO fees which were expensed prior to each utility's implementation of the pass-through of these fees. This adjustment to expense for each utility is as follows:

| | |
|---|---|
| Santa Cruz | $(53,078) |
| Palo Verde | (25,049) |
| Valencia | (12,644) |
| WUGB | N/A |
| WUGT | N/A |
| Willow Valley | (2,480) |

**Q. Please explain Income Statement Adjustment 11 – Adjustment for Pass-Through of Property Taxes.**

A. Income statement adjustment 11, as shown on page 12 of Schedule C-2, removes property tax expense, as the utilities are requesting pass-through treatment of property tax expense. This proposal is discussed in greater detail later in this testimony. This adjustment to expense for each utility is as follows:

| | |
|---|---|
| Santa Cruz | (423,523) |
| Palo Verde | (280,397) |
| Valencia | (118,368) |
| WUGB | (15,527) |
| WUGT | (7,143) |
| Willow Valley | (21,324) |

If the pass-through of property taxes is disallowed, these totals need to be added back into each utility's expenses and recalculated for proposed revenue levels.

**Q. Please explain Income Statement Adjustment 12 – Adjustment to Income Tax Expense.**

A. Income statement adjustment 12, as shown on page 13 of Schedule C-2, adjusts Federal and state income taxes to reflect the tax effect of all other pro forma adjustments and the required increase in gross revenues on net income. Income statement adjustment 12 adjusts Test Year income tax expense for each utility as follows:

| | Adjusted TY | Proposed |
|---|---|---|
| Santa Cruz | $313,833 | $1,177,585 |
| Palo Verde | 340 | 3,245,144 |
| Valencia | (461,245) | 636,091 |
| WUGB | (19,591) | 59,486 |
| WUGT | (65,923) | 258,792 |
| Willow Valley | (31,480) | 190,800 |

## III. Distributed Renewable Energy Recovery Tariff.

**Q. Please explain the Global Utilities' position towards renewable energy and conservation.**

A. The Global Utilities place a priority on conservation, whether it is related to water or energy. Our efforts with water conservation and reuse are well documented. But the Global Utilities strive to continually reach greater heights in sustainable business practices and operations. We continually work to sign customers up for our Green Billing program, which provides paperless billing to customers. And now moving another step forward, the Global Utilities are moving towards the integration of renewable energy, including solar

energy, into its system within the first or second quarter of 2009. The Global Utilities believe this focus also works towards the goals approved by the Commission through the Renewable Energy Standard Tariff ("REST"). Because of this, the Global Utilities request the approval of a Distributed Renewable Energy Recovery Tariff.

**Q. Why do the Global Utilities request a Distributed Renewable Energy Recovery Tariff?**

A. The Global Utilities will have built and will operate numerous water and wastewater facilities at build-out. Due to the setback requirements described in AAC R18-9-B201, much of the property required for water reclamation facilities is not used in the treatment process. As it cannot be used for development, it makes sense to use this area for additional benefit to the ratepayers – in this case, for the production of renewable distributed power generation.

Simply put, we have empty land right next to a high electrical demand. It doesn't take a lot of thought to recognize what should be done: solar panels should be emplaced at every wastewater facility, offsetting demand and generating renewable energy.

The costs, however, are significant and the use of renewable energy sources has not been embraced by the water and wastewater industries; in such circumstances we believe that the Commission should incent the practice of distributed power generation by allowing Global to utilize an approach similar to the arsenic cost recovery mechanisms ("ACRM") the Commission has approved for the development of arsenic treatment facilities.

**Q. Please explain how the Distributed Renewable Energy Recovery Tariff works.**

A. The methodology behind the Distributed Renewable Energy Recovery Tariff would be similar to that of the Arsenic Cost Recovery Mechanism approved by the Commission in

recent proceedings. After the utility completes construction on its renewable energy plant, it would file an application detailing the cost of the plant, the technical specifications of the plant's operational characteristics and capacities, and its related expenses. Through the application, the utility would request recovery of a return on the plant, depreciation expense and related expenses. As with the ACRM surcharge methodology, the renewable energy surcharge would consist of a monthly minimum and commodity charge component.

**Q. Please explain what sort of projects would qualify for treatment under the Distributed Renewable Energy Recovery Tariff.**

A. The Global Utilities propose that only projects that utilize technologies which qualify as renewable under the Commission's REST rules be allowed treatment under the Distributed Renewable Energy Recovery Tariff.

**Q. If a solar panel is installed at a utility's location it will result in less electricity being purchased and thus in lower expenses for the utility. The Distributed Renewable Energy Recovery Tariff will allow for accelerated recovery of the cost of installing the solar panel but will it also provide a credit to customers associated with the decreased power purchasing expense?**

A. Absolutely. As part of our filing to set the initial surcharge rate, we will include the technical specifications on the plant's operational capacity and capability. Annually we will make a filing at the Commission that shows year-on-year, month-by-month comparisons of electricity demand and water pumped, treated and distributed. Gallons divided by kWh purchased from the electric utility should show us an efficiency average; the current average is approximately 410,000 kWh/month at 2.1 MGD. That calculates to 6.5 kWh/1000 gallons of wastewater treated. Each year we can assess the efficacy of the program and if the projects work as expected, the Global Utilities will see reduced purchased power per gallon. If electric rates stay stable, we could reduce power expenses

annually and save customers money. If electric rates increase, our ratepayers will be shielded from some of those increased costs. And in any case, our environment will benefit by reducing electricity generated from traditional sources and furthering the promise of solar energy.

Since we are asking for accelerated recovery of the return on and depreciation expense associated with renewable energy projects we believe it is fair that our customers receive accelerated recognition of the benefit of renewable distributed generation. To that end, for projects emplaced at Global Utilities facilities that are currently operational, the proposed tariff will be credited by an amount designed to capture the reduction in purchased power expenses. For example, we currently intend to install a 750 kW to 1 MW solar facility at the Global Water – Palo Verde Utilities Company Campus 1 Water Reclamation Facility (discussed in more detail below.) At 750 kW, we estimate that it will generate 1,500,000 kWh per year and reduce our peak demand by 25%. This would result in a total purchased power savings of $61,000. This amount would be deducted from the return and expenses passed through the tariff mechanism.

**Q. Please provide an example of how the surcharge would work.**

A. As an example, consider the installation of 750 kW of renewable power at a water reclamation facility at a cost of $2,000,000. Applying a hypothetical rate of return of 10% to the investment, the utility would be entitled to earn a return of $200,000. Additionally, applying a depreciation rate of 5% to this investment yields a depreciation expense of $100,000.[1] This provides a total of $300,000 annually. Over a customer base of 15,000 units, that would equate to $20 per year per connection. However, as explained above the reduction in purchased power expense ($61,000) will be backed off this amount to provide

[1] 5% is the NARUC recommended depreciation rate for power generation equipment (account 355.)

a total of $239,000. Over a customer base of 15,000 units, that would equate to $15.93 per year per connection. As you can see, the power savings accrue entirely to the benefit of the customer; and as noted before, if electric rates increase solar power shields customers from a portion of that increase passing through their water and wastewater bills.

**Q. You mentioned above that the reduction in purchased power expense will be backed off of the adjustor for projects emplaced at Global facilities that *are currently operational.* Why not also make this adjustment for projects emplaced at facilities that are not currently operational.**

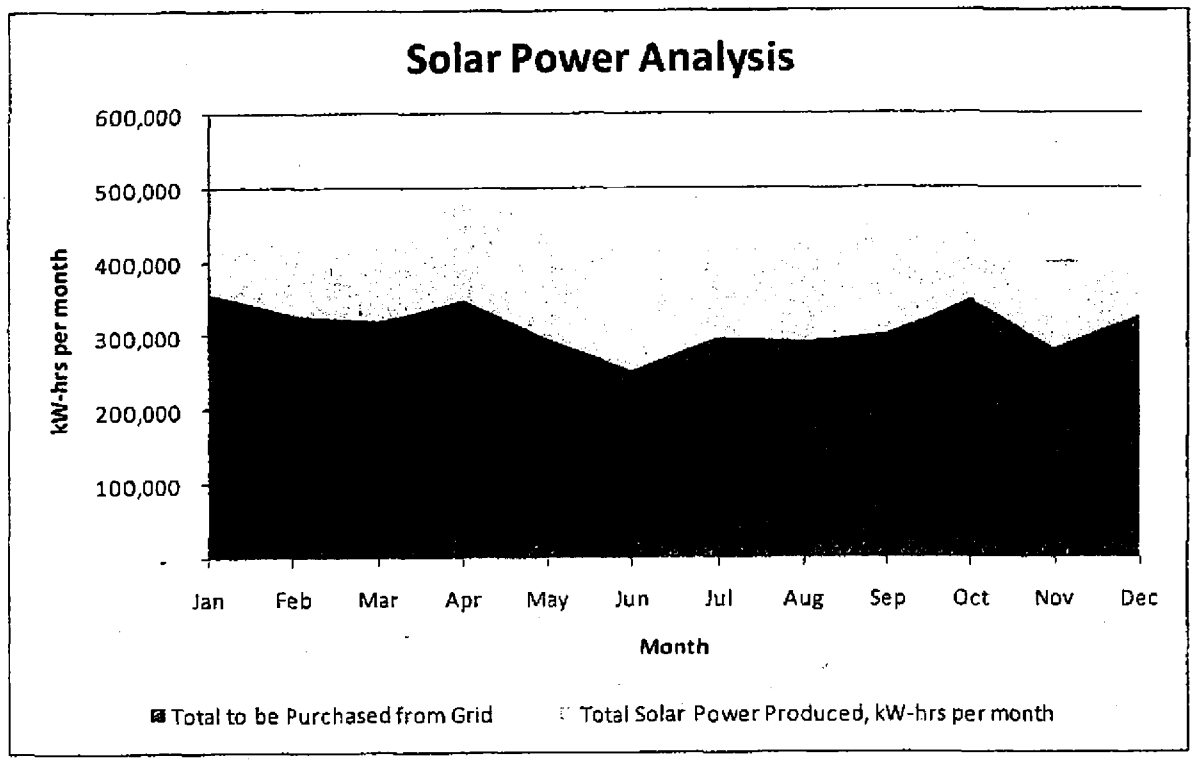
A. In operating facilities where renewable energy systems are installed, there is a potential for direct reduction of purchased power expenses. As those purchased power expenses are already included in the rate calculations, it makes sense to reduce those expenses for the benefit of the ratepayers.

At installations that are constructed after the approval of rates, there are no purchased power expenses built into the rates, and hence the purchased power expenses for the utility do not decrease. In this case, the utility would include the application for approval of the Distributed Renewable Energy Recovery Tariff including the unadjusted depreciation and return on equity amounts.

**Q. Can you provide an example of a renewable energy project that is under consideration?**

A. Yes. We are currently working to develop a *Renewable Water with Renewable Energy* Program. Under this program we intend to install photovoltaic panels in the setback area of the Global Water – Palo Verde Utilities Company Campus 1 Water Reclamation Facility. The initial phase of this program is anticipated to be a $1.5 million to $2.0 million installation capable of providing 750 kW to 1 MW of solar power. This represents

a production of over 1,500,000 kWh of power annually, and approximately 25% of the annual power consumption of the Water Reclamation Facility (WRF) today.




**Q. Why are renewable energy projects especially beneficial for water and wastewater utilities?**

A. The water and wastewater business is a highly energy intensive business, so use of renewable energy is especially appropriate in this sector. The simple fact is that water is very heavy, so it takes a lot of energy to move it around. For example, think of a well that must pump water from up to 1,000 feet below ground to the surface. Each gallon of water weighs more than 8 pounds. And some wells can produce several thousand gallons per minute. So the total weight lifted per day by such a well is really quite enormous. Likewise, water treatment, and wastewater treatment are also energy intensive.

In addition, water and wastewater treatment facilities are critical facilities that must remain in operation. Because power from the "grid" is not always available, these facilities typically have backup diesel generators. Such generators are essential, but are also inefficient and polluting. Adding renewable energy to these facilities reduces their reliance on the grid; this provides additional reliability as well as reducing the possibility that backup diesel generators would have to run in the event of a power outage.

**Q. Why should the Commission approve the Distributed Renewable Energy Recovery Tariff?**

A. By passing the REST, the Commission has encouraged the future construction of renewable energy plant throughout Arizona, and the Commission has made a statement about the importance of such projects to the future of our state. The Global Utilities believe that conservation, both energy and water related, is a social responsibility of all citizens, individual and corporate alike.

However, without the proper incentives, many environmentally responsible projects are cost prohibitive. The approval of the Distributed Renewable Energy Recovery Tariff is in the public interest, and should be available to all water and wastewater utilities, not solely the Global Utilities. Approval of the Distributed Renewable Energy Recovery Tariff allows for the timely recovery of costs for utilities, encouraging them to invest in the renewable energy technologies so important to Arizona. By using an approach, these investments could occur outside the cost burden and delayed timing of a rate case. The Distributed Renewable Energy Recovery Tariff will provide a real incentive for water and wastewater companies to invest in distributed renewable energy projects.

**Q. Do you have more information on the benefits of renewable energy for water and wastewater utilities?**

A. Yes. A paper by Mr. Symmonds explaining the benefits in greater detail is attached to his testimony.

## IV. CAGRD Fee Pass Through.

**Q. What is the Central Arizona Groundwater Replenishment District or CAGRD?**

A. It is established under Arizona law to replenish groundwater in central Arizona. It is a department (not a separate district) within the Central Arizona Water Conservation District, commonly known as CAP.[2] It is governed by CAP's board of directors. It covers CAP's three county service area (Maricopa, Pinal and Pima counties). However, landowners or service providers must enroll their lands within the CAGRD to participate in the CAGRD program. The CAGRD program is designed to assist with compliance with Arizona's assured water supply rules.

**Q. What does CAGRD do?**

A. At the most basic level, it collects fees from landowners or water service providers, and then uses those fees to purchase water (such as excess surface water, or recycled water), and it then injects the water into the ground. This compensates for groundwater withdrawals.

**Q. Why not directly use the water CAGRD purchases?**

A. Often, CAGRD lands do not have access to surface water such as CAP water. In addition, some water purchased by CAGRD may not be suitable for direct potable use.

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[2] http://www.cagrd.com/static/index.cfm?contentID=84

**Q. Who must pay CAGRD fees?**

A. All CAGRD members pay a certain amount per acre-foot annually according to a rate determined each year by the CAGRD. The rate is computed separately for each Active Management Area (AMA) to offset the projected costs of replenishment activities in the AMA, and is based on the four assessment rate components shown in the table below:

| Assessment Rate Components | Cost Basis |
|---|---|
| Administrative* | Total cost of administering the CAGRD |
| Water & Replenishment** | Cost to purchase, transport and recharge/replenish water supplies |
| Infrastructure & Water Rights** | Costs of securing water rights and developing infrastructure to deliver and replenish water, including capital costs |
| Replenishment Reserve Charge** | Costs to establish and maintain a replenishment reserve for each AMA |

*Uniform across AMAs
**Computed separately for each AMA

Each Member Service Area provider reports annually the volume of excess groundwater[3] it has delivered within its service area and pays, directly to the CAGRD, a tax equal to the AMA replenishment assessment rate multiplied by that volume of excess groundwater. When an individual subdivision joins as a Member Land, the owner executes an irrevocable "declaration of covenants, conditions, and restrictions" that obligates current and future owners (that is, individual homeowners) to pay for CAGRD replenishment based on the total volume of excess groundwater delivered to each parcel within the ML. The applicable parcel assessment appears on the property tax bill of each property owner within the ML.

[3] An amount of groundwater equal to that delivered to a member land or member service area in a calendar year in excess of the amount of groundwater that may be used at the member land or delivered by a municipal provider for use within its member service area in that calendar year consistent with the applicable AWS rules for the active management area where the member land or member service area is located (ARS §48-377.01).

So the fee structures are different for Member Lands and Member Service Areas. Member Lands are enrolled by the developer as part of obtaining a Certificate of Assured Water Supply (CAWS). Member Land fees are paid by each landowner as part of their property tax bill based on the gallons of water consumed.[4]

Member Service Areas fees apply to a designated provider. This fee applies to municipal or private utilities that enroll their service areas in the CAGRD. Such enrollment can be necessary, in some cases, to obtain a Designation of Assured Water Supply (DAWS). The CAGRD then collects the fee directly from the utility. Municipal utilities typically recover this fee in their rates, either as a separate "stand alone" fee on each bill, or as part of the general water service rate.

**Q. Please explain the pass-through of Central Arizona Groundwater Replenishment District fees.**

A. The CAGRD reviews operating and capital expenses annually, and determines fees based on those expenses. The CAGRD provides firm and pro-forma projections on these fees annually. These fees are shown in Attachment Moe-1. The Global Utilities propose that these fees be recovered as a pass-through expense, similar to sales tax expense, as it is a tax levied on actual consumption of water. The CAGRD rate would likewise be applied to the individual customer's consumption. Using the 2008/2009 Firm rates from CAGRD's website, the charges would be calculated as follows:

[4] Global Utilities have focused on obtaining DAWS and not CAWS for better water management planning. In the DAWS service areas, the individual customers are not subject to this CAGRD property tax assessment. Instead, the Global Utilities are taxed, not the customer.

| CAGRD 2008/2009 Firm Rates | | | |
|---|---|---|---|
| Phoenix AMA | $ | 290 | per acre foot |
| Pinal AMA | $ | 254 | per acre foot |
| Customer charge | | | |
| Phoenix AMA | $ | 0.89 | per 1,000 gallons |
| Pinal AMA | $ | 0.78 | per 1,000 gallons |

Currently, none of the Global Utilities are directly charged the CAGRD fees. However, WUGT is working on the completion of a Designation of Assured Water Supply ("DAWS"), and will become subject to direct CAGRD fees. Due to the benefits related to water conservation and regional planning of resources related to a DAWS, it is important that water utilities who elect to apply for a designation are provided this pass-through to help offset the costs.

**Q. Are there other CAGRD Fees?**

A. The CAGRD is currently proposing legislation that would establish bonding authority for the acquisition of water to meet its replenishment obligations. The proposal includes fees associated with the enrollment in the CAGRD based on the obligations undertaken by the CAGRD as a consequence of that enrollment – that is the bonds would be funded by fees assessed to designated providers.

**Q. If the bonding levy is passed should they also be passed through?**

A. In our opinion, these costs are related to the provision of capacity to the utilities and should be recovered as a pass through.

## V. Property Tax Pass Through.

**Q. Please explain the Global Utilities' position on Property Tax expense.**

A. The Global Utilities believe that property taxes have become an increasingly volatile expense and are concerned that this trend will continue given the current situation of the economy. Unfortunately, this is an expense that is outside of the Company's control.

State property taxes are collected by the Arizona Department of Revenue (ADOR) under authority of Arizona Revised Statutes. According to A.R.S. § 42-11002, all property in this state is subject to taxation except as provided in article IX, Constitution of Arizona, and article 3 of Chapter 11 of A.R.S. Title 42. Exemptions exist for a variety of business and operational types of property, but those exemptions do not extend to water and wastewater utilities. Taxation is based on classification of property:

**ARS § 42-12001**

For purposes of taxation, class one is established consisting of the following subclasses:

6. Real and personal property of water, sewer and wastewater utility companies that are valued at full cash value pursuant to section 42-14151.

**ARS § 42-14151**

A. The department shall annually determine the valuation, in the manner prescribed by this article, of all property, owned or leased, and used by taxpayers in the following businesses:
   1. Operation of a natural gas distribution system.
   2. Operation of a water utility system.
   3. Operation of a sewer system or wastewater treatment facility.
   4. Operation of an electric generation facility.
   5. Operation of an electric transmission or distribution system.

B. For the purposes of this article, "generation of electricity" means the process of taking a source of energy, including coal, natural gas, oil, nuclear fuel or renewable sources and converting the energy into electricity to be delivered to customers through a transmission and distribution system.

Full Cash Value is determined in accordance with ARS § 42-14153:

A. On or before August 31 of each year the department shall find the full cash value of the property of each property that is listed in section 42-14151 and that operates in this state.

B. On or before November 30 the department shall transmit to the respective county assessors:

   1. The valuations of these properties in each taxing district.
   2. An estimate of the net valuation of properties that are subject to voluntary contributions pursuant to section 48-242. The taxing jurisdiction shall use the estimate to estimate the amount of voluntary contributions to be received for the purpose of finalizing budget and property tax levies pursuant to chapter 17 of this title.

C. The valuations required by this section are the values determined as of January 1 of the valuation year.

Full Cash Value is defined in ARS § 42-11001 as follows:

> "Full cash value" for property tax purposes means the value determined as prescribed by statute. If no statutory method is prescribed, full cash value is synonymous with market value which means the estimate of value that is derived annually by using standard appraisal methods and techniques. Full cash value is the basis for assessing, fixing, determining and levying secondary property taxes. Full cash value shall not be greater than market value regardless of the method prescribed to determine value for property tax purposes.

In the case of water and sewer utilities, the state has determined that Full Cash Value is:

Full Cash Value = 2 x (Average Gross Revenue for 3 Years) + 10% of CWIP – Licensed Vehicles

(See Attachment Moe-2, Arizona Department of Revenue memorandum dated January 3, 2001). Property Taxes are computed by multiplying the Full Cash Value by the assessed valuation percentage (ARS § 42-15001) and further multiplying by the specific taxation rate in the tax district.

Property Taxes = FCV x Assessment x Property Rate

This formula calculates the following 2009 property taxes for the Global Utilities:

| | |
|---|---|
| SCWC | $423,523 |
| PVUC | $280,397 |
| VWC – Town Division | $118,368 |
| VWC – Greater Buckeye Division | $15,527 |
| WUGT | $7,143 |
| Willow Valley | $21,324 |

The wastewater rules specifically allow for recovery of taxes imposed upon the utility that are based on gross revenues:

AAC R14-2-608. Billing and collection

D. Applicable tariffs, prepayment, failure to receive, commencement date, taxes

> 5. In addition to the collection of regular rates, each utility may collect from its customers a proportionate share of any privilege, sales or use tax, or other imposition based on the gross revenues received by the utility.

On the basis of this rule, it is clear that property taxes for a wastewater utility, based as they are on gross revenues received by the utility, are recoverable directly from rate payers.

The ACC's water rules are slightly less clear, as they do not contain the additional phrase "or other imposition based on the gross revenues received by the utility."

AAC R14-2-409. Billing and collection

D. Applicable tariffs, prepayment, failure to receive, commencement date, taxes

> 5. In addition to the collection of regular rates, each utility may collect from its customers a proportionate share of any privilege, sales or use tax.

However, even under this rule, property tax should be considered a "privilege, sales or use tax" because property tax for water companies is based directly on the water sales, as described in ADOR's January 3, 2001 memorandum.

**Q. What do the Global Utilities propose for the treatment of Property Taxes?**

A. The Global Utilities propose that a property tax rate is calculated based upon the calculation of property taxes and estimated revenues, and applied to a customer's bill. Any over- or under-collection would be applied to subsequent year's calculation. I have provided a basic example to demonstrate the mechanics of the calculation.

Example:

| | | |
|---|---|---|
| Year 1 | | |
| Calculations | | |
| 2009 Property Tax | $ | 500,000 |
| 2009 Estimated Revenues | $ | 10,000,000 |
| 2009 Property Tax Rate | | 5.00% |
| | | |
| Year 2 | | |
| Calculations | | |
| 2009 Actual Revenues | $ | 10,250,000 |
| 2009 Property Tax Collected | $ | 512,500 |
| | | |
| Over/(Under) Collection | $ | 12,500 |
| 2010 Property Tax | $ | 550,000 |
| Amount to be Collected | $ | 537,500 |
| 2010 Estimated Revenues | $ | 10,500,000 |
| 2010 Property Tax Rate | | 5.12% |

Since any over- or under-collection is treated through the mechanism, the Global Utilities believe its proposal is in the interest to both ratepayers and shareholders.

## VI. Franchise Fee Pass Through.

**Q. Please explain the Public Private Partnership (P3) agreements signed by Global Parent.**

A. Global Water believes very strongly in developing good relationships with the communities served by the Global Utilities. This includes the need for cooperation with

the cities we serve. The P3s serve to formalize the close relationship we have developed with the Cities of Maricopa and Casa Grande. The P3s provide a number of benefits to both parties:

- Close cooperation on water conservation measures;
- Mutual exchange of development information, such as building permits, GIS data and water hook-ups;
- Coordination of Regional Planning;
- Coordination of the City's obligation under Arizona's Growing Smarter legislation;
- Emergency services co-ordination via SCADA (fire flow responses etc)
- Expedited processing of certain permits;
- A commitment to meet and discuss issues often; and
- Access to public streets rights of way.

**Q. How many P3s has Global Parent signed?**

A. Global Parent has P3s with the City of Maricopa, the City of Casa Grande and the City of Eloy.

**Q. How do the P3s relate to water conservation?**

A. One of the main reasons the cities signed the P3s was their deep concern about future water resources. They fully understood the benefits of integrated utilities that can provide state-of-the-art water conservation, such as the Global Utilities "Total Water Management" program. Indeed, the P3s provide for close cooperation on water conservation measures.

**Q. Please explain Global's proposed pass-through of Franchise fees.**

A. The P3 agreements allow the City of Maricopa and the City of Casa Grande (the "Cities") to facilitate and manage future growth in accordance with its obligations under the Growing Smarter legislation and Growing Smarter Plus legislation enacted into law by the Arizona Legislature. The Cities have identified land areas as their municipal planning areas ("MPA") as future annexations.

The P3 agreements have formalized the close relationship that the Global Utilities strive for with the communities they serve, and they have facilitated the cooperation and commitment of both the municipalities and the utilities to maximize water conservation within the MPAs. The P3s allow the Global Utilities access to Cities public rights-of-way and to work within the Cities MPA.

There are two components to the fees due under the P3s. The first fee is to be paid by Global Parent based on a set amount for each new meter hook-up. We are not proposing any rate treatment of that fee.

The second fee is a franchise-like fee based on water, wastewater and recycled water revenues earned within the cities' municipal planning areas. This franchise-like fee is specifically linked to the "operating/license agreement" that allows the Global Utilities to use the public rights of way. Because this franchise fee is based on gross revenues, it is like sales taxes, and it is therefore appropriate for a pass-through mechanism. If the ACC does not believe a pass through mechanism is appropriate, then expenses need to be increased for recovery.

**Q. Does this conclude your direct testimony?**

A. Yes.

# Moe Exhibits

# Moe 1

*Adopted: June 19, 2008*

# CENTRAL ARIZONA GROUNDWATER REPLENISHMENT DISTRICT FINAL 2008/09 AND 2009/10 RATE SCHEDULE

## ASSESSMENT RATES

Units = $/acre-foot

| | Historic 2007/08 | Firm 2008/09 | Firm 2009/10 | Advisory 2010/11 | 2011/12 | 2012/13 | 2013/14 |
|---|---|---|---|---|---|---|---|
| **Phoenix Active Management Area** | | | | | | | |
| Water & Replenishment Component [1] | $ 112 | $ 134 | $ 143 | $ 154 | $ 157 | $ 162 | $ 166 |
| Administrative Component [2] | 28 | 33 | 33 | 31 | 29 | 27 | 25 |
| Infrastructure & Water Rights Component [3] | 79 | 90 | 101 | 112 | 115 | 118 | 122 |
| Replenishment Reserve Charge [4] | 21 | 33 | 41 | 49 | 57 | 60 | 63 |
| Total Assessment Rate ($/AF) | $ 240 | $ 290 | $ 318 | $ 346 | $ 358 | $ 367 | $ 376 |
| **Pinal Active Management Area** | | | | | | | |
| Water & Replenishment Component [1] | $ 87 | $ 100 | $ 107 | $ 117 | $ 117 | $ 125 | $ 134 |
| Administrative Component [2] | 28 | 33 | 33 | 31 | 29 | 27 | 25 |
| Infrastructure & Water Rights Component [3] | 79 | 90 | 101 | 112 | 115 | 118 | 122 |
| Replenishment Reserve Charge [4] | 25 | 31 | 38 | 45 | 51 | 54 | 56 |
| Total Assessment Rate ($/AF) | $ 219 | $ 254 | $ 279 | $ 305 | $ 312 | $ 324 | $ 337 |
| **Tucson Active Management Area** | | | | | | | |
| Water & Replenishment Component [1] | $ 133 | $ 143 | $ 153 | $ 164 | $ 161 | $ 168 | $ 177 |
| Administrative Component [2] | 28 | 33 | 33 | 31 | 29 | 27 | 25 |
| Infrastructure & Water Rights Component [3] | 79 | 90 | 101 | 112 | 115 | 118 | 122 |
| Replenishment Reserve Charge [4] | 25 | 39 | 46 | 54 | 61 | 65 | 67 |
| Total Assessment Rate ($/AF) | $ 265 | $ 305 | $ 333 | $ 361 | $ 366 | $ 378 | $ 391 |
| **Contract Replenishment Tax - Scottsdale [5]** | | | | | | | |
| Cost of Water | $ 108 | $ 112 | $ 126 | $ 133 | $ 139 | $ 136 | $ 144 |
| Cost of Transportation | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cost of Replenishment | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Administrative Component [2] | 28 | 33 | 33 | 31 | 29 | 27 | 25 |
| Total Tax Rate ($/AF) | $ 136 | $ 145 | $ 159 | $ 164 | $ 168 | $ 163 | $ 169 |

## ENROLLMENT & ACTIVATION FEES

Units = $/Housing Unit

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Enrollment Fee [6]** | $ 23 | $ 74 | $ 83 | $ 92 | $ 94 | $ 96 | $ 100 |
| **Activation Fee [6]** | $ 63 | $ 72 | $ 81 | $ 90 | $ 92 | $ 94 | $ 98 |

*Adopted: June 19, 2008*

**CENTRAL ARIZONA**
**GROUNDWATER REPLENISHMENT DISTRICT**
**FINAL 2008/09 AND 2009/10 RATE SCHEDULE**

NOTES:

1 The Water & Replenishment Component includes the projected cost to purchase and recharge water and effluent. For rate development purposes it was assumed that the replenishment of effluent would have the same cost as Excess CAP water recharged at a CAP state demonstration recharge project. The total volume to be purchased and replenished includes the replenishment obligation plus a sufficient volume to offset losses incurred during the replenishment process (generally 1% to 2.5%). For the Phoenix Active Management Area (AMA), replenishment will be accomplished at direct underground storage facilities (USFs) and groundwater savings facilities (GSFs). For the Pinal AMA, replenishment will be accomplished at GSFs. For the Tucson AMA, replenishment will be accomplished at USFs.

2 The Administrative Component is designed to cover all CAGRD administrative costs. $2/AF has been added to this component to help fund the CAGRD conservation program.

3 The Infrastructure & Water Rights Component was established to provide funds to (1) purchase long-term rights to water as opportunities arise, and (2) construct additional infrastructure facilities as the need arises in the future.

4 The Replenishment Reserve Charge is based on a program to establish a replenishment reserve of long-term storage credits as required by statutes. Excess CAP water will be purchased at the CAP Incentive Recharge rate and stored at a combination of USFs and GSFs in the Phoenix and Tucson AMAs. In the Pinal AMA, credits will be purchased from CAP at the incentive recharge rate in accordance with Board policy adopted on October 6, 2005. This charge will be levied as provided in ARS Sections 48-3774.01 and 48-3780.01.

5 The components of the Contract Replenishment Tax - Scottsdale reflect the provisions in the Water Availability Status Contract to Replenish Groundwater Between CAWCD and Scottsdale. The rates reflect the assumption that Excess CAP water will be available to meet the associated contract replenishment obligations.

6 The Enrollment Fee and Activation Fee reflect the fees established pursuant to the CAGRD Enrollment Fee and Activation Fee Policy adopted by the Board on May 1, 2008. $2 per housing unit is included in the enrollment fee to help fund CAGRD's conservation program.

# Moe 2

# ARIZONA DEPARTMENT OF REVENUE
## PROPERTY TAX DIVISION
1600 West Monroe, Room 820, Phoenix, Arizona 85007
Telephone: (602) 542-3529 Facsimile: (602) 542-5667

JANE DEE HULL
GOVERNOR

MARK W. KILLIAN
DIRECTOR


January 3, 2001

To: Arizona Water and Sewer Utility Companies

From: Cheryl Murray-Leyba, Administrator, Valuation Section

Re: Modification of Valuation Formula

Gentlemen:

After careful study and consideration, the Arizona Department of Revenue and the Water Utilities Association of Arizona have reached an agreement on a change in the valuation formula for water and sewer utility companies for property tax purposes. The goal of the Department and the Association was to arrive at a valuation formula that would: (1) produce predictable values; (2) be easy to administer; (3) be easy to report; (4) produce logical results; (5) be non-controversial; and, (6) produce a minimum tax impact from the previous year. It is our joint opinion that these goals have been met by this new formula. Further, it is hoped that this new valuation methodology will assist your company in your future dealings with the Arizona Corporation Commission regarding projections of future property tax expense.

The Department using the following formula, will value all water and sewer companies in Arizona beginning with the valuation for Tax Year 2002 (Valuation year as of January 1, 2001):

- The value of all water and sewer utility companies, for property tax purposes, will be computed by multiplying the average of the three previous years of reported gross revenues of the company by a factor of two (2).
- If the taxpayer reports less than three (3) years gross income, but reports income for the previous calendar year, the average gross revenue will be calculated based on the average of those years with reported revenues.
- If the taxpayer fails to report gross revenue or any other information required to calculate the value, the taxpayer will be notified of the incomplete filing and will be subject to late filing fees. The Department will then estimate the value of the property.

01/18/01 16:41 DEPT OF REVENUE → ROOO NO.185 P002/002

- Construction Work In Progress will be valued at ten percent (10%) of cost as of December 31 of the most recent calendar year.
- The net book cost of licensed vehicles will be deducted from the value indicated by the gross revenues.
- To accurately assess ongoing business operations, and to achieve comparability, further adjustments may be necessary.

Your company's tax liability, as a percentage of gross revenues, produced by this new valuation formula can be estimated as follows:

| | |
|---|---|
| Valuation Factor | 2 |
| Times Assessment Ratio | 25% |
| | .50 |
| Times Tax Rate* | .1000 (e.g.) |
| Estimated % Tax Liability | 5.00% |

*Total Primary and Secondary tax rates for taxing district(s) in which property is located.

The estimated tax liabilities should range somewhere between 2.5% and 8.5% of gross revenues in most instances, depending on the tax rates for the area in which company is located.

This change in valuation methodology will be reflected in the annual Property Tax Form, which will be mailed to you by the middle of January 2001. We look forward with working with you on this modification of the valuation formula. If you have any questions regarding this change, and how it may affect your company, please contact Bob Williams or Carole O'Brien of our section at (602) 542-3529.

EXHIBIT A-22

**DOCKET NOs. SW-02445A-09-0077 *et al.***

# Rebuttal Testimony
# of
# Jamie Moe

**November 20, 2009**

EXHIBIT
A-22
ADMITTED

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## I. Rate Base.

**Q. Did you review Staff's adjustments to rate base?**

A. Yes. Global witnesses Trevor Hill and Matt Rowell address the ICFA issue. In addition, although the Company disagrees with Staff's adjustment imputing CIAC, Staff has made an error in its calculation of the amortization of imputed CIAC for Palo Verde. Staff uses Santa Cruz's historic plant balances in its amortization calculation instead of Palo Verde's historic plant balances.

**Q. Have you reviewed RUCO's adjustments to rate base?**

A. Yes. The Company accepts RUCO's adjustments to rate base related to their recalculation of Accumulated Depreciation. The Company does not accept RUCO's adjustments to plant in service, as it appears that they are related to misplaced links in the RUCO's working papers. The Company's adjustments decrease/(increase) Accumulated Depreciation are as follows:

| | |
|---|---|
| Palo Verde | $373,408 |
| Santa Cruz | 641,535 |
| Valencia - TD | 203,589 |
| Valencia - GBD | (33,680) |
| WUGT | (34,410) |
| Willow Valley | (44,015) |

**Q. Please summarize each party's proposed rate base.**

A. Each party's proposed rate base for each Company is as follows:

| | Company | Staff | RUCO |
|---|---|---|---|
| Palo Verde | $64,011,238 | $53,470,597 | $64,011,238 |
| Santa Cruz | 45,902,454 | 39,155,692 | 45,902,454 |
| Valencia – TD | 4,443,607 | 4,240,018 | 4,539,198 |
| Valencia – GBD | 895,377 | 929,057 | 895,377 |
| WUGT | 2,563,849 | (6,123,255) | 2,563,849 |
| Willow Valley | 2,207,149 | 2,251,164 | 2,177,504 |
| Total | $120,023,674 | $93,923,273 | $120,089,620 |

## II. Operating Income.

**Q. Have you reviewed Staff and RUCO's adjustments to Operating Income?**

A. Yes.

### A. Staff Adjustment – Revenue and Expense Annualization.

**Q. Please discuss Staff's adjustment regarding revenue and expense annualization.**

A. Staff recommends removing the Company's proposed revenue and expense adjustment for Palo Verde, Santa Cruz, Valencia TD and Valencia GBD due to an increase in customer counts after the test year.

**Q. What is the Company's position on this adjustment?**

A. The Company accepts Staff's adjustment and proposes removal of its original adjustments for the Global Utilities as detailed in the rebuttal schedules under Schedule C-2, Page 2.

### B. Staff Adjustment – Salaries, Wages, Pensions and Benefits.

**Q. Please discuss Staff's adjustment regarding Salaries & Wages and Pensions & Benefits.**

A. Staff recommends reclassification of the expenses in these accounts to Account No. 634, Contractual Services – Management Fees. There is no effect on operating expenses or operating income.

**Q. What is the Company's position on this adjustment?**

A. The Company is not making the adjustment at this time. The Company maintains there is better transparency concerning the level of this expense by leaving the accounting

treatment as is, rather than combining it with the other expenses included in Contractual Services.

**C. Staff Adjustment – Materials and Supplies, Acct. Nos. 620.08 and 720.08.**

**Q. Does the Company agree with Staff's adjustment to Materials and Supplies, Account Nos. 620.08 and 720.08?**

A. No. Staff's adjustment makes incorrect assumptions about expenses prior to the test year. Using the NARUC Uniform System of Accounts as the guideline, the Company maps general and office expenses to Materials and Supplies 620.08 or 720.08 (the ".08" referring to administrative and general expenses). Prior to the test year, all office expenses were allocated to the utilities through GWM invoicing, and accounted for under Contractual Services – Management Fees. As Staff mentions, and as discussed in the Direct Testimony of Mr. Barber, the Company implemented a cost-allocation methodology which served to directly allocate costs to the extent possible. The Company cannot go backwards and review every invoice from prior years to determine how it would have been allocated under the current methodology, nor can it review every single invoice from the test year to determine how it would have been allocated under the prior methodology. It does not seem logical to assume that the utilities had zero or practically zero office expense in prior years and to use that assumption in the calculation of a normalized cost. Indeed, there would be nothing "normal" about such a "normalized" cost, and it would not be a realistic reflection of either historic costs, or expected future costs. The "wide fluctuations" (Brown DT, Pg 18 ln 16-17) are entirely related to the change in cost allocation as requested by Staff, which provides more transparency in what actual costs the utility is incurring, as opposed to a wide variety of costs simply being placed in Contractual Services – Management Fees.

Additionally, most of the utilities had experienced significant growth over the previous three years (for example, Santa Cruz and Palo Verde added 9,218 connections each, over 50% of total current connections). This dramatic growth makes the use of a three year historical average impractical in accomplishing an accurate normalization of costs, as Staff has done in this adjustment. The use of a three-year historical average can be a solid basis for a normalization adjustment when customer counts are relatively steady. But in a high growth environment a three year average does not produce an accurate representation of the relevant costs.

**Q. Staff states it sent a data request for all test year invoices for the materials and supplies expenses for account nos. 620.08 and 720.08 on May 2, 2009, yet the Company did not provide the requested information until September 22, 2009, thus affecting Staff's time to audit the documents and incorporate its findings in direct testimony. Can you please respond to Staff's statements regarding this data request.**

A. Yes, the Global Utilities do not agree with Staff's depiction of the events regarding this data request. In response to Staff's data request dated May 2, 2009, the Global Utilities responded with the following on May 18, 2009:

> Expenses hitting this line item were coded to contract services - management (acct#83707) in 2007 and allocated through the old GWM invoicing process. These costs are now accounted for at the appropriate utility account, whether a direct cost or through GWI invoicing.
>
> The supporting documentation is voluminous. Please schedule an on-site visit and we will make the records available for inspection. If you could provide a list of samples you would like to audit, we will work to have the records ready for your visit.

Staff made 8 on-site visits during its audit. Most of this time was spent auditing plant records. During these 8 visits Staff did not mention the invoices for accounts 620.08 and

720.08 until August 27, 2009, which was Staff's final on-site visit. Then, Staff made its request and once again requested all invoices for Contract Services, Fuel for Purchased Power Production and Materials & Supplies (account nos. 620, 620.08, 720 and 720.08 were all mentioned in relation to materials and supplies) to be provided on compact disc. Prior to this, the Company had not received any requests from Staff related to these accounts since the original May 2, 2009, data request.

The Company asked Staff if samples from those accounts could be selected, as trying to gather, organize and scan all of the invoices would be extremely time-consuming and burdensome to the Company. Staff stated they needed all invoice support. The Company was able to provide the scanned support for Contract Services and Fuel for Purchased Power Production on September 11, 2009. This scanned documentation included 4,300 pages of invoices. Due to extra time required as a result of the amount of invoice support required for Materials & Supplies, the Global Utilities were unable to provide the scanned support until September 22, 2009. The additional documentation provided on September 22, 2009 included 2,264 pages of invoices.

**D. Staff Operating Income Adjustment – Contractual Services - Management Fees.**

**Q. Please respond to Staff's Adjustment to Contractual Services – Management Fees.**

A. The Company accepts Staff's adjustment to Contractual Services – Management Fees with one exception. In regards to the portion dealing with bonuses, Staff removes bonuses in two portions, indirect and direct. The "indirect" portion Staff refers to is included in the "direct" balance. This results in the same expense being removed twice. The corrected adjustment reducing operating expense to each utility is as follows:

| | |
|---|---|
| Palo Verde | $26,716 |
| Santa Cruz | 36,447 |
| Valencia, TD | 55,315 |
| Valencia, GBD | 7,016 |
| WUGT | 4,629 |
| Willow Valley | 21,372 |

**E. Staff Operating *Income* Adjustment – Purchased Power.**

**Q. Please respond to Staff's adjustment to purchased power expense.**

A. The Company accepts Staff's adjustment to Purchased Power for WUGT. However, Staff's calculation of water loss percentage is erroneous. It is mathematically incorrect to use an average of averages in the calculation of water loss. Instead, a weighted average should be used. Each water system has different pumping levels, and each system's water loss should be weighted accordingly. The Global Utilities provide the following calculation for WUGT's percentage water loss:

| Water System | Sold (in 1,000's) | Pumped (in 1,000's) | Water Loss | Weighted Average |
|---|---|---|---|---|
| Garden City | 1,960 | 2,560 | 23.4% | 1.3% |
| Roseview | 2,212 | 2,413 | 8.3% | 0.5% |
| WPE #1 | 342 | 499 | 31.5% | 0.4% |
| WPE #6 | 1,758 | 2,530 | 30.5% | 1.7% |
| Tufte | 444 | 514 | 13.6% | 0.2% |
| Buckeye Ranch | 12,521 | 13,929 | 10.1% | 3.2% |
| Dixie | 4,023 | 5,656 | 28.9% | 3.7% |
| Sunshine | 15,745 | 16,375 | 3.8% | 1.4% |
| Total | 39,005 | 44,476 | | 12.3% |

Thus, the weighted average water loss is 12.3%. This is 2.3% over the water loss allowed by Staff Engineering. The water loss percentage of 2.3% applied to WUGT's Purchased

Power expense results in a decrease of $372. The Global Utilities' adjustment to Purchased Power is shown in its rebuttal schedules, Schedule C-2.

**F. Staff Operating Income Adjustment – Bad Debt Expense.**

**Q. Please respond to Staff's adjustment to bad debt expense.**

A. Staff's adjustment incorrectly focuses and uses the actual bad debt write-offs. This is incorrect as bad debt write-offs are a reduction to Allowance for Doubtful Accounts and Accounts Receivable; there is no effect on expenses. Bad Debt Expense, however, is a calculation made based upon an aging of receivables and the recognition that some customer bills may never be paid; this calculation is required by GAAP for conservatism. Staff's adjustment is akin to comparing apples and pears, they're both fruit and somewhat similar-looking, but they are not the same thing.

To avoid further argument, the Global Utilities will remove their original adjustments and use actual test year bad debt expense balances as the basis for the percentage of revenue calculation. Additionally, neither Staff nor RUCO adjusted bad debt expense to account for their recommended levels of revenues. The Global Utilities continue to support the need for an adjustment related to the increase in revenue requirement. The Global Utilities have calculated the rate as the test year adjusted bad debt expense divided by the adjusted test year total revenues. The calculation is shown in each utility's rebuttal schedules on Schedule C-2, page 3.

### G. Staff Operating Income Adjustment – Depreciation Expense.

**Q. Please respond to Staff's adjustment to Depreciation Expense.**

A. The Company disagrees with Staff's adjustment to Depreciation Expense, as it disagrees with Staff's imputation of CIAC. Additionally, Staff reduced Depreciation Expense by the Accumulated Amortization of CIAC. This violates the matching principle of accounting. According to the NARUC Uniform System of Accounts (USOA), the concurrent credit for the amortization of CIAC shall be made to Depreciation Expense.[1] Staff's reduction to Depreciation Expense is overstated due to this misapplication.

### H. Operating Income – Property Tax Pass-Through.

**Q. Please respond to Staff and RUCO's positions on the Property Tax Pass-Through.**

A. Both Staff and RUCO are opposed to the implementation of a Property Tax Pass-Through.

**Q. How do the Global Utilities respond?**

A. The Global Utilities agree with Staff that a pass through for Property Tax may be difficult to easily manage and that an adjustor would be more appropriate, and thus we propose the implementation of an adjustor.

Staff does not recommend an adjustor for Global Utilities, stating property taxes are not a significant portion of operating expenses. The Global Utilities disagree with Staff's assessment of property taxes. For example, over Santa Cruz's three-year history on Schedule E-2, Property Tax has moved from 2.2% of operating expenses in 2006 to 5.8% in 2008, demonstrating a significant level of volatility. In fact, property taxes range from 2.7% to 6.4% of the operating expenses, and in some cases are equivalent to the power and

[1] See NARUC Uniform System of Accounts, Section 272.C, 1996

treatment costs. Since the Commission has considered power and treatment costs adjustors in the past, it is our belief that some form of adjustor or pass through is appropriate in these cases. See Exhibit Moe-Rebuttal-1 for a description of the adjustor.

With further respect to the volatility of property tax stability, I suggest that Staff is incorrect in its assessment. One, the state's municipal budgets will likely require increases in personal and property taxes in the future. Two, the process of changing rates is a straightforward one, in which rates can be adjusted very quickly. For instance, I have enclosed as Exhibit Moe-Rebuttal-2, City of Maricopa Ordinance Number 05-05, which shows an increase in taxation of construction contracting activities from 2% to 3.5% approved by the City in February 2005. The magnitude of such an increase, were it applied to property tax assessments would be very destructive to net revenues – even in the context of a 3 year averaging period.

**Q. Does the Company have any other concerns regarding Property Tax?**

A. Yes, it appears that RUCO may have used the wrong property tax rates in their calculation, thus resulting in a calculation which is lower than it should be.

**I. Operating Income – Income Taxes.**

**Q. Please respond to Staff and RUCO's adjustments to Income Taxes.**

A. The Company does not have any issues with the calculations made by Staff and RUCO. The differences in Income Tax calculations between all parties are related to each party's differing levels of operating income.

## III. CAGRD Pass Through.

**Q. Please explain Staff and RUCO's position in regards to the CAGRD Pass Through.**

A. Both Staff and RUCO are opposed to the implementation of the commodity-based CAGRD Pass Through. Both parties essentially argue that none of the utilities are currently paying CAGRD fees and that the costs are not known and measurable.

**Q. Do you agree?**

A. No. Since the CAGRD rates are based on consumption, this is truly a cost which is 100% based on customer consumption for utilities which obtain a DAWS. Please refer to Mr. Symmonds' testimony in regards to the benefits of obtaining a DAWS. CAGRD's 2009/2010 Firm Rates are shown in this table:

| CAGRD 2009/2010 Firm Rates | | | |
|---|---|---|---|
| Phoenix AMA | $ | 318 | per acre foot |
| Pinal AMA | $ | 279 | per acre foot |
| Customer charge | | | |
| Phoenix AMA | $ | 0.98 | per 1,000 gallons |
| Pinal AMA | $ | 0.86 | per 1,000 gallons |

I would also disagree that the costs are not known and measurable. Assuming the rates mentioned above for the Phoenix AMA, if a utility completed its DAWS December 31, 2009, and sold 10,000 gallons of water to a customer in January, the cost would be $9.80.

It should also be noted that this is simply a transfer of responsibility of the CAGRD assessment to the using party. In the case of developments operating under a Certificate of Assured Water Supply, the individual homeowners are assessed through their property tax at the same cost.

If CAGRD happened to change its rate, the new rate would easily be applied. Just as when a sales tax rate is changed, the commodity-based pass through could be adjusted accordingly. For all intents and purposes, the pass through rate would be known and measurable at the time it is applied.

Denial of the pass through potentially places from an expense of $.86 to $.98 per 1,000 gallons of customer usage on a company that chooses to pursue a DAWS. This is a cost directly related to customer consumption, but customers would not get the "cost signal" related to these costs until a future rate case is processed. As RUCO mentions, it also does not qualify as a "privilege, sales or use tax" since the CAGRD fees are not based on sales revenue. These costs are solely based on consumption. There is no more efficient way to handle these costs than a commodity-based pass through surcharge.

The bottom line is the approval of the CAGRD pass through helps protect the financial health of the utility and sends the appropriate price signal related to water usage. If the Commission does not find a pass through to be appropriate at this time, the Company proposes an adjustor mechanism similar to that recommended by Staff in the Johnson Utilities case (Jaress page 38, line 5-8).

## IV. <u>Franchise Fee Pass Through.</u>

**Q. Please summarize the Staff and RUCO position on the Franchise Fee pass through.**

A. Staff is opposed to the Company proposal for a Franchise Fee pass through and also recommends denial of the costs entirely because no franchise election has been held. RUCO is opposed to the Franchise Fee pass through, but recommends rate recovery and has made an adjustment including the costs based on its proposed revenues.

**Q. What is the Global Utilities' position after reading the Staff and RUCO recommendations?**

A. The Global Utilities continue to support a Franchise Fee pass through. Global agreed to these contracts, in good faith, to obtain the numerous benefits to our customers provided by these contracts, recognizing that the municipalities would be entitled franchise fees upon implementation of franchise agreements. The Maricopa and Casa Grande City Councils voted to approve these agreements, and the city councils have chosen not to pursue franchise elections at this time. The Commission should recognize that these actions were made the by elected representatives of the people of those cities, and respect their choices. These fees are based entirely on sales and pass-through treatment is appropriate.

However, should the Commission deny pass-through treatment, then recognizing these fees in revenue requirement as recommended by RUCO would be appropriate.

## V. <u>Distributed Renewable Energy Recovery Tariff.</u>

**Q. Please summarize the Staff and RUCO position on the Global Utilities' request for a Distributed Renewable Energy Recovery Tariff.**

A. Both Staff and RUCO recommend denial of the Distributed Renewable Energy Recovery Tariff.

**Q. Do you agree?**

A. No. Mr Rigsby states:

> While it is true that legislation has been passed which encourages the installation of devices that employ solar technology, there has been no federal or state legislation that actually requires individuals or businesses to actually install equipment that uses

> solar technology. Even more importantly, RUCO believes that uncertainties that exist regarding the financing aspects of obtaining such devices, not to mention the overall impacts that the devices may have on annual utility operation and maintenance costs, should be scrutinized in the context of a full rate case proceeding as opposed to the limited type of analysis that would occur in an ACRM filing that comes before the Commission.

It is true that there is no legislative requirement to achieve power self-sufficiency. That fact does not recognize the reality of our current situation. Power is, next to labor costs, the single highest cost for utilities. Compounding this is the link between water and power – the generation of power requires substantial amounts of water, and the production/transmission of water requires substantial power. In a world destined to be constrained by the realities of carbon management and water scarcity, it benefits our consumers to mitigate those effects today.

In many ways the situation is similar to the regional planning imperative that exists today to deal with water scarcity. Investing in infrastructure today can assist in achieving sustainability in the future. Not taking the steps today, will eliminate options in our future.

The Global Utilities are dedicated to Total Water Management, as discussed in Mr. Hill's Rebuttal Testimony. The Global Utilities develop their systems for water sustainability for the future of Arizona; they are not the "cheapest" systems that can be built. Simply taking recycled water out of the systems would cut costs. However, the Global Utilities will continue to build water and wastewater systems implementing the use of recycled water because it doing the right thing and the necessary thing for Arizona's future. Although these systems may not be the cheapest from day one, if properly planned the efficiencies can be recognized throughout the system life.

**Q. How does this apply to the proposal of a Distributed Renewable Energy Recovery Tariff?**

A. The use of renewable energy is similar. It is simply the right thing to do. The Commission has placed the Renewable Energy Standard on electric utilities, despite the fact that renewable energies are not currently the "cheapest" source of electricity. It may take time before customers fully recognize the cost benefits, but the additional benefits such as potential offset to future increases in energy costs, reduction to pollutants in the air, etc., cannot necessarily be quantified at this time.

**Q. Staff states there are some risks associated with investing in solar power to run water and wastewater plants (Jaress Direct Testimony page 40). How does the Company respond?**

A. It appears Staff's risks amount to a list of possible "what if" scenarios. Yes, the technologies are still evolving. Every electric utility in the state deals with this risk. For the benefit of the community, we cannot afford inactivity out of fear. Next month, a new technology to remove arsenic could be developed which is more efficient than any current options and costs very little. That does not mean that we will not use existing technology to treat arsenic. It is important to do what we can with what is available, and those actions will be reviewed to determine if they are reasonable and prudent. Additionally, the Commission's REST rules encourage electric utilities to incent their *residential* customers to install solar facilities on their homes. If the risk profile of solar installations is appropriate for residences, I do not see how it could be considered too risky for a company with the technical expertise of Global.

**Q. RUCO states that "there is no law or regulation currently in effect that requires individuals or businesses to purchase and install the types of devices that Global Utilities wants to employ in the operation of the Company's plant facilities" (Rigsby Direct Testimony page 11). How do you respond?**

A. I agree, except for regulation on electric utilities in Arizona. However, the Global Utilities feel very strongly that they have a social obligation to do more than the bare minimum.

# Moe

# Rebuttal Exhibit 1

| Line | | Calculations |
|---|---|---|
| 1 | Rate Case Calculated Property Tax | $ 400,000 |
| 2 | Test Year Gallons Sold (in 1,000's) | 1,500,000 |
| 3 | Commodity Base Rate (Line 1 / Line 2) | $ 0.27 |
| | Year 1 | |
| 4 | Property Tax Adjustor | **$ -** |
| 5 | Actual Property Tax Expense | $ 375,000 |
| 6 | Growth of 1.5% - Gallons Sold (in 1,000's) | 1,522,500 |
| 7 | Property Tax Recovered (Line 4 * Line 6) | $ 406,000 |
| 8 | Under/(Over) Recovery (Line 5 - Line 7) | $ (31,000) |
| 9 | Adjustment to Property Tax Adjustor Surcharge (Line 8 / Line 6) | $ (0.02) |
| | Year 2 | |
| 10 | Property Tax Adjustor (Line 9) | **$ (0.02)** |
| 11 | Actual Property Tax Expense | $ 450,000 |
| 12 | Growth of 1.5% - Gallons Sold (in 1,000's) | 1,545,338 |
| 13 | Property Tax Recovered ([Line 3 + Line 10] * Line 12) | $ 380,625 |
| 14 | Under/(Over) Recovery (Line 11 - Line 13) | $ 69,375 |
| 15 | Adjustment to Property Tax Adjustor Surcharge (Line 14 / Line 12) | $ 0.04 |
| | Year 3 | |
| 16 | Property Tax Adjustor (Line 10 + Line 15) | **$ 0.02** |
| 17 | Actual Property Tax Expense | $ 550,000 |
| 18 | Growth of 1.5% - Gallons Sold (in 1,000's) | 1,568,518 |
| 19 | Property Tax Recovered ([Line 3 + Line 16] * Line 18) | $ 456,750 |
| 20 | Under/(Over) Recovery (Line 17 - Line 19) | $ 93,250 |
| 21 | Adjustment to Property Tax Adjustor Surcharge (Line 20 / Line 18) | $ 0.06 |
| | Year 4 | |
| 22 | Property Tax Adjustor (Line 16 + Line 21) | **$ 0.08** |
| 23 | Actual Property Tax Expense | $ 700,000 |
| 24 | Growth of 1.5% - Gallons Sold (in 1,000's) | 1,592,045 |
| 25 | Property Tax Recovered ([Line 3 + Line 22] * Line 24) | $ 558,250 |
| 26 | Under/(Over) Recovery (Line 23 - Line 25) | $ 141,750 |
| 27 | Adjustment to Property Tax Adjustor Surcharge (Line 26 / Line 24) | $ 0.09 |
| | Year 5 | |
| 28 | Property Tax Adjustor (Line 22 + Line 27) | **$ 0.17** |

# Moe

# Rebuttal Exhibit 2

## ORDINANCE NUMBER 05-05

**AN ORDINANCE OF THE CITY OF MARICOPA, ARIZONA AMENDING SECTIONS 8-415, 8-416 AND 8-417 OF THE "TAX CODE OF THE CITY OF MARICOPA, ARIZONA" BY INCREASING THE TAX RATE ON CONSTRUCTION CONTRACTING FROM TWO PERCENT (2%) TO THREE AND ONE-HALF PERCENT (3.5%); CONFIRMING PENALTY FOR VIOLATIONS OF THIS AMENDMENT; AND ESTABLISHING AN ENACTMENT AND EFFECTIVE DATE THEREOF**

**WHEREAS**, pursuant to Ordinance No. 03-03, the City of Maricopa previously adopted that certain document known and serving as the "Tax Code of the City of Maricopa, Arizona," based on the League of Arizona Cities and Towns Model Tax Code; and

**WHEREAS**, when adopting that Code, the City established an initial tax rate of two percent (2%) on construction contracting activity; and

**WHEREAS**, the Mayor and Council believe that increasing the privilege tax rate on construction contracting activities to three and one-half percent (3.5%) would be in the best interests of the City;

**NOW THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF MARICOPA, ARIZONA:**

**Section 1**: That certain document known as the "Tax Code of the City of Maricopa, Arizona," adopted by Ordinance 03-03, is hereby amended by increasing the sales tax rate in each of the following Sections from two percent (2%) to three and one-half percent (3.5%):

| | |
|---|---|
| **Section 8-415** | **Construction contracting: construction contractors** |
| **Section 8-416** | **Construction contracting: speculative builders** |
| **Section 8-417** | **Construction contracting: owner-builders who are not speculative builders** |

**Section 2**: Any person found guilty of violating any provision of these amendments to the Tax Code of the City of Maricopa shall be guilty of a class one misdemeanor. Each day that a violation continues shall be a separate offense.

**Section 3**: If any section, subsection, sentence, clause, phrase or portion of this Ordinance or any part of the Code amended herein is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

**Section 4**: The provisions of this Ordinance and the increased tax rate enacted thereby shall be effective thirty days after adoption of this Ordinance.

**Section 5**: For purposes of applying Model Tax Code Regulation Section 415.3, the increased tax rate imposed by Section 1 of this Ordinance shall not apply to contracts entered into prior to the Effective Date of this Ordinance.

Passed and Adopted by the Mayor and the City Council of the City of Maricopa this 15th day of February, 2005.

APPROVED:

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

# Moe Rebuttal Schedules

# Moe

# Rebuttal Schedule

# PVUC

**Global Water - *Palo Verde* Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 63,637,830 | $ 63,637,830 | $ 64,011,238 | $ 64,011,238 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ 144,516 | $ 144,516 | $ (83,236) | $ (83,236) |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | 0.23% | 0.23% | -0.13% | -0.13% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 5,307,395 | $ 5,307,395 | $ 5,338,537 | $ 5,338,537 |
| 8 | | | | | |
| 9 | Required Rate of Return | 8.34% | 8.34% | 8.34% | 8.34% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 5,162,879 | $ 5,162,879 | $ 5,421,773 | $ 5,421,773 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.652434 | 1.652434 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 8,493,379 | $ 8,493,379 | $ 8,959,124 | $ 8,959,124 |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 100,264,747 | $ - | $ 100,264,747 |
| 2 | Less: Accumulated Depreciation | (9,082,530) | 373,408 | (8,709,122) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 91,182,217 | $ 373,408 | $ 91,555,625 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | - | - | - |
| 8 | Advances in Aid of Construction (AIAC) | 27,370,552 | - | 27,370,552 |
| 9 | Customer Deposits | - | - | - |
| 10 | Deferred Income Tax Credits | 173,835 | - | 173,835 |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | - | - | - |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 63,637,830 | $ 373,408 | $ 64,011,238 |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
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| 40 | | | | |
| 41 | | | | |
| 42 | Supporting Schedules: | | Recap Schedules: | |
| 43 | B-2 | | A-1 | |
| 44 | B-3 | | | |
| 45 | E-1 | | | |
| 46 | B-5 | | | |
| 47 | | | | |
| 48 | | | | |

Global Water - Palo Verde Utilities Company - Rebuttal Schedules
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments ADJ #1 | [E] Rebuttal Adjustments ADJ #2 | [F] Rebuttal Adjustments ADJ #3 | [G] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | 353 Land and Land Rights | $ 186,009 | $ - | $ 186,009 | $ - | $ - | $ - | $ 186,009 |
| 2 | 354 Structures and Improvements | 16,520,426 | - | 16,520,426 | - | - | - | 16,520,426 |
| 3 | 355 Power Generation Equipment | 321,425 | - | 321,425 | - | - | - | 321,425 |
| 4 | 360 Collection Sewers - Force | 3,857,656 | - | 3,857,656 | - | - | - | 3,857,656 |
| 5 | 361 Collection Sewers - Gravity | 47,344,470 | - | 47,344,470 | - | - | - | 47,344,470 |
| 6 | 363 Services to Customers | 5,205,784 | - | 5,205,784 | - | - | - | 5,205,784 |
| 7 | 364 Flow Measuring Devices | 23,636 | - | 23,636 | - | - | - | 23,636 |
| 8 | 370 Receiving Wells | 1,940,450 | - | 1,940,450 | - | - | - | 1,940,450 |
| 9 | 371 Pumping Equipment | 3,878,776 | - | 3,878,776 | - | - | - | 3,878,776 |
| 10 | 374 Reuse Distribution Reservoirs | 11,043 | - | 11,043 | - | - | - | 11,043 |
| 11 | 375 Reuse Transmission and Distribution System | 10,912,763 | - | 10,912,763 | - | - | - | 10,912,763 |
| 12 | 380 Treatment and Disposal Equipment | 5,440,808 | - | 5,440,808 | - | - | - | 5,440,808 |
| 13 | 381 Plant Sewers | 78,384 | - | 78,384 | - | - | - | 78,384 |
| 14 | 382 Outfall Sewer Lines | 353,645 | - | 353,645 | - | - | - | 353,645 |
| 15 | 389 Other Plant and Miscellaneous Equipment | 2,271,644 | - | 2,271,644 | - | - | - | 2,271,644 |
| 16 | 390 Office Furniture and Equipment | 138,995 | - | 138,995 | - | - | - | 138,995 |
| 17 | 391 Transportation Equipment | 165,404 | - | 165,404 | - | - | - | 165,404 |
| 18 | 393 Tools, Shop and Garage Equipment | 100,819 | - | 100,819 | - | - | - | 100,819 |
| 19 | 394 Laboratory Equipment | 36,073 | - | 36,073 | - | - | - | 36,073 |
| 20 | 395 Power Operated Equipment | 10,320 | - | 10,320 | - | - | - | 10,320 |
| 21 | 396 Communication Equipment | 38,289 | - | 38,289 | - | - | - | 38,289 |
| 22 | 397 Miscellaneous Equipment | 359,170 | - | 359,170 | - | - | - | 359,170 |
| 23 | 398 Other Tangible Plant | 1,068,758 | - | 1,068,758 | - | - | - | 1,068,758 |
| 24 | | | | | | | | |
| 25 | Total Plant in Service | $ 100,264,747 | $ - | $ 100,264,747 | $ - | $ - | $ - | $ 100,264,747 |
| 26 | Less: Accumulated Depreciation | (9,082,530) | - | (9,082,530) | 373,408 | - | - | (8,709,122) |
| 27 | Net Plant in Service (L59 - L 60) | $ 91,182,217 | $ - | $ 91,182,217 | $ 373,408 | $ - | $ - | $ 91,555,625 |
| 28 | | | | | | | | |
| 29 | LESS: | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 31 | Advances in Aid of Construction (AIAC) | 27,370,552 | - | 27,370,552 | - | - | - | 27,370,552 |
| 32 | Customer Meter Deposits | - | - | - | - | - | - | - |
| 33 | Deferred Income Tax Credits | 173,835 | - | 173,835 | - | - | - | 173,835 |
| 34 | | | | | | | | |
| 35 | ADD: | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | - | - | - | - | - | - | - |
| 38 | Working Capital | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - |
| 40 | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 63,637,830 | $ - | $ 63,637,830 | $ 373,408 | $ - | $ - | $ 64,011,238 |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | Supporting Schedules: | | | | | Recap Schedules: | | |
| 45 | E-1 | | | | | B-1 | | |
| 46 | | | | | | | | |

| Line No. | | | |
|---|---|---|---|
| 1 | | | |
| 2 | Accumulated Depreciation as Filed | $ | (9,082,530) |
| 3 | RUCO Calculated Accum. Depr. | | (8,709,122) |
| 4 | | | |
| 5 | Adjustment to Accum. Depr. | $ | 373,408 |
| 6 | | | |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| Line No. | DESCRIPTION | [A] Actual Test Year | [B] Pro Forma Adjustments - As Filed | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments | [E] Adjusted Test Year - Rebuttal | [F] Proposed Increase - Rebuttal | [G] Adjusted With Increase - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | 521 Flat Rate Revenues | $ 6,093,851 | $ (84,104) | $ 6,009,748 | $ 122,612 | $ 6,132,359 | $ 7,638,181 | $ 13,770,540 |
| 3 | 536 Other Wastewater Revenues | 339,704 | - | 339,704 | - | 339,704 | 373,375 | 713,079 |
| 4 | 541 Measured Reuse Revenues | 171,749 | - | 171,749 | - | 171,749 | 947,568 | 1,119,317 |
| 5 | Total Operating Revenues | $ 6,605,304 | $ (84,104) | $ 6,521,201 | $ 122,612 | $ 6,643,812 | $ 8,959,124 | $ 15,602,936 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 701 Salary and Wages - Employees | $ 1,043,177 | $ (118,324) | $ 924,853 | $ (26,716) | $ 898,137 | $ - | $ 898,137 |
| 9 | 704 Employee Pensions and Benefits | 239,457 | (23,665) | 215,792 | - | 215,792 | - | 215,792 |
| 10 | 715 Purchased Power | 534,930 | 60,227 | 595,157 | 6,639 | 601,796 | - | 601,796 |
| 11 | 716 Fuel for Power Production | 7,004 | - | 7,004 | - | 7,004 | - | 7,004 |
| 12 | 718 Chemicals | 160,011 | (2,877) | 157,134 | 2,877 | 160,011 | - | 160,011 |
| 13 | 720 Materials and Supplies | 263,301 | - | 263,301 | - | 263,301 | - | 263,301 |
| 14 | 720 08 Materials and Supplies | 295,301 | - | 295,301 | - | 295,301 | - | 295,301 |
| 15 | 734 Contractual Services - Management Fees | - | - | - | - | - | - | - |
| 16 | 735 Contractual Services - Testing | 99,923 | - | 99,923 | - | 99,923 | - | 99,923 |
| 17 | 736 Contractual Services - Other | 183,283 | - | 183,283 | - | 183,283 | - | 183,283 |
| 18 | 741 Rental of Building/Real Property | 93,111 | - | 93,111 | - | 93,111 | - | 93,111 |
| 19 | 742 Rental of Equipment | 20,469 | - | 20,469 | - | 20,469 | - | 20,469 |
| 20 | 650 Transportation Expenses | 35,559 | - | 35,559 | - | 35,559 | - | 35,559 |
| 21 | 757 Insurance - General Liability | 52,375 | - | 52,375 | - | 52,375 | - | 52,375 |
| 22 | 759 Insurance - Other | 4,320 | - | 4,320 | - | 4,320 | - | 4,320 |
| 23 | 760 Advertising Expense | 258 | (258) | - | - | - | - | - |
| 24 | 767 Rate Case Expense | - | 53,333 | 53,333 | - | 53,333 | - | 53,333 |
| 25 | 770 Bad Debt Expense | 95,689 | (30,477) | 65,212 | 30,477 | 95,689 | 129,036 | 224,725 |
| 26 | 775 Miscellaneous Expenses | 56,965 | - | 56,965 | - | 56,965 | - | 56,965 |
| 27 | 403 Depreciation Expense | 2,898,923 | 257,752 | 3,156,675 | - | 3,156,675 | - | 3,156,675 |
| 28 | 408.10 Taxes Other Than Income - Utility Regulatory Asses | 26,305 | (25,049) | 1,256 | - | 1,256 | - | 1,256 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 280,397 | (280,397) | - | 480,259 | 480,259 | - | 480,259 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licens | 4,814 | - | 4,814 | - | 4,814 | - | 4,814 |
| 31 | 409 Income Taxes | 89,215 | 1,633 | 90,848 | (143,173) | (52,325) | 3,408,315 | 3,355,990 |
| 32 | Total Operating Expenses | $ 6,484,785 | $ (108,100) | $ 6,376,685 | $ 350,363 | $ 6,727,048 | $ 3,537,351 | $ 10,264,399 |
| 33 | | | | | | | | |
| 34 | Utility Operating Income (Loss) | $ 120,519 | $ 23,997 | $ 144,516 | $ (227,752) | $ (83,236) | $ 5,421,773 | $ 5,338,537 |
| 35 | | | | | | | | |
| 36 | 414 Gains (Losses) from Disp of Util Prop | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | 2,728 | - | 2,728 | - | 2,728 | - | 2,728 |
| 38 | 427 Interest Expense | - | - | - | - | - | - | - |
| 39 | Total Other Income and Deductions | $ 2,728 | $ - | $ 2,728 | $ - | $ 2,728 | $ - | $ 2,728 |
| 40 | | | | | | | | |
| 41 | Net Income (Loss) | $ 123,247 | $ 23,997 | $ 147,244 | $ (227,752) | $ (80,508) | $ 5,421,773 | $ 5,341,265 |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
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| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 50 | E-2 | | | | | | A-1 | |
| 51 | C-2 | | | | | | | |

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | 521 Flat Rate Revenues | $ 6,093,851 | $ (84,104) | $ 6,009,748 | $ 122,612 | $ - | $ - | $ - | $ - | $ - | $ 6,132,359 |
| 3 | 536 Other Wastewater Revenues | 339,704 | - | 339,704 | - | - | - | - | - | - | 339,704 |
| 4 | 541 Measured Reuse Revenues | 171,749 | - | 171,749 | - | - | - | - | - | - | 171,749 |
| 5 | Total Operating Revenues | $ 6,605,304 | $ (84,104) | $ 6,521,201 | $ 122,612 | $ - | $ - | $ - | $ - | $ - | $ 6,643,812 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 701 Salary and Wages - Employees | $ 1,043,177 | $ (118,324) | $ 924,853 | $ - | $ (26,716) | $ - | $ - | $ - | $ - | $ 898,137 |
| 9 | 704 Employee Pensions and Benefits | 239,457 | (23,665) | 215,792 | - | - | - | - | - | - | 215,792 |
| 10 | 715 Purchased Power | 534,930 | 60,227 | 595,157 | 6,639 | - | - | - | - | - | 601,796 |
| 11 | 716 Fuel for Power Production | 7,004 | - | 7,004 | - | - | - | - | - | - | 7,004 |
| 12 | 718 Chemicals | 160,011 | (2,877) | 157,134 | 2,877 | - | - | - | - | - | 160,011 |
| 13 | 720 Materials and Supplies | 263,301 | - | 263,301 | - | - | - | - | - | - | 263,301 |
| 14 | 720.08 Materials and Supplies | 295,301 | - | 295,301 | - | - | - | - | - | - | 295,301 |
| 15 | 734 Contractual Services - Management Fees | - | - | - | - | - | - | - | - | - | - |
| 16 | 735 Contractual Services - Testing | 99,923 | - | 99,923 | - | - | - | - | - | - | 99,923 |
| 17 | 736 Contractual Services - Other | 183,283 | - | 183,283 | - | - | - | - | - | - | 183,283 |
| 18 | 741 Rental of Building/Real Property | 93,111 | - | 93,111 | - | - | - | - | - | - | 93,111 |
| 19 | 742 Rental of Equipment | 20,469 | - | 20,469 | - | - | - | - | - | - | 20,469 |
| 20 | 650 Transportation Expenses | 35,559 | - | 35,559 | - | - | - | - | - | - | 35,559 |
| 21 | 757 Insurance - General Liability | 52,375 | - | 52,375 | - | - | - | - | - | - | 52,375 |
| 22 | 759 Insurance - Other | 4,320 | - | 4,320 | - | - | - | - | - | - | 4,320 |
| 23 | 760 Advertising Expense | 256 | (256) | - | - | - | - | - | - | - | - |
| 24 | 767 Rate Case Expense | - | 53,333 | 53,333 | - | - | - | - | - | - | 53,333 |
| 25 | 770 Bad Debt Expense | 95,689 | (30,477) | 65,212 | - | - | - | 30,477 | - | - | 95,689 |
| 26 | 775 Miscellaneous Expenses | 56,965 | - | 56,965 | - | - | - | - | - | - | 56,965 |
| 27 | 403 Depreciation Expense | 2,898,923 | 257,752 | 3,156,675 | - | - | - | - | - | - | 3,156,675 |
| 28 | 408.10 Taxes Other Than Income - Utility Regulatory Assessment Fe | 26,305 | (25,049) | 1,256 | - | - | - | - | - | - | 1,256 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 280,397 | (280,397) | - | - | - | - | - | 480,259 | - | 480,259 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | 4,814 | - | 4,814 | - | - | - | - | - | - | 4,814 |
| 31 | 409 Income Taxes | 89,215 | 1,633 | 90,848 | - | - | - | - | - | (143,173) | (52,325) |
| 32 | Total Operating Expenses | $ 6,484,785 | $ (108,100) | $ 6,376,685 | $ 9,516 | $ (26,716) | $ - | $ 30,477 | $ 480,259 | $ (143,173) | $ 6,727,048 |
| 33 | | | | | | | | | | | |
| 34 | Operating Income (Loss) | $ 120,519 | $ 23,997 | $ 144,516 | $ 113,096 | $ 26,716 | $ - | $ (30,477) | $ (480,259) | $ 143,173 | $ (83,236) |
| 35 | | | | | | | | | | | |
| 36 | 414 Gains (Losses) from Disposition of Utility Property | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | 2,728 | - | 2,728 | - | - | - | - | - | - | 2,728 |
| 38 | 427 Interest Expense | - | - | - | - | - | - | - | - | - | - |
| 39 | Total Other Income and Deductions | $ 2,728 | $ - | $ 2,728 | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,728 |
| 40 | | | | | | | | | | | |
| 41 | Net Income (Loss) | $ 123,247 | $ 23,997 | $ 147,244 | $ 113,096 | $ 26,716 | $ - | $ (30,477) | $ (480,259) | $ 143,173 | $ (80,508) |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | | | | | | |
| 45 | C-2 | | | | | | | | | | |
| 46 | E-2 | | | | | | | | | | |

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 1
Remove Annualization Revenue & Expense to reflect End-of-Test Year Cutomer Counts



| Line No. | Class of Service | [A] Average No. of Customers Per Bill Count Sch. H-2 Col. A | [B] Year-End Number of Customers | [C] Average Additional Customers [B - A] | [D] Change in Bills to be Issued | [E] Average Gallons Sold Per Customer | [F] Additional K Gallons To Be Sold | [G] Additional Revenues at Present Rates |
|---|---|---|---|---|---|---|---|---|
| 1 | 5/8" Residential | 1,719 | 1,664 | (55) | (580) | Varies | (4,704) | $ 22,440 |
| 2 | 3/4" Residential | 13,210 | 12,917 | (293) | (3,512) | Varies | (21,613) | 115,896 |
| 3 | 1" Residential | 123 | 125 | 2 | 27 | Varies | 86 | (2,228) |
| 4 | 1.5" Residential | 1 | - | (1) | (5) | Varies | (11) | 825 |
| 5 | 2" Residential | 1 | 1 | - | - | Varies | - | - |
| 6 | Subtotal Residential | 15,054 | 14,707 | (347) | (4,170) | | (26,262) | $ 136,934 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | 5/8" Commercial | 4 | 4 | - | - | Varies | - | $ - |
| 10 | 3/4" Commercial | 4 | 4 | - | - | Varies | - | - |
| 11 | 1" Commercial | 17 | 16 | (1) | (2) | Varies | (18) | 165 |
| 12 | 1.5" Commercial | 25 | 25 | - | - | Varies | - | - |
| 13 | 2" Commercial | 35 | 39 | 4 | 58 | Varies | 4,287 | (15,312) |
| 14 | 3" Commercial | 2 | 2 | - | - | Varies | - | - |
| 15 | 4" Commercial | 2 | 1 | (1) | (1) | Varies | (138) | 825 |
| 16 | Subtotal Commercial | 89 | 91 | 2 | 55 | | 4,131 | $ (14,322) |
| 17 | | | | | | | | |
| 18 | Totals | 15,143 | 14,798 | (345) | (4,115) | | (22,130) | $ 122,612 |
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| 21 | | | | | | | | |

| Line No. | Class of Expense | Average Cost Per K Gallons Sold Per Sch. E-7 | Additional K Gallons To Be Sold | Additional Cost From Customer Growth |
|---|---|---|---|---|
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | Pumping | $ 0.30 | (22,130) | $ 6,639 |
| 28 | Water Treatment | 0.13 | (22,130) | 2,877 |
| 29 | | | | |
| 30 | Totals | | | $ 9,516 |
| 31 | | | | |
| 32 | | | | |
| 33 | *Gallons avoided water customers used to estimate wastewater pumping and treatment savings. | | | |
| 34 | | | | |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | |
|---|---|---|
| 1 | Staff Adjustment | $ 28,621 |
| 2 | Removal of duplicate reduction | 1,905 |
| 3 | Adjustment to Salaries and Wages | $ (26,716) |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | Adjustment to Salaries and Wages | $ (26,716) |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 4
Adjust Bad Debt Expense for Change in Revenue Levels



| Line No. | | |
|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ 95,689 |
| 2 | Adjusted Test Year Revenues | 6,643,812 |
| 3 | Bad Debt Expense Rate | 1.44% |
| 4 | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ 30,477 |
| 6 | | |
| 7 | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ 129,036 |
| 9 | | |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 6,643,812 | $ 6,643,812 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 13,287,624 | $ 13,287,624 |
| 4 | Proposed Revenue Requirement | 6,643,812 | $ 6,643,812 |
| 5 | Subtotal (Line 4 + Line 5) | 19,931,436 | 19,931,436 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 6,643,812 | $ 6,643,812 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 13,287,624 | $ 13,287,624 |
| 10 | Plus: 10% of CWIP - | 1,778,334 | 1,778,334 |
| 11 | Less: Net Book Value of Licensed Vehicles | 65,257 | $ 65,257 |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 15,000,701 | $ 15,000,701 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 3,150,147 | $ 3,150,147 |
| 15 | Composite Property Tax Rate | 15.2456% | 15.2456% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 480,259 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 480,259 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 480,259 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 480,259 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Bills) | | $ 2.64 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's number of bills. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's number of bills is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
| 35 | | | |
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| 37 | | | |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ (135,561) | $ 8,694,527 |
| 3 | Synchronized Interest | - | - |
| 4 | Arizona Taxable Income | $ (135,561) | $ 8,694,527 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ (9,446) | $ 605,835 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ (135,561) | $ 8,694,527 |
| 9 | Less Arizona Income Taxes | (9,446) | 605,835 |
| 10 | Federal Taxable Income | $ (126,115) | $ 8,088,693 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ (42,879) | $ 2,750,156 |
| 13 | | | |
| 14 | Total Income Tax | $ (52,325) | $ 3,355,990 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Adjusted Test Year Income Taxes as Filed (Sch. C-2, Line 31) | $ 90,848 | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ (143,173) | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ (52,325) |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 3,408,315 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 64,011,238 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.00% |
| 34 | Synchronized Interest (L32 X L33) | | $ - |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.8843% |
| 3 | Revenues (L1 - L2) | | | 99.1157% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.5168% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.652434** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 1.4403% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.8843% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Property Tax Rate Factor | | 0.0000% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Property Tax Rate Factor | 0.0000% | | |
| 20 | Federal and State Taxable Income (L18 - L19) | 100.0000% | | |
| 21 | Applicable Federal and State Income Tax Rate | 38.5989% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 38.5989% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
| 25 | | | | |
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# Moe

# Rebuttal Schedule

# SCWC

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 45,260,919 | $ 45,260,919 | $ 45,902,454 | $ 45,902,454 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ 1,969,624 | $ 1,969,624 | $ 1,753,427 | $ 1,753,427 |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | 4.35% | 4.35% | 3.82% | 3.82% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 3,842,652 | $ 3,842,652 | $ 3,897,118 | $ 3,897,118 |
| 8 | | | | | |
| 9 | Required Rate of Return | 8.49% | 8.49% | 8.49% | 8.49% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 1,873,028 | $ 1,873,028 | $ 2,143,691 | $ 2,143,691 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.643736 | 1.643736 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 3,081,292 | $ 3,081,292 | $ 3,523,663 | $ 3,523,663 |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 87,753,403 | $ - | $ 87,753,403 |
| 2 | Less: Accumulated Depreciation | (8,092,185) | 641,535 | (7,450,650) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 79,661,218 | $ 641,535 | $ 80,302,753 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | - | - | - |
| 8 | Advances in Aid of Construction (AIAC) | 33,770,450 | - | 33,770,450 |
| 9 | Customer Deposits | 1,136,087 | - | 1,136,087 |
| 10 | Deferred Income Tax Credits | - | - | - |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | 506,238 | - | 506,238 |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 45,260,919 | $ 45,260,919 | $ 45,902,454 |
| 19 | | | | |
| 20 | | | | |
| 21 | Note: The Company is not requesting an RCND calculation. | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
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| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | Supporting Schedules: | | Recap Schedules: | |
| 43 | B-2 | | A-1 | |
| 44 | B-3 | | | |
| 45 | E-1 | | | |
| 46 | B-5 | | | |
| 47 | | | | |
| 48 | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] ADJ #7 | [K] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | | |
| 1 | 303 Land and Land Rights | $ 44,856 | $ - | $ 44,856 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 44,856 |
| 2 | 304 Structures and Improvements | 9,447,338 | - | 9,447,338 | - | - | - | - | - | - | - | 9,447,338 |
| 3 | 306 Lake, River and Other Intakes | 1,855 | - | 1,855 | - | - | - | - | - | - | - | 1,855 |
| 4 | 307 Wells and Springs | 3,694,926 | - | 3,694,926 | - | - | - | - | - | - | - | 3,694,926 |
| 5 | 309 Supply Mains | 2,086,246 | - | 2,086,246 | - | - | - | - | - | - | - | 2,086,246 |
| 6 | 310 Power Generation Equipment | 323,093 | - | 323,093 | - | - | - | - | | - | - | 323,093 |
| 7 | 311 Pumping Equipment | 6,353,511 | - | 6,353,511 | - | - | - | - | - | - | - | 6,353,511 |
| 8 | 320 Water Treatment Equipment | 12,554 | - | 12,554 | - | - | - | - | - | - | - | 12,554 |
| 9 | 330 Distribution Reservoirs and Standpipes | 1,367,063 | - | 1,367,063 | - | - | - | - | - | - | - | 1,367,063 |
| 10 | 331 Transmission and Distribution Mains | 44,443,414 | - | 44,443,414 | - | - | - | - | - | - | - | 44,443,414 |
| 11 | 333 Services | 4,598,396 | - | 4,598,396 | - | - | - | - | - | - | - | 4,598,396 |
| 12 | 334 Meters and Meter Installations | 3,553,579 | - | 3,553,579 | - | - | - | - | - | - | - | 3,553,579 |
| 13 | 335 Hydrants | 4,340,566 | - | 4,340,566 | - | - | - | - | - | - | - | 4,340,566 |
| 14 | 336 Backflow Prevention Devices | 26,572 | - | 26,572 | - | - | - | - | - | - | - | 26,572 |
| 15 | 339 Other Plant and Miscellaneous Equipment | 695,109 | - | 695,109 | - | - | - | - | - | - | - | 695,109 |
| 16 | 340 Office Furniture and Equipment | 504,424 | - | 504,424 | - | - | - | - | - | - | - | 504,424 |
| 17 | 341 Transportation Equipment | 596,576 | - | 596,576 | - | - | - | - | - | - | - | 596,576 |
| 18 | 343 Tools, Shop and Garage Equipment | 65,276 | - | 65,276 | - | - | - | - | - | - | - | 65,276 |
| 19 | 344 Laboratory Equipment | 107,172 | - | 107,172 | - | - | - | - | - | - | - | 107,172 |
| 20 | 345 Power Operated Equipment | 60,372 | - | 60,372 | - | - | - | - | - | - | - | 60,372 |
| 21 | 346 Communication Equipment | 565,936 | - | 565,936 | - | - | - | - | - | - | - | 565,936 |
| 22 | 347 Miscellaneous Equipment | 80,859 | - | 80,859 | - | - | - | - | - | - | - | 80,859 |
| 23 | 348 Other Tangible Plant | 4,783,710 | - | 4,783,710 | - | - | - | - | - | - | - | 4,783,710 |
| 24 | | | | | | | | | | | | |
| 25 | Total Plant in Service | $ 87,753,403 | $ - | $ 87,753,403 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 87,753,403 |
| 26 | Less: Accumulated Depreciation | (8,092,185) | - | (8,092,185) | 641,535 | - | - | - | - | - | - | (7,450,650) |
| 27 | Net Plant in Service (L59 - L 60) | $ 79,661,218 | $ - | $ 79,661,218 | $ 641,535 | $ - | $ - | $ - | $ - | $ - | $ - | $ 80,302,753 |
| 28 | | | | | | | | | | | | |
| 29 | LESS: | | | | | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 31 | Advances in Aid of Construction (AIAC) | 33,770,450 | - | 33,770,450 | - | - | - | - | - | - | - | 33,770,450 |
| 32 | Customer Meter Deposits | 1,136,087 | - | 1,136,087 | - | - | - | - | - | - | - | 1,136,087 |
| 33 | Deferred Income Tax Credits | - | - | - | - | - | - | - | - | - | - | - |
| 34 | | | | | | | | | | | | |
| 35 | ADD: | | | | | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | 506,238 | - | 506,238 | - | - | - | - | - | - | - | 506,238 |
| 38 | Working Capital | - | - | - | - | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - | - | - | - | - |
| 40 | | | | | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 45,260,919 | $ 45,260,919 | $ 45,260,919 | $ 641,535 | $ - | $ - | $ - | $ - | $ - | $ - | $ 45,902,454 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | Recap Schedules: | | | | | | |
| 45 | E-1 | | | | | B-1 | | | | | | |
| 46 | | | | | | | | | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Rate Base Adjustment - Acceptance of RUCO Rate Base Adjustment



| Line No. | | | |
|---|---|---|---|
| 1 | | | |
| 2 | Accumulated Depreciation as Filed | $ | (8,092,185) |
| 3 | RUCO Calculated Accum. Depr. | | (7,450,650) |
| 4 | | | |
| 5 | Adjustment to Accum. Depr. | $ | 641,535 |
| 6 | | | |
| 7 | | | |
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| 37 | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| LINE NO. | DESCRIPTION | [A] Actual Test Year | [B] Pro Forma Adjustments - As Filed | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments | [E] Adjusted Test Year - Rebuttal | [F] Proposed Increase - Rebuttal | [G] Adjusted With Increase - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | Metered Water Sales | $ 8,941,756 | $ (196,982) | $ 8,744,774 | $ 299,141 | $ 9,043,916 | $ 3,137,458 | $ 12,181,373 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 511,684 | (145,738) | 365,946 | - | 365,946 | 386,205 | 752,151 |
| 5 | Total Operating Revenues | $ 9,453,440 | $ (342,720) | $ 9,110,720 | $ 299,141 | $ 9,409,861 | $ 3,523,663 | $ 12,933,524 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 899,375 | $ (118,324) | $ 781,051 | $ (36,448) | $ 744,603 | $ - | $ 744,603 |
| 9 | 604 Employee Pensions and Benefits | 213,648 | (23,665) | 189,983 | - | 189,983 | - | 189,983 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 507,556 | 46,842 | 554,398 | 16,603 | 571,001 | - | 571,001 |
| 12 | 616 Fuel for Power Production | 3,505 | - | 3,505 | - | 3,505 | - | 3,505 |
| 13 | 618 Chemicals | 41,783 | (1,328) | 40,455 | 1,328 | 41,783 | - | 41,783 |
| 14 | 620 Materials and Supplies | 18,969 | - | 18,969 | - | 18,969 | - | 18,969 |
| 15 | 620.08 Materials and Supplies | 297,033 | - | 297,033 | - | 297,033 | - | 297,033 |
| 16 | 635 Contractual Services - Testing | 36,113 | - | 36,113 | - | 36,113 | - | 36,113 |
| 17 | 636 Contractual Services - Other | 67,911 | - | 67,911 | - | 67,911 | - | 67,911 |
| 18 | 641 Rental of Building/Real Property | 94,369 | - | 94,369 | - | 94,369 | - | 94,369 |
| 19 | 642 Rental of Equipment | 7,803 | - | 7,803 | - | 7,803 | - | 7,803 |
| 20 | 650 Transportation Expenses | 45,296 | - | 45,296 | - | 45,296 | - | 45,296 |
| 21 | 657 Insurance - General Liability | 53,083 | - | 53,083 | - | 53,083 | - | 53,083 |
| 22 | 659 Insurance - Other | 4,647 | - | 4,647 | - | 4,647 | - | 4,647 |
| 23 | 660 Advertising Expense | 1,825 | (1,825) | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 53,333 | 53,333 | - | 53,333 | - | 53,333 |
| 25 | 670 Bad Debt Expense | 86,450 | 4,657 | 91,107 | (4,657) | 86,450 | 32,372 | 118,822 |
| 26 | 675 Miscellaneous Expenses | 34,629 | - | 34,629 | - | 34,629 | - | 34,629 |
| 27 | 403 Depreciation Expense | 3,431,687 | 74,798 | 3,506,485 | - | 3,506,485 | - | 3,506,485 |
| 28 | 408 Taxes Other Than Income | 69,007 | (53,078) | 15,929 | - | 15,929 | - | 15,929 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 423,523 | (423,523) | - | 674,421 | 674,421 | - | 674,421 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and | 6,823 | - | 6,823 | - | 6,823 | - | 6,823 |
| 31 | 409 Income Taxes | 924,207 | 313,967 | 1,238,174 | (135,909) | 1,102,265 | 1,347,599 | 2,449,864 |
| 32 | Total Operating Expenses | $ 7,269,242 | $ (128,146) | $ 7,141,096 | $ 515,338 | $ 7,656,434 | $ 1,379,971 | $ 9,036,405 |
| 33 | | | | | | | | |
| 34 | Utility Operating Income (Loss) | $ 2,184,198 | $ (214,574) | $ 1,969,624 | $ (216,197) | $ 1,753,427 | $ 2,143,691 | $ 3,897,118 |
| 35 | | | | | | | | |
| 36 | 414 Gains (Losses) from Disp of Util Prop | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | - | - | - | - | - | - | - |
| 38 | 427 Interest Expense | (62,121) | - | (62,121) | - | (62,121) | - | (62,121) |
| 39 | Total Other Income and Deductions | $ (62,121) | $ - | $ (62,121) | $ - | $ (62,121) | $ - | $ (62,121) |
| 40 | | | | | | | | |
| 41 | Net Income (Loss) | $ 2,122,077 | $ (214,574) | $ 1,907,503 | $ (216,197) | $ 1,691,306 | $ 2,143,691 | $ 3,834,997 |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 50 | E-2 | | | | | | A-1 | |
| 51 | C-2 | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | | | | | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] | [E] | [F] | [G] | [H] | [I] | [J] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | Metered Water Sales | $ 8,941,756 | $ (196,982) | $ 8,744,774 | $ 299,141 | $ - | $ - | $ - | $ - | $ - | $ 9,043,916 |
| 3 | *Water Sales - Unmetered* | - | - | - | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 511,684 | (145,739) | 365,946 | - | - | - | - | - | - | 365,946 |
| 5 | Total Operating Revenues | $ 9,453,440 | $ (342,720) | $ 9,110,720 | $ 299,141 | $ - | $ - | $ - | $ - | $ - | $ 9,409,861 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 899,375 | $ (118,324) | $ 781,051 | $ - | $ (36,448) | $ - | $ - | $ - | $ - | $ 744,603 |
| 9 | 604 Employee Pensions and Benefits | 213,648 | (23,665) | 189,983 | - | - | - | - | - | - | 189,983 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 507,556 | 46,842 | 554,398 | 16,603 | - | - | - | - | - | 571,001 |
| 12 | 616 Fuel for Power Production | 3,505 | - | 3,505 | - | - | - | - | - | - | 3,505 |
| 13 | 618 Chemicals | 41,783 | (1,328) | 40,455 | 1,328 | - | - | - | - | - | 41,783 |
| 14 | 620 Materials and Supplies | 18,969 | - | 18,969 | - | - | - | - | - | - | 18,969 |
| 15 | 620.08 Materials and Supplies | 297,033 | - | 297,033 | - | - | - | - | - | - | 297,033 |
| 16 | 635 Contractual Services - Testing | 36,113 | - | 36,113 | - | - | - | - | - | - | 36,113 |
| 17 | 636 Contractual Services - Other | 67,911 | - | 67,911 | - | - | - | - | - | - | 67,911 |
| 18 | 641 Rental of Building/Real Property | 94,369 | - | 94,369 | - | - | - | - | - | - | 94,369 |
| 19 | 642 Rental of Equipment | 7,803 | - | 7,803 | - | - | - | - | - | - | 7,803 |
| 20 | 650 Transportation Expenses | 45,296 | - | 45,296 | - | - | - | - | - | - | 45,296 |
| 21 | 657 Insurance - General Liability | 53,083 | - | 53,083 | - | - | - | - | - | - | 53,083 |
| 22 | 659 Insurance - Other | 4,647 | - | 4,647 | - | - | - | - | - | - | 4,647 |
| 23 | 660 Advertising Expense | 1,825 | (1,825) | - | - | - | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 53,333 | 53,333 | - | - | - | - | - | - | 53,333 |
| 25 | 670 Bad Debt Expense | 86,450 | 4,657 | 91,107 | - | - | - | (4,657) | - | - | 86,450 |
| 26 | 675 Miscellaneous Expenses | 34,629 | - | 34,629 | - | - | - | - | - | - | 34,629 |
| 27 | 403 Depreciation Expense | 3,431,687 | 74,798 | 3,506,485 | - | - | - | - | - | - | 3,506,485 |
| 28 | 408 Taxes Other Than Income | 69,007 | (53,078) | 15,929 | - | - | - | - | - | - | 15,929 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 423,523 | (423,523) | - | - | - | - | - | 674,421 | - | 674,421 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | 6,823 | - | 6,823 | - | - | - | - | - | - | 6,823 |
| 31 | 409 Income Taxes | 924,207 | 313,967 | 1,238,174 | - | - | - | - | - | (135,909) | 1,102,265 |
| 32 | Total Operating Expenses | $ 7,269,242 | $ (128,146) | $ 7,141,096 | $ 17,931 | $ (36,448) | $ - | $ (4,657) | $ 674,421 | $ (135,909) | $ 7,656,434 |
| 33 | | | | | | | | | | | |
| 34 | Operating Income (Loss) | $ 2,184,198 | $ (214,574) | $ 1,969,624 | $ 281,210 | $ 36,448 | $ - | $ 4,657 | $ (674,421) | $ 135,909 | $ 1,753,427 |
| 35 | | | | | | | | | | | |
| 36 | 414 Gains (Losses) from Disposition of Utility Property | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | - | - | - | - | - | - | - | - | - | - |
| 38 | 427 Interest Expense | (62,121) | - | (62,121) | - | - | - | - | - | - | (62,121) |
| 39 | Total Other Income and Deductions | $ (62,121) | $ - | $ (62,121) | $ - | $ - | $ - | $ - | $ - | $ - | $ (62,121) |
| 40 | | | | | | | | | | | |
| 41 | Net Income (Loss) | $ 2,122,077 | $ (214,574) | $ 1,907,503 | $ 281,210 | $ 36,448 | $ - | $ 4,657 | $ (674,421) | $ 135,909 | $ 1,691,306 |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | | | | | | |
| 45 | C-2 | | | | | | | | | | |
| 46 | E-2 | | | | | | | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 1
Remove Annualization Revenue & Expense to reflect End-of-Test Year Customer Counts



| Line No. | Class of Service | [A] Average No. of Customers Per Bill Count Sch. H-2 Col. A | [B] Year-End Number of Customers | [C] Average Additional Customers [B - A] | [D] Change in Bills to be Issued | [E] Average Gallons Sold Per Customer | [F] Additional K Gallons To Be Sold | [G] Additional Revenues at Present Rates |
|---|---|---|---|---|---|---|---|---|
| 1 | 5/8" Residential | 1,719 | 1,664 | (55) | (680) | Varies | (4,704) | $ 27,462 |
| 2 | 3/4" Residential | 13,210 | 12,917 | (293) | (3,512) | Varies | (21,613) | 134,863 |
| 3 | 1" Residential | 123 | 125 | 2 | 27 | Varies | 66 | (1,789) |
| 4 | 1.5" Residential | 1 | - | (1) | (5) | Varies | (11) | 542 |
| 5 | 2" Residential | 1 | 1 | - | - | Varies | - | - |
| 6 | Subtotal Residential | 15,054 | 14,707 | (347) | (4,170) | | (26,262) | $ 161,178 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | 5/8" Commercial | 4 | 4 | - | - | Varies | - | $ - |
| 10 | 3/4" Commercial | 4 | 4 | - | - | Varies | - | - |
| 11 | 1" Commercial | 17 | 16 | (1) | (2) | Varies | (18) | 167 |
| 12 | 1.5" Commercial | 25 | 25 | - | - | Varies | - | - |
| 13 | 2" Commercial | 35 | 39 | 4 | 58 | Varies | 4,287 | (22,595) |
| 14 | 3" Commercial | 2 | 2 | - | - | Varies | - | - |
| 15 | 4" Commercial | 2 | 1 | (1) | (1) | Varies | (138) | 981 |
| 16 | Subtotal Commercial | 89 | 91 | 2 | 55 | | 4,131 | $ (21,448) |
| 17 | | | | | | | | |
| 18 | 2" Construction | 42 | - | (42) | (499) | Varies | (38,393) | $ 138,215 |
| 19 | 3" Construction | 3 | - | (3) | (26) | Varies | (591) | 2,128 |
| 20 | 4" Construction | 1 | - | (1) | (5) | Varies | (167) | 601 |
| 21 | 8" Construction | 1 | - | (1) | (9) | Varies | (5,130) | 18,468 |
| 22 | Subtotal Construction | 47 | - | (47) | | | (44,281) | $ 159,412 |
| 23 | | | | | | | | |
| 24 | Totals | 15,190 | 14,798 | (392) | (4,115) | | (66,411) | $ 299,141 |
| 25 | | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |

| Line No. | Class of Expense | Average Cost Per Gallons Sold Per Sch. E-7 | Additional K Gallons To Be Sold | Additional Cost From Customer Growth |
|---|---|---|---|---|
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | Class of Expense | | | |
| 32 | | | | |
| 33 | Pumping | $ 0.25 | (66,411) | $ 16,603 |
| 34 | Water Treatment | 0.02 | (66,411) | 1,328 |
| 35 | | | | |
| 36 | Totals | | | $ 17,931 |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
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**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | | |
|---|---|---|---|
| 1 | Staff Adjustment | $ | 38,353 |
| 2 | Removal of duplicate reduction | | 1,905 |
| 3 | Adjustment to Salaries and Wages | $ | (36,448) |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | Adjustment to Salaries and Wages | $ | (36,448) |
| 8 | | | |
| 9 | | | |
| 10 | | | |
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**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 4
Adjust Bad Debt Expense for Change in Revenue Levels



| Line No. | | |
|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ 86,450 |
| 2 | Adjusted Test Year Revenues | 9,409,861 |
| 3 | Bad Debt Expense Rate | 0.92% |
| 4 | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ (4,657) |
| 6 | | |
| 7 | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ 32,372 |
| 9 | | |
| 10 | | |
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**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 9,409,861 | $ 9,409,861 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 18,819,722 | $ 18,819,722 |
| 4 | Proposed Revenue Requirement | 9,409,861 | $ 9,409,861 |
| 5 | Subtotal (Line 4 + Line 5) | 28,229,583 | 28,229,583 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 9,409,861 | $ 9,409,861 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 18,819,722 | $ 18,819,722 |
| 10 | Plus: 10% of CWIP - | 2,545,207 | 2,545,207 |
| 11 | Less: Net Book Value of Licensed Vehicles | 299,641 | $ 299,641 |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 21,065,288 | $ 21,065,288 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 4,423,711 | $ 4,423,711 |
| 15 | Composite Property Tax Rate | 15.2456% | 15.2456% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 674,421 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 674,421 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 674,421 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 674,421 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Gallons Sold x 1,000) | | $ 0.33 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's gallons sold/1,000. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's gallons sold/1,000 is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
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**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ 2,855,692 | $ 6,346,983 |
| 3 | Synchronized Interest | - | - |
| 4 | Arizona Taxable Income | $ 2,855,692 | $ 6,346,983 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ 198,985 | $ 442,258 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ 2,855,692 | $ 6,346,983 |
| 9 | Less Arizona Income Taxes | 198,985 | 442,258 |
| 10 | Federal Taxable Income | $ 2,656,708 | $ 5,904,725 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ 903,281 | $ 2,007,606 |
| 13 | | | |
| 14 | Total Income Tax | $ 1,102,265 | $ 2,449,864 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Test Year Income Taxes (Sch. C-2, Line 31) | $ 1,238,174 | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ (135,909) | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ 1,102,265 |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 1,347,599 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 45,902,454 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.00% |
| 34 | Synchronized Interest (L32 X L33) | | $ - |
| 35 | | | |
| 36 | | | |
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**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.5641% |
| 3 | Revenues (L1 - L2) | | | 99.4359% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.8370% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.643736** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 0.9187% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.5641% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Arizona State Income Tax Rate | | 6.9680% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Arizona State Income Tax Rate | 6.9680% | | |
| 20 | Federal Taxable Income (L18 - L19) | 93.0320% | | |
| 21 | Applicable Federal Income Tax Rate | 34.0000% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 31.6309% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
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# Moe

# Rebuttal Schedule

# VWC-TD

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 4,240,018 | $ 4,240,018 | $ 4,443,607 | $ 4,443,607 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (601,943) | $ (601,943) | $ (591,229) | $ (591,229) |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -14.20% | -14.20% | -13.31% | -13.31% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 405,346 | $ 405,346 | $ 384,372 | $ 384,372 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.56% | 9.56% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 1,007,289 | $ 1,007,289 | $ 975,601 | $ 975,601 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.651965 | 1.651965 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 1,657,077 | $ 1,657,077 | $ 1,611,660 | $ 1,611,660 |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
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| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |
| 26 | | | | | |
| 27 | | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 45,877,421 | $ - | $ 45,877,421 |
| 2 | Less: *Accumulated Depreciation* | (3,071,499) | 203,589 | (2,867,910) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 42,805,922 | $ 203,589 | $ 43,009,511 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | 791,938 | - | 791,938 |
| 8 | Advances in Aid of Construction (AIAC) | 37,992,781 | - | 37,992,781 |
| 9 | Customer Deposits | 162,132 | - | 162,132 |
| 10 | Deferred Income Tax Credits | - | - | - |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | 380,947 | - | 380,947 |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 4,240,018 | $ 203,589 | $ 4,443,607 |
| 19 | | | | |
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| 41 | | | | |
| 42 | Supporting Schedules: | | | Recap Schedules: |
| 43 | B-2 | | | A-1 |
| 44 | B-3 | | | |
| 45 | E-1 | | | |
| 46 | B-5 | | | |
| 47 | | | | |
| 48 | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] ADJ #7 | [K] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | | |
| 1 | 303 Land and Land Rights | $ 148,446 | $ - | $ 148,446 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 148,446 |
| 2 | 304 Structures and Improvements | 945,383 | - | 945,383 | - | - | - | - | - | - | - | 945,383 |
| 3 | 306 Lake, River and Other Intakes | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 307 Wells and Springs | 775,544 | - | 775,544 | - | - | - | - | - | - | - | 775,544 |
| 5 | 309 Supply Mains | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 310 Power Generation Equipment | 20,612 | - | 20,612 | - | - | - | - | | - | - | 20,612 |
| 7 | 311 Pumping Equipment | 7,803,214 | - | 7,803,214 | - | - | - | - | - | - | - | 7,803,214 |
| 8 | 320 Water Treatment Equipment | 3,892,532 | - | 3,892,532 | - | - | - | - | - | - | - | 3,892,532 |
| 9 | 330 Distribution Reservoirs ad Standpipes | 3,439,680 | - | 3,439,680 | - | - | - | - | - | - | - | 3,439,680 |
| 10 | 331 Transmission and Distribution Mains | 19,407,008 | - | 19,407,008 | - | - | - | - | - | - | - | 19,407,008 |
| 11 | 333 Services | 2,795,075 | - | 2,795,075 | - | - | - | - | - | - | - | 2,795,075 |
| 12 | 334 Meters and Meter Installations | 1,562,332 | - | 1,562,332 | - | - | - | - | - | - | - | 1,562,332 |
| 13 | 335 Hydrants | 1,900,270 | - | 1,900,270 | - | - | - | - | - | - | - | 1,900,270 |
| 14 | 336 Backflow Prevention Devices | 12,674 | - | 12,674 | - | - | - | - | - | - | - | 12,674 |
| 15 | 339 Other Plant and Miscellaneous Equipment | 114,439 | - | 114,439 | - | - | - | - | - | - | - | 114,439 |
| 16 | 340 Office Furniture and Equipment | 46,206 | - | 46,206 | - | - | - | - | - | - | - | 46,206 |
| 17 | 341 Transportation Equipment | 275,038 | - | 275,038 | - | - | - | - | - | - | - | 275,038 |
| 18 | 343 Tools, Shop and Garage Equipment | 90,582 | - | 90,582 | - | - | - | - | - | - | - | 90,582 |
| 19 | 344 Laboratory Equipment | 42,171 | - | 42,171 | - | - | - | - | - | - | - | 42,171 |
| 20 | 345 Power Operated Equipment | 55,588 | - | 55,588 | - | - | - | - | - | - | - | 55,588 |
| 21 | 346 Communication Equipment | 20,584 | - | 20,584 | - | - | - | - | - | - | - | 20,584 |
| 22 | 347 Miscellaneous Equipment | 15,371 | - | 15,371 | - | - | - | - | - | - | - | 15,371 |
| 23 | 348 Other Tangible Plant | 2,514,672 | - | 2,514,672 | - | - | - | - | - | - | - | 2,514,672 |
| 24 | | | | | | | | | | | | |
| 25 | Total Plant in Service | $ 45,877,421 | $ - | $ 45,877,421 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 45,877,421 |
| 26 | Less: Accumulated Depreciation | (3,071,499) | - | (3,071,499) | 203,589 | - | - | - | - | - | - | (2,867,910) |
| 27 | Net Plant in Service (L59 - L 60) | $ 42,805,922 | $ - | $ 42,805,922 | $ 203,589 | $ - | $ - | $ - | $ - | $ - | $ - | $ 43,009,511 |
| 28 | | | | | | | | | | | | |
| 29 | LESS: | | | | | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ 791,938 | $ - | $ 791,938 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 791,938 |
| 31 | Advances in Aid of Construction (AIAC) | 37,992,781 | - | 37,992,781 | - | - | - | - | - | - | - | 37,992,781 |
| 32 | Customer Meter Deposits | 162,132 | - | 162,132 | - | - | - | - | - | - | - | 162,132 |
| 33 | Deferred Income Tax Credits | - | - | - | - | - | - | - | - | - | - | - |
| 34 | | | | | | | | | | | | |
| 35 | ADD: | | | | | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | 380,947 | - | 380,947 | - | - | - | - | - | - | - | 380,947 |
| 38 | Working Capital | - | - | - | - | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - | - | - | - | - |
| 40 | | | | | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 4,240,018 | $ - | $ 4,240,018 | $ 203,589 | $ - | $ - | $ - | $ - | $ - | $ - | $ 4,443,607 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | | | Recap Schedules: | | | | |
| 45 | E-1 | | | | | | | B-1 | | | | |
| 46 | | | | | | | | | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Rate Base Adjustment - Acceptance of RUCO Rate Base Adjustment



| Line No. | | | |
|---|---|---|---|
| 1 | | | |
| 2 | Accumulated Depreciation as Filed | $ | (3,071,499) |
| 3 | RUCO Calculated Accum. Depr. | | (2,867,910) |
| 4 | | | |
| 5 | Adjustment to Accum. Depr. | $ | 203,589 |
| 6 | | | |
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**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| Line No. | DESCRIPTION | [A] Actual Test Year | [B] Pro Forma Adjustments - As Filed | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments | [E] Adjusted Test Year - Rebuttal | [F] Proposed Increase - Rebuttal | [G] Adjusted With Increase - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | Metered Water Sales | $ 2,805,048 | $ (145,110) | $ 2,659,938 | $ 143,041 | $ 2,802,979 | $ 1,493,650 | $ 4,296,629 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 266,111 | (31,628) | 234,483 | - | 234,483 | 117,810 | 352,293 |
| 5 | Total Operating Revenues | $ 3,071,159 | $ (176,738) | $ 2,894,421 | $ 143,041 | $ 3,037,462 | $ 1,611,660 | $ 4,649,122 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 704,857 | $ (34,049) | $ 670,808 | $ (55,315) | $ 615,493 | $ - | $ 615,493 |
| 9 | 604 Employee Pensions and Benefits | 149,890 | (6,810) | 143,080 | - | 143,080 | - | 143,080 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 297,842 | (8,229) | 281,613 | 16,356 | 307,969 | - | 307,969 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 152,137 | (8,519) | 143,618 | 8,519 | 152,137 | - | 152,137 |
| 14 | 620 Materials and Supplies | 31,821 | - | 31,821 | - | 31,821 | - | 31,821 |
| 15 | 620.08 Materials and Supplies | 128,737 | - | 128,737 | - | 128,737 | - | 128,737 |
| 16 | 635 Contractual Services - Testing | 33,729 | - | 33,729 | - | 33,729 | - | 33,729 |
| 17 | 636 Contractual Services - Other | 41,898 | - | 41,898 | - | 41,898 | - | 41,898 |
| 18 | 641 Rental of Building/Real Property | 37,473 | - | 37,473 | - | 37,473 | - | 37,473 |
| 19 | 642 Rental of Equipment | 4,239 | - | 4,239 | - | 4,239 | - | 4,239 |
| 20 | 650 Transportation Expenses | 67,812 | - | 67,812 | - | 67,812 | - | 67,812 |
| 21 | 657 Insurance - General Liability | 17,098 | - | 17,098 | - | 17,098 | - | 17,098 |
| 22 | 659 Insurance - Other | 3,336 | - | 3,336 | - | 3,336 | - | 3,336 |
| 23 | 660 Advertising Expense | 123 | (123) | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 18,667 | 18,667 | - | 18,667 | - | 18,667 |
| 25 | 670 Bad Debt Expense | 42,898 | (13,954) | 28,944 | 13,954 | 42,898 | 22,761 | 65,659 |
| 26 | 675 Miscellaneous Expenses | 28,042 | - | 28,042 | - | 28,042 | - | 28,042 |
| 27 | 403 Depreciation Expense | 1,135,750 | 1,064,236 | 2,199,986 | - | 2,199,986 | - | 2,199,986 |
| 28 | 408 Taxes Other Than Income | 18,529 | (12,644) | 5,885 | - | 5,885 | - | 5,885 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 118,368 | (118,368) | - | 143,236 | 143,236 | - | 143,236 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and L | 2,101 | - | 2,101 | - | 2,101 | - | 2,101 |
| 31 | 409 Income Taxes | 55,849 | (458,371) | (402,522) | 5,577 | (396,945) | 613,297 | 216,352 |
| 32 | Total Operating Expenses | $ 3,072,529 | $ 423,836 | $ 3,496,365 | $ 132,327 | $ 3,628,692 | $ 636,058 | $ 4,264,750 |
| 33 | | | | | | | | |
| 34 | Utility Operating Income (Loss) | $ (1,370) | $ (600,573) | $ (601,943) | $ 10,714 | $ (591,229) | $ 975,601 | $ 384,372 |
| 35 | | | | | | | | |
| 36 | 414 Gains (Losses) from Disp of Util Prop | $ 285 | $ - | $ 285 | $ - | $ 285 | $ - | $ 285 |
| 37 | 419 Interest and Dividend Income | 12 | - | 12 | - | 12 | - | 12 |
| 38 | 427 Interest Expense | (148,766) | - | (148,766) | - | (148,766) | - | (148,766) |
| 39 | Total Other Income and Deductions | $ (148,469) | $ - | $ (148,469) | $ - | $ (148,469) | $ - | $ (148,469) |
| 40 | | | | | | | | |
| 41 | Net Income (Loss) | $ (149,839) | $ (600,573) | $ (750,412) | $ 10,714 | $ (739,698) | $ 975,601 | $ 235,903 |
| 42 | | | | | | | | |
| 43 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 44 | E-2 | | | | | | A-1 | |
| 45 | C-2 | | | | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | Metered Water Sales | $ 2,805,048 | $ (145,110) | $ 2,659,938 | $ 143,041 | $ - | $ - | $ - | $ - | $ - | $ 2,802,979 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 266,111 | (31,628) | 234,483 | - | - | - | - | - | - | 234,483 |
| 5 | Total Operating Revenues | $ 3,071,159 | $ (176,738) | $ 2,894,421 | $ 143,041 | $ - | $ - | $ - | $ - | $ - | $ 3,037,462 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 704,857 | $ (34,049) | $ 670,808 | $ - | $ (55,315) | $ - | $ - | $ - | $ - | $ 615,493 |
| 9 | 604 Employee Pensions and Benefits | 149,890 | (6,810) | 143,080 | - | - | - | - | - | - | 143,080 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 297,842 | (6,229) | 291,613 | 16,356 | - | - | - | - | - | 307,969 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 152,137 | (8,519) | 143,618 | 8,519 | - | - | - | - | - | 152,137 |
| 14 | 620 Materials and Supplies | 31,821 | - | 31,821 | - | - | - | - | - | - | 31,821 |
| 15 | 620.08 Materials and Supplies | 128,737 | - | 128,737 | - | - | - | - | - | - | 128,737 |
| 16 | 635 Contractual Services - Testing | 33,729 | - | 33,729 | - | - | - | - | - | - | 33,729 |
| 17 | 636 Contractual Services - Other | 41,898 | - | 41,898 | - | - | - | - | - | - | 41,898 |
| 18 | 641 Rental of Building/Real Property | 37,473 | - | 37,473 | - | - | - | - | - | - | 37,473 |
| 19 | 642 Rental of Equipment | 4,239 | - | 4,239 | - | - | - | - | - | - | 4,239 |
| 20 | 650 Transportation Expenses | 67,812 | - | 67,812 | - | - | - | - | - | - | 67,812 |
| 21 | 657 Insurance - General Liability | 17,098 | - | 17,098 | - | - | - | - | - | - | 17,098 |
| 22 | 659 Insurance - Other | 3,336 | - | 3,336 | - | - | - | - | - | - | 3,336 |
| 23 | 660 Advertising Expense | 123 | (123) | - | - | - | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 18,667 | 18,667 | - | - | - | - | - | - | 18,667 |
| 25 | 670 Bad Debt Expense | 42,898 | (13,954) | 28,944 | - | - | - | 13,954 | - | - | 42,898 |
| 26 | 675 Miscellaneous Expenses | 28,042 | - | 28,042 | - | - | - | - | - | - | 28,042 |
| 27 | 403 Depreciation Expense | 1,135,750 | 1,064,236 | 2,199,986 | - | - | - | - | - | - | 2,199,986 |
| 28 | 408 Taxes Other Than Income | 18,529 | (12,644) | 5,885 | - | - | - | - | - | - | 5,885 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 118,368 | (118,368) | - | - | - | - | - | 143,236 | - | 143,236 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | 2,101 | - | 2,101 | - | - | - | - | - | - | 2,101 |
| 31 | 409 Income Taxes | 55,849 | (458,371) | (402,522) | - | - | - | - | - | 5,577 | (396,945) |
| 32 | Total Operating Expenses | $ 3,072,529 | $ 423,836 | $ 3,496,365 | $ 24,875 | $ (55,315) | $ - | $ 13,954 | $ 143,236 | $ 5,577 | $ 3,628,692 |
| 33 | | | | | | | | | | | |
| 34 | Operating Income (Loss) | $ (1,370) | $ (600,573) | $ (601,943) | $ 118,166 | $ 55,315 | $ - | $ (13,954) | $ (143,236) | $ (5,577) | $ (591,229) |
| 35 | | | | | | | | | | | |
| 36 | 414 Gains (Losses) from Disposition of Utility Property | $ 285 | $ - | $ 285 | $ - | $ - | $ - | $ - | $ - | $ - | $ 285 |
| 37 | 419 Interest and Dividend Income | 12 | - | 12 | - | - | - | - | - | - | 12 |
| 38 | 427 Interest Expense | (148,766) | - | (148,766) | - | - | - | - | - | - | (148,766) |
| 39 | Total Other Income and Deductions | $ (148,469) | $ - | $ (148,469) | $ - | $ - | $ - | $ - | $ - | $ - | $ (148,469) |
| 40 | | | | | | | | | | | |
| 41 | Net Income (Loss) | $ (149,839) | $ (600,573) | $ (750,412) | $ 118,166 | $ 55,315 | $ - | $ (13,954) | $ (143,236) | $ (5,577) | $ (739,698) |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | | | | | | |
| 45 | C-2 | | | | | | | | | | |
| 46 | E-2 | | | | | | | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 1
Remove Annualization Revenue & Expense to reflect End-of-Test Year Customer Counts



| Line No. | Class of Service | [A] Average No. of Customers Per Bill Count Sch. H-2 Col. A | [B] Year-End Number of Customers | [C] Average Additional Customers [B - A] | [D] Change in Bills to be Issued | [E] Average Gallons Sold Per Customer | [F] Additional K Gallons To Be Sold | [G] Additional Revenues at Present Rates |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 1 | 5/8" Residential, Town Division | 4,661 | 4,728 | 67 | 813 | Varies | 2,847 | $ (18,711) |
| 2 | 3/4" Residential, Town Division | 99 | 23 | (76) | (901) | Varies | (4,204) | 25,539 |
| 3 | 1" Residential, Town Division | 75 | 79 | 4 | 49 | Varies | 380 | (2,923) |
| 4 | 2" Residential, Town Division | 15 | 14 | (1) | (8) | Varies | (862) | 3,627 |
| 5 | Subtotal Residential | 4,850 | 4,844 | (6) | (47) | | (1,840) | $ 7,531 |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | 5/8" Commercial, Town Division | 14 | 17 | 3 | 36 | Varies | 295 | $ (1,312) |
| 9 | 3/4" Commercial, Town Division | 1 | - | (1) | (7) | Varies | (41) | 222 |
| 10 | 1" Commercial, Town Division | 4 | 4 | - | - | Varies | - | - |
| 11 | 1.5" Commercial, Town Division | 2 | 2 | - | - | Varies | - | - |
| 12 | 2" Commercial, Town Division | 21 | 23 | 2 | 33 | Varies | 3,793 | (11,276) |
| 13 | 3" Commercial, Town Division | 2 | 2 | - | - | Varies | - | - |
| 14 | 4" Commercial, Town Division | 1 | - | (1) | (6) | Varies | (8) | 4,223 |
| 15 | 6" Commercial, Town Division | 1 | 1 | - | - | Varies | - | - |
| 16 | Subtotal Commercial | 46 | 49 | 3 | 56 | | 4,039 | $ (8,144) |
| 17 | | | | | | | | |
| 18 | 2" Construction, TD | 15 | - | (15) | (178) | Varies | (32,772) | $ 119,538 |
| 19 | 3" Construction, TD | 2 | - | (2) | (16) | Varies | (1,592) | 8,153 |
| 20 | 4" Construction, TD | 1 | - | (1) | (10) | Varies | (331) | 7,945 |
| 21 | 6" Construction, TD | 1 | - | (1) | (5) | Varies | (1,580) | 8,017 |
| 22 | | 19 | - | (19) | (209) | | (36,274) | $ 143,654 |
| 23 | | | | | | | | |
| 24 | Totals | 4,915 | 4,893 | (22) | (200) | | (34,075) | $ 143,041 |
| 25 | | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |

| Line No. | Class of Expense | Average Cost Per Gallons Sold Per Sch. E-7 | Additional K Gallons To Be Sold | Additional Cost From Customer Growth |
|---|---|---|---|---|
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | Pumping | $ 0.48 | (34,075) | $ 16,356 |
| 34 | Water Treatment | $ 0.25 | (34,075) | $ 8,519 |
| 35 | | | | |
| 36 | Totals | | | $ 24,875 |
| 37 | | | | |
| 38 | | | | |
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**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | | |
|---|---|---|---|
| 1 | Staff Adjustment | $ | 61,633 |
| 2 | Removal of duplicate reduction | | 6,318 |
| 3 | Adjustment to Salaries and Wages | $ | (55,315) |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | Adjustment to Salaries and Wages | $ | (55,315) |
| 8 | | | |
| 9 | | | |
| 10 | | | |
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**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 3
Adjustment to Purchased Power Expense



| Line No. |
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| 1 |
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**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 4
Adjust Bad Debt Expense for Change in Revenue Levels



| Line No. | | |
|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ 42,898 |
| 2 | Adjusted Test Year Revenues | 3,037,462 |
| 3 | Bad Debt Expense Rate | 1.4123% |
| 4 | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ 13,954 |
| 6 | | |
| 7 | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ 22,761 |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
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| 15 | | |
| 16 | | |
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**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 3,037,462 | $ 3,037,462 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 6,074,925 | $ 6,074,925 |
| 4 | Proposed Revenue Requirement | 3,037,462 | $ 3,037,462 |
| 5 | Subtotal (Line 4 + Line 5) | 9,112,387 | 9,112,387 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 3,037,462 | $ 3,037,462 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 6,074,925 | $ 6,074,925 |
| 10 | Plus: 10% of CWIP - | 415,844 | 415,844 |
| 11 | Less: Net Book Value of Licensed Vehicles | 96,323 | $ 96,323 |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 6,394,446 | $ 6,394,446 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 1,342,834 | $ 1,342,834 |
| 15 | Composite Property Tax Rate | 10.6667% | 10.6667% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 143,236 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 143,236 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 143,236 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 143,236 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Gallons Sold x 1,000) | | $ 0.23 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's gallons sold/1,000. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's gallons sold/1,000 is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
| 35 | | | |
| 36 | | | |
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**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ (988,174) | $ 600,724 |
| 3 | Synchronized Interest | 40,210 | 40,210 |
| 4 | Arizona Taxable Income | $ (1,028,384) | $ 560,514 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ (71,658) | $ 39,057 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ (1,028,384) | $ 560,514 |
| 9 | Less Arizona Income Taxes | (71,658) | 39,057 |
| 10 | Federal Taxable Income | $ (956,727) | $ 521,457 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ (325,287) | $ 177,295 |
| 13 | | | |
| 14 | Total Income Tax | $ (396,945) | $ 216,352 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Test Year Income Taxes (Sch. C-2, Line 31) | $ (402,522) | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ 5,577 | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ (396,945) |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 613,297 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 4,443,607 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.90% |
| 34 | Synchronized Interest (L32 X L33) | | $ 40,210 |
| 35 | | | |
| 36 | | | |
| 37 | | | |
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| 39 | | | |
| 40 | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.8672% |
| 3 | Revenues (L1 - L2) | | | 99.1328% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.5340% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.651965** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 1.4123% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.8672% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Arizona State Income Tax Rate | | 6.9680% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Arizona State Income Tax Rate | 6.9680% | | |
| 20 | Federal Taxable Income (L18 - L19) | 93.0320% | | |
| 21 | Applicable Federal Income Tax Rate | 34.0000% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 31.6309% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
| 25 | | | | |
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# Moe

# Rebuttal Schedule

# VWC-GBD

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules** Schedule A-1
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 929,057 | $ 929,057 | $ 895,377 | $ 895,377 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (4,404) | $ (4,404) | $ 11,614 | $ 11,614 |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -0.47% | -0.47% | 1.30% | 1.30% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 90,304 | $ 90,304 | $ 77,450 | $ 77,450 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.72% | 9.72% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 94,708 | $ 94,708 | $ 65,836 | $ 65,836 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.646464 | 1.646464 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 155,803 | $ 155,803 | $ 108,396 | $ 108,396 |
| 16 | | | | | |
| 17 | | | | | |
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| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |
| 26 | | | | | |
| 27 | | | | | |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 2,832,537 | $ - | $ 2,832,537 |
| 2 | Less: Accumulated Depreciation | (898,484) | (33,680) | (932,164) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 1,934,053 | $ (33,680) | $ 1,900,373 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | 336,583 | - | 336,583 |
| 8 | Advances in Aid of Construction (AIAC) | 747,555 | - | 747,555 |
| 9 | Customer Deposits | 11,080 | - | 11,080 |
| 10 | Deferred Income Tax Credits | - | - | - |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | 90,222 | - | 90,222 |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 929,057 | $ (33,680) | $ 895,377 |
| 19 | | | | |
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| 41 | | | | |
| 42 | Supporting Schedules: | | Recap Schedules: | |
| 43 | B-2 | | A-1 | |
| 44 | B-3 | | | |
| 45 | E-1 | | | |
| 46 | B-5 | | | |
| 47 | | | | |
| 48 | | | | |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] ADJ #7 | [K] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | | |
| 1 | 303 Land and Land Rights | $ 27,898 | $ - | $ 27,898 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 27,898 |
| 2 | 304 Structures and Improvements | 39,169 | - | 39,169 | - | - | - | - | - | - | - | 39,169 |
| 3 | 306 Lake, River and Other Intakes | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 307 Wells and Springs | 115,895 | - | 115,895 | - | - | - | - | - | - | - | 115,895 |
| 5 | 309 Supply Mains | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 310 Power Generation Equipment | - | - | - | - | - | - | - | | - | - | - |
| 7 | 311 Pumping Equipment | 472,851 | - | 472,851 | - | - | - | - | - | - | - | 472,851 |
| 8 | 320 Water Treatment Equipment | 729,148 | - | 729,148 | - | - | - | - | - | - | - | 729,148 |
| 9 | 330 Distribution Reservoirs ad Standpipes | 588,545 | - | 588,545 | - | - | - | - | - | - | - | 588,545 |
| 10 | 331 Transmission and Distribution Mains | 712,346 | - | 712,346 | - | - | - | - | - | - | - | 712,346 |
| 11 | 333 Services | 37,406 | - | 37,406 | - | - | - | - | - | - | - | 37,406 |
| 12 | 334 Meters and Meter Installations | 35,389 | - | 35,389 | - | - | - | - | - | - | - | 35,389 |
| 13 | 335 Hydrants | 40,757 | - | 40,757 | - | - | - | - | - | - | - | 40,757 |
| 14 | 336 Backflow Prevention Devices | 5,432 | - | 5,432 | - | - | - | - | - | - | - | 5,432 |
| 15 | 339 Other Plant and Miscellaneous Equipment | 4,284 | - | 4,284 | - | - | - | - | - | - | - | 4,284 |
| 16 | 340 Office Furniture and Equipment | - | - | - | - | - | - | - | - | - | - | - |
| 17 | 341 Transportation Equipment | - | - | - | - | - | - | - | - | - | - | - |
| 18 | 343 Tools, Shop and Garage Equipment | 1,650 | - | 1,650 | - | - | - | - | - | - | - | 1,650 |
| 19 | 344 Laboratory Equipment | - | - | - | - | - | - | - | - | - | - | - |
| 20 | 345 Power Operated Equipment | - | - | - | - | - | - | - | - | - | - | - |
| 21 | 346 Communication Equipment | 4,225 | - | 4,225 | - | - | - | - | - | - | - | 4,225 |
| 22 | 347 Miscellaneous Equipment | 10,089 | - | 10,089 | - | - | - | - | - | - | - | 10,089 |
| 23 | 348 Other Tangible Plant | 7,453 | - | 7,453 | - | - | - | - | - | - | - | 7,453 |
| 24 | | | | | | | | | | | | |
| 25 | Total Plant in Service | $ 2,832,537 | $ - | $ 2,832,537 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,832,537 |
| 26 | Less: Accumulated Depreciation | (898,484) | - | (898,484) | (33,680) | - | - | - | - | - | - | (932,164) |
| 27 | Net Plant in Service (L59 - L 60) | $ 1,934,053 | $ - | $ 1,934,053 | $ (33,680) | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,900,373 |
| 28 | | | | | | | | | | | | |
| 29 | LESS: | | | | | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ 336,583 | $ - | $ 336,583 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 336,583 |
| 31 | Advances in Aid of Construction (AIAC) | 747,555 | - | 747,555 | - | - | - | - | - | - | - | 747,555 |
| 32 | Customer Meter Deposits | 11,080 | - | 11,080 | - | - | - | - | - | - | - | 11,080 |
| 33 | Deferred Income Tax Credits | - | - | - | - | - | - | - | - | - | - | - |
| 34 | | | | | | | | | | | | |
| 35 | ADD: | | | | | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | 90,222 | - | 90,222 | - | - | - | - | - | - | - | 90,222 |
| 38 | Working Capital | - | - | - | - | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - | - | - | - | - |
| 40 | | | | | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 929,057 | $ - | $ 929,057 | $ (33,680) | $ - | $ - | $ - | $ - | $ - | $ - | $ 895,377 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | Recap Schedules: | | | | | | |
| 45 | E-1 | | | | | B-1 | | | | | | |
| 46 | | | | | | | | | | | | |

| Line No. | | | |
|---|---|---|---|
| 1 | | | |
| 2 | Accumulated Depreciation as Filed | $ | (898,484) |
| 3 | RUCO Calculated Accum. Depr. | | (932,164) |
| 4 | | | |
| 5 | Adjustment to Accum. Depr. | $ | (33,680) |
| 6 | | | |
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**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| Line No. | DESCRIPTION | [A] Actual Test Year | [B] Pro Forma Adjustments - As Filed | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments | [E] Adjusted Test Year - Rebuttal | [F] Proposed Increase - Rebuttal | [G] Adjusted With Increase - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | Metered Water Sales | $ 365,114 | $ (42,334) | $ 322,780 | $ 43,655 | $ 366,435 | $ 98,248 | $ 464,682 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 14,039 | - | 14,039 | - | 14,039 | 10,150 | 24,189 |
| 5 | Total Operating Revenues | $ 379,153 | $ (42,334) | $ 336,819 | $ 43,655 | $ 380,474 | $ 108,398 | $ 488,871 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 78,836 | $ (2,619) | $ 76,217 | $ (7,016) | $ 69,201 | $ - | $ 69,201 |
| 9 | 604 Employee Pensions and Benefits | 16,688 | (524) | 16,164 | - | 16,164 | - | 16,164 |
| 10 | 610 Purchased Water | 52,085 | - | 52,085 | - | 52,085 | - | 52,085 |
| 11 | 615 Purchased Power | 26,107 | (3,542) | 22,565 | 4,429 | 26,995 | - | 26,995 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 13,043 | (2,282) | 10,761 | 2,282 | 13,043 | - | 13,043 |
| 14 | 620 Materials and Supplies | 4,236 | - | 4,236 | - | 4,236 | - | 4,236 |
| 15 | 620.08 Materials and Supplies | 16,551 | - | 16,551 | - | 16,551 | - | 16,551 |
| 16 | 635 Contractual Services - Testing | - | - | - | - | - | - | - |
| 17 | 636 Contractual Services - Other | 3,774 | - | 3,774 | - | 3,774 | - | 3,774 |
| 18 | 641 Rental of Building/Real Property | 593 | - | 593 | - | 593 | - | 593 |
| 19 | 642 Rental of Equipment | 3,686 | - | 3,686 | - | 3,686 | - | 3,686 |
| 20 | 650 Transportation Expenses | 56 | - | 56 | - | 56 | - | 56 |
| 21 | 657 Insurance - General Liability | 9,876 | - | 9,876 | - | 9,876 | - | 9,876 |
| 22 | 659 Insurance - Other | 2,073 | - | 2,073 | - | 2,073 | - | 2,073 |
| 23 | 660 Advertising Expense | 336 | (336) | - | - | - | - | - |
| 24 | 667 Rate Case Expense | 22 | 1,333 | 1,355 | - | 1,355 | - | 1,355 |
| 25 | 670 Bad Debt Expense | 4,120 | (752) | 3,368 | 752 | 4,120 | 1,174 | 5,294 |
| 26 | 675 Miscellaneous Expenses | 6,644 | - | 6,644 | - | 6,644 | - | 6,644 |
| 27 | 403 Depreciation Expense | 95,385 | 18,195 | 113,580 | - | 113,580 | - | 113,580 |
| 28 | 408 Taxes Other Than Income | 3,340 | - | 3,340 | - | 3,340 | - | 3,340 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 15,527 | (15,527) | - | 17,015 | 17,015 | - | 17,015 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and L | - | - | - | - | - | - | - |
| 31 | 409 Income Taxes | 13,939 | (19,642) | (5,703) | 10,176 | 4,473 | 41,387 | 45,860 |
| 32 | Total Operating Expenses | $ 368,917 | $ (25,694) | $ 341,223 | $ 27,637 | $ 368,860 | $ 42,560 | $ 411,420 |
| 33 | | | | | | | | |
| 34 | Utility Operating Income (Loss) | $ 12,236 | $ (16,640) | $ (4,404) | $ 16,018 | $ 11,614 | $ 65,836 | $ 77,450 |
| 35 | | | | | | | | |
| 36 | 414 Gains (Losses) from Disp of Util Prop | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | - | - | - | - | - | - | - |
| 38 | 427 Interest Expense | (8,548) | - | (8,548) | - | (8,548) | - | (8,548) |
| 39 | Total Other Income and Deductions | $ (8,548) | $ - | $ (8,548) | $ - | $ (8,548) | $ - | $ (8,548) |
| 40 | | | | | | | | |
| 41 | Net Income (Loss) | $ 3,688 | $ (16,640) | $ (12,952) | $ 16,018 | $ 3,066 | $ 65,836 | $ 68,902 |
| 42 | | | | | | | | |
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| 44 | | | | | | | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 49 | E-2 | | | | | | A-1 | |
| 50 | C-2 | | | | | | | |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | Metered Water Sales | $ 365,114 | $ (42,334) | $ 322,780 | $ 43,655 | $ - | $ - | $ - | $ - | $ - | $ 366,435 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 14,039 | - | 14,039 | - | - | - | - | - | - | 14,039 |
| 5 | Total Operating Revenues | $ 379,153 | $ (42,334) | $ 336,819 | $ 43,655 | $ - | $ - | $ - | $ - | $ - | $ 380,474 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 78,836 | $ (2,619) | $ 76,217 | $ - | $ (7,016) | $ - | $ - | $ - | $ - | $ 69,201 |
| 9 | 604 Employee Pensions and Benefits | 16,688 | (524) | 16,164 | - | - | - | - | - | - | 16,164 |
| 10 | 610 Purchased Water | 52,085 | - | 52,085 | - | - | - | - | - | - | 52,085 |
| 11 | 615 Purchased Power | 26,107 | (3,542) | 22,565 | 4,429 | - | - | - | - | - | 26,995 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 13,043 | (2,282) | 10,761 | 2,282 | - | - | - | - | - | 13,043 |
| 14 | 620 Materials and Supplies | 4,236 | - | 4,236 | - | - | - | - | - | - | 4,236 |
| 15 | 620.08 Materials and Supplies | 16,551 | - | 16,551 | - | - | - | - | - | - | 16,551 |
| 16 | 635 Contractual Services - Testing | - | - | - | - | - | - | - | - | - | - |
| 17 | 636 Contractual Services - Other | 3,774 | - | 3,774 | - | - | - | - | - | - | 3,774 |
| 18 | 641 Rental of Building/Real Property | 593 | - | 593 | - | - | - | - | - | - | 593 |
| 19 | 642 Rental of Equipment | 3,686 | - | 3,686 | - | - | - | - | - | - | 3,686 |
| 20 | 650 Transportation Expenses | 56 | - | 56 | - | - | - | - | - | - | 56 |
| 21 | 657 Insurance - General Liability | 9,876 | - | 9,876 | - | - | - | - | - | - | 9,876 |
| 22 | 659 Insurance - Other | 2,073 | - | 2,073 | - | - | - | - | - | - | 2,073 |
| 23 | 660 Advertising Expense | 336 | (336) | - | - | - | - | - | - | - | - |
| 24 | 667 Rate Case Expense | 22 | 1,333 | 1,355 | - | - | - | - | - | - | 1,355 |
| 25 | 670 Bad Debt Expense | 4,120 | (752) | 3,368 | - | - | - | 752 | - | - | 4,120 |
| 26 | 675 Miscellaneous Expenses | 6,644 | - | 6,644 | - | - | - | - | - | - | 6,644 |
| 27 | 403 Depreciation Expense | 95,385 | 18,195 | 113,580 | - | - | - | - | - | - | 113,580 |
| 28 | 408 Taxes Other Than Income | 3,340 | - | 3,340 | - | - | - | - | - | - | 3,340 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 15,527 | (15,527) | - | - | - | - | - | 17,015 | - | 17,015 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | - | - | - | - | - | - | - | - | - | - |
| 31 | 409 Income Taxes | 13,939 | (19,642) | (5,703) | - | - | - | - | - | 10,176 | 4,473 |
| 32 | Total Operating Expenses | $ 366,917 | $ (25,694) | $ 341,223 | $ 6,711 | $ (7,016) | $ - | $ 752 | $ 17,015 | $ 10,176 | $ 368,860 |
| 33 | | | | | | | | | | | |
| 34 | Operating Income (Loss) | $ 12,236 | $ (16,640) | $ (4,404) | $ 36,944 | $ 7,016 | $ - | $ (752) | $ (17,015) | $ (10,176) | $ 11,614 |
| 35 | | | | | | | | | | | |
| 36 | 414 Gains (Losses) from Disposition of Utility Property | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | - | - | - | - | - | - | - | - | - | - |
| 38 | 427 Interest Expense | (8,548) | - | (8,548) | - | - | - | - | - | - | (8,548) |
| 39 | Total Other Income and Deductions | $ (8,548) | $ - | $ (8,548) | $ - | $ - | $ - | $ - | $ - | $ - | $ (8,548) |
| 40 | | | | | | | | | | | |
| 41 | Net Income (Loss) | $ 3,688 | $ (16,640) | $ (12,952) | $ 36,944 | $ 7,016 | $ - | $ (752) | $ (17,015) | $ (10,176) | $ 3,066 |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | | | | | | |
| 45 | C-2 | | | | | | | | | | |
| 46 | E-2 | | | | | | | | | | |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 1
Remove Annualization Revenue & Expense to reflect End-of-Test Year Cutomer Counts



| Line No. | Class of Service | [A] Average No. of Customers Per Bill Count Sch. H-2 Col. A | [B] Year-End Number of Customers | [C] Average Additional Customers [B - A] | [D] Change in Bills to be Issued | [E] Average Gallons Sold Per Customer | [F] Additional K Gallons To Be Sold | [G] Additional Revenues at Present Rates |
|---|---|---|---|---|---|---|---|---|
| 1 | 5/8" Residential, Greater Buckeye Division | 504 | 528 | 24 | 288 | Varies | 2,573 | (11,685) |
| 2 | 3/4" Residential, Greater Buckeye Division | 58 | 6 | (52) | (622) | Varies | (6,375) | 27,798 |
| 3 | 1" Residential, Greater Buckeye Division | 53 | 55 | 2 | 29 | Varies | 274 | (1,916) |
| 4 | Subtotal Residential | 615 | 589 | (26) | (305) | | (3,528) | $ 14,197 |
| 5 | | | | | | | | |
| 6 | 5/8" Commercial, Greater Buckeye Division | 2 | 2 | - | - | Varies | - | - |
| 7 | Subtotal Commercial | 2 | 2 | - | - | | - | $ - |
| 8 | | | | | | | | |
| 9 | 2' Construction, GBD | 2 | - | (2) | (15) | Varies | (9,894) | 29,459 |
| 10 | | 2 | - | (2) | (15) | | (9,894) | $ 29,459 |
| 11 | | | | | | | | |
| 12 | Totals | 619 | 591 | (28) | (320) | | (13,422) | $ 43,655 |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | Class of Expense | | | | | Average Cost Per Gallons Sold Per Sch. E-7 | Additional K Gallons To Be Sold | Additional Cost From Customer Growth |
| 20 | | | | | | | | |
| 21 | Pumping | | | | | $ 0.33 | (13,422) | $ 4,429 |
| 22 | Water Treatment | | | | | $ 0.17 | (13,422) | 2,282 |
| 23 | | | | | | | | |
| 24 | Totals | | | | | | | $ 6,711 |
| 25 | | | | | | | | |
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**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | | |
|---|---|---|---|
| 1 | Staff Adjustment | $ | 7,832 |
| 2 | Removal of duplicate reduction | | 816 |
| 3 | Adjustment to Salaries and Wages | $ | (7,016) |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | Adjustment to Salaries and Wages | $ | (7,016) |
| 8 | | | |
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**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 4
Adjust Bad Debt Expense for Change in Revenue Levels



| Line No. | | | |
|---|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ | 4,120 |
| 2 | Adjusted Test Year Revenues | | 380,474 |
| 3 | Bad Debt Expense Rate | | 1.08% |
| 4 | | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ | 752 |
| 6 | | | |
| 7 | | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ | 1,174 |
| 9 | | | |
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**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 380,474 | $ 380,474 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 760,949 | $ 760,949 |
| 4 | Proposed Revenue Requirement | 380,474 | $ 380,474 |
| 5 | Subtotal (Line 4 + Line 5) | 1,141,423 | 1,141,423 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 380,474 | $ 380,474 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 760,949 | $ 760,949 |
| 10 | Plus: 10% of CWIP - | 12,969 | 12,969 |
| 11 | Less: Net Book Value of Licensed Vehicles | - | $ - |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 773,918 | $ 773,918 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 162,523 | $ 162,523 |
| 15 | Composite Property Tax Rate | 10.4693% | 10.4693% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 17,015 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 17,015 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 17,015 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 17,015 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Gallons Sold x 1,000) | | $ 0.22 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's gallons sold/1,000. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's gallons sold/1,000 is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
| 35 | | | |
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**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ 16,087 | $ 123,310 |
| 3 | Synchronized Interest | 4,499 | 4,499 |
| 4 | Arizona Taxable Income | $ 11,589 | $ 118,811 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ 808 | $ 8,279 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ 11,589 | $ 118,811 |
| 9 | Less Arizona Income Taxes | 808 | 8,279 |
| 10 | Federal Taxable Income | $ 10,781 | $ 110,532 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ 3,666 | $ 37,581 |
| 13 | | | |
| 14 | Total Income Tax | $ 4,473 | $ 45,860 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Test Year Income Taxes (Sch. C-2, Line 31) | $ (5,703) | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ 10,176 | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ 4,473 |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 41,387 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 895,377 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.50% |
| 34 | Synchronized Interest (L32 X L33) | | $ 4,499 |
| 35 | | | |
| 36 | | | |
| 37 | | | |
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**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.6649% |
| 3 | Revenues (L1 - L2) | | | 99.3351% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.7362% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.646464** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 1.0829% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.6649% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Arizona State Income Tax Rate | | 6.9680% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Arizona State Income Tax Rate | 6.9680% | | |
| 20 | Federal Taxable Income (L18 - L19) | 93.0320% | | |
| 21 | Applicable Federal Income Tax Rate | 34.0000% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 31.6309% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
| 25 | | | | |
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# Moe

# Rebuttal Schedule

# WUGT

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 2,598,259 | $ 2,598,259 | $ 2,563,849 | $ 2,563,849 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (153,371) | $ (153,371) | $ (157,401) | $ (157,401) |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -5.90% | -5.90% | -6.14% | -6.14% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 258,267 | $ 258,267 | $ 221,773 | $ 221,773 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.94% | 9.94% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 411,638 | $ 411,638 | $ 379,174 | $ 379,174 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.644176 | 1.644176 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 677,179 | $ 677,179 | $ 623,429 | $ 623,429 |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |
| 26 | | | | | |
| 27 | | | | | |

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 4,764,593 | $ - | $ 4,764,593 |
| 2 | Less: Accumulated Depreciation | (952,778) | (34,410) | (987,188) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 3,811,815 | $ (34,410) | $ 3,777,405 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | 64,988 | - | 64,988 |
| 8 | Advances in Aid of Construction (AIAC) | 1,244,686 | - | 1,244,686 |
| 9 | Customer Deposits | 11,537 | - | 11,537 |
| 10 | Deferred Income Tax Credits | - | - | - |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | 107,655 | - | 107,655 |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 2,598,259 | $ (34,410) | $ 2,563,849 |
| 19 | | | | |
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| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | Supporting Schedules: | | | Recap Schedules: |
| 36 | B-2 | | | A-1 |
| 37 | B-3 | | | |
| 38 | E-1 | | | |
| 39 | B-5 | | | |
| 40 | | | | |

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] ADJ #7 | [K] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | | |
| 1 | 303 Land and Land Rights | $ 66,651 | $ - | $ 66,651 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 66,651 |
| 2 | 304 Structures and Improvements | 46,704 | - | 46,704 | - | - | - | - | - | - | - | 46,704 |
| 3 | 306 Lake, River and Other Intakes | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 307 Wells and Springs | 299,601 | - | 299,601 | - | - | - | - | - | - | - | 299,601 |
| 5 | 309 Supply Mains | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 310 Power Generation Equipment | - | - | - | - | - | - | - | | - | - | - |
| 7 | 311 Pumping Equipment | 1,638,498 | - | 1,638,498 | - | - | - | - | - | - | - | 1,638,498 |
| 8 | 320 Water Treatment Equipment | 1,348,884 | - | 1,348,884 | - | - | - | - | - | - | - | 1,348,884 |
| 9 | 330 Distribution Reservoirs and Standpipes | 180,350 | - | 180,350 | - | - | - | - | - | - | - | 180,350 |
| 10 | 331 Transmission and Distribution Mains | 880,279 | - | 880,279 | - | - | - | - | - | - | - | 880,279 |
| 11 | 333 Services | 40,356 | - | 40,356 | - | - | - | - | - | - | - | 40,356 |
| 12 | 334 Meters and Meter Installations | 57,148 | - | 57,148 | - | - | - | - | - | - | - | 57,148 |
| 13 | 335 Hydrants | 38,386 | - | 38,386 | - | - | - | - | - | - | - | 38,386 |
| 14 | 336 Backflow Prevention Devices | 5,894 | - | 5,894 | - | - | - | - | - | - | - | 5,894 |
| 15 | 339 Other Plant and Miscellaneous Equipment | 3,543 | - | 3,543 | - | - | - | - | - | - | - | 3,543 |
| 16 | 340 Office Furniture and Equipment | - | - | - | - | - | - | - | - | - | - | - |
| 17 | 341 Transportation Equipment | 32,617 | - | 32,617 | - | - | - | - | - | - | - | 32,617 |
| 18 | 343 Tools, Shop and Garage Equipment | 1,123 | - | 1,123 | - | - | - | - | - | - | - | 1,123 |
| 19 | 344 Laboratory Equipment | 663 | - | 663 | - | - | - | - | - | - | - | 663 |
| 20 | 345 Power Operated Equipment | 838 | - | 838 | - | - | - | - | - | - | - | 838 |
| 21 | 346 Communication Equipment | 12,408 | - | 12,408 | - | - | - | - | - | - | - | 12,408 |
| 22 | 347 Miscellaneous Equipment | 5,436 | - | 5,436 | - | - | - | - | - | - | - | 5,436 |
| 23 | 348 Other Tangible Plant | 105,214 | - | 105,214 | - | - | - | - | - | - | - | 105,214 |
| 24 | | | | | | | | | | | | |
| 25 | Total Plant in Service | $ 4,764,593 | $ - | $ 4,764,593 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 4,764,593 |
| 26 | Less: Accumulated Depreciation | (952,778) | - | (952,778) | (34,410) | - | - | - | - | - | - | (987,188) |
| 27 | Net Plant in Service (L59 - L 60) | $ 3,811,815 | $ - | $ 3,811,815 | $ (34,410) | $ - | $ - | $ - | $ - | $ - | $ - | $ 3,777,405 |
| 28 | | | | | | | | | | | | |
| 29 | LESS: | | | | | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ 64,988 | $ - | $ 64,988 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 64,988 |
| 31 | Advances in Aid of Construction (AIAC) | 1,244,686 | - | 1,244,686 | - | - | - | - | - | - | - | 1,244,686 |
| 32 | Customer Meter Deposits | 11,537 | - | 11,537 | - | - | - | - | - | - | - | 11,537 |
| 33 | Deferred Income Tax Credits | - | - | - | - | - | - | - | - | - | - | - |
| 34 | | | | | | | | | | | | |
| 35 | ADD: | | | | | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | 107,655 | - | 107,655 | - | - | - | - | - | - | - | 107,655 |
| 38 | Working Capital | - | - | - | - | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - | - | - | - | - |
| 40 | | | | | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 2,598,259 | $ - | $ 2,598,259 | $ (34,410) | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,563,849 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | Recap Schedules: | | | | | | |
| 45 | E-1 | | | | | B-1 | | | | | | |

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Rate Base Adjustment - Acceptance of RUCO Rate Base Adjustment



| Line No. | | | |
|---|---|---|---|
| 1 | | | |
| 2 | Accumulated Depreciation as Filed | $ | (952,778) |
| 3 | RUCO Calculated Accum. Depr. | | (987,188) |
| 4 | | | |
| 5 | Adjustment to Accum. Depr. | $ | (34,410) |
| 6 | | | |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| Line No. | DESCRIPTION | [A] Actual Test Year | [B] Pro Forma Adjustments - As Filed | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments | [E] Adjusted Test Year - Rebuttal | [F] Proposed Increase - Rebuttal | [G] Adjusted With Increase - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | Metered Water Sales | $ 271,752 | $ (21,551) | $ 250,201 | $ - | $ 250,201 | $ 617,554 | $ 867,755 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 9,103 | - | 9,103 | - | 9,103 | 5,875 | 14,978 |
| 5 | Total Operating Revenues | $ 280,855 | $ (21,551) | $ 259,304 | $ - | $ 259,304 | $ 623,429 | $ 882,733 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 51,004 | $ (2,619) | $ 48,385 | $ (4,629) | $ 43,756 | $ - | $ 43,756 |
| 9 | 604 Employee Pensions and Benefits | 10,833 | (524) | 10,309 | - | 10,309 | - | 10,309 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 17,080 | (888) | 16,192 | (372) | 15,820 | - | 15,820 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 34,032 | (2,904) | 31,128 | - | 31,128 | - | 31,128 |
| 14 | 620 Materials and Supplies | 12,609 | - | 12,609 | - | 12,609 | - | 12,609 |
| 15 | 620.08 Materials and Supplies | 10,278 | - | 10,278 | - | 10,278 | - | 10,278 |
| 16 | 635 Contractual Services - Testing | 11,006 | - | 11,006 | - | 11,006 | - | 11,006 |
| 17 | 636 Contractual Services - Other | 34,883 | - | 34,883 | - | 34,883 | - | 34,883 |
| 18 | 641 Rental of Building/Real Property | 2,075 | - | 2,075 | - | 2,075 | - | 2,075 |
| 19 | 642 Rental of Equipment | 732 | - | 732 | - | 732 | - | 732 |
| 20 | 650 Transportation Expenses | 8,965 | - | 8,965 | - | 8,965 | - | 8,965 |
| 21 | 657 Insurance - General Liability | 1,167 | - | 1,167 | - | 1,167 | - | 1,167 |
| 22 | 659 Insurance - Other | 216 | - | 216 | - | 216 | - | 216 |
| 23 | 660 Advertising Expense | 17 | (17) | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 1,333 | 1,333 | - | 1,333 | - | 1,333 |
| 25 | 670 Bad Debt Expense | 2,451 | 142 | 2,593 | (142) | 2,451 | 5,893 | 8,344 |
| 26 | 675 Miscellaneous Expenses | 4,474 | - | 4,474 | - | 4,474 | - | 4,474 |
| 27 | 403 Depreciation Expense | 202,910 | 104,628 | 307,538 | - | 307,538 | - | 307,538 |
| 28 | 408 Taxes Other Than Income | 8,614 | - | 8,614 | - | 8,614 | - | 8,614 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 7,143 | (7,143) | - | 11,687 | 11,687 | - | 11,687 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and L | 344 | - | 344 | - | 344 | - | 344 |
| 31 | 409 Income Taxes | (32,068) | (65,900) | (97,968) | (2,513) | (100,481) | 238,362 | 137,881 |
| 32 | Total Operating Expenses | $ 386,565 | $ 25,109 | $ 412,674 | $ 4,030 | $ 416,705 | $ 244,255 | $ 660,960 |
| 33 | | | | | | | | |
| 34 | Utility Operating Income (Loss) | $ (105,710) | $ (47,661) | $ (153,371) | $ (4,030) | $ (157,401) | $ 379,174 | $ 221,773 |
| 35 | | | | | | | | |
| 36 | 414 Gains (Losses) from Disp of Util Prop | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | 3 | - | 3 | - | 3 | - | 3 |
| 38 | 427 Interest Expense | (17,506) | - | (17,506) | - | (17,506) | - | (17,506) |
| 39 | Total Other Income and Deductions | $ (17,503) | $ - | $ (17,503) | $ - | $ (17,503) | $ - | $ (17,503) |
| 40 | | | | | | | | |
| 41 | Net Income (Loss) | $ (123,213) | $ (47,661) | $ (170,874) | $ (4,030) | $ (174,904) | $ 379,174 | $ 204,270 |
| 42 | | | | | | | | |
| 43 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 44 | E-2 | | | | | | A-1 | |
| 45 | C-2 | | | | | | | |

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | Metered Water Sales | $ 271,752 | $ (21,551) | $ 250,201 | $ - | $ - | $ - | $ - | $ - | $ - | $ 250,201 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 9,103 | - | 9,103 | - | - | - | - | - | - | 9,103 |
| 5 | Total Operating Revenues | $ 280,855 | $ (21,551) | $ 259,304 | $ - | $ - | $ - | $ - | $ - | $ - | $ 259,304 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 51,004 | $ (2,619) | $ 48,385 | $ - | $ (4,629) | $ - | $ - | $ - | $ - | $ 43,756 |
| 9 | 604 Employee Pensions and Benefits | 10,833 | (524) | 10,309 | - | - | - | - | - | - | 10,309 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 17,080 | (888) | 16,192 | - | - | (372) | - | - | - | 15,820 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 34,032 | (2,904) | 31,128 | - | - | - | - | - | - | 31,128 |
| 14 | 620 Materials and Supplies | 12,609 | - | 12,609 | - | - | - | - | - | - | 12,609 |
| 15 | 620.08 Materials and Supplies | 10,278 | - | 10,278 | - | - | - | - | - | - | 10,278 |
| 16 | 635 Contractual Services - Testing | 11,006 | - | 11,006 | - | - | - | - | - | - | 11,006 |
| 17 | 636 Contractual Services - Other | 34,683 | - | 34,683 | - | - | - | - | - | - | 34,683 |
| 18 | 641 Rental of Building/Real Property | 2,075 | - | 2,075 | - | - | - | - | - | - | 2,075 |
| 19 | 642 Rental of Equipment | 732 | - | 732 | - | - | - | - | - | - | 732 |
| 20 | 650 Transportation Expenses | 6,965 | - | 6,965 | - | - | - | - | - | - | 6,965 |
| 21 | 657 Insurance - General Liability | 1,167 | - | 1,167 | - | - | - | - | - | - | 1,167 |
| 22 | 659 Insurance - Other | 216 | - | 216 | - | - | - | - | - | - | 216 |
| 23 | 660 Advertising Expense | 17 | (17) | - | - | - | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 1,333 | 1,333 | - | - | - | - | - | - | 1,333 |
| 25 | 670 Bad Debt Expense | 2,451 | 142 | 2,593 | - | - | - | (142) | - | - | 2,451 |
| 26 | 675 Miscellaneous Expenses | 4,474 | - | 4,474 | - | - | - | - | - | - | 4,474 |
| 27 | 403 Depreciation Expense | 202,910 | 104,628 | 307,538 | - | - | - | - | - | - | 307,538 |
| 28 | 408 Taxes Other Than Income | 8,614 | - | 8,614 | - | - | - | - | - | - | 8,614 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 7,143 | (7,143) | - | - | - | - | - | 11,687 | - | 11,687 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | 344 | - | 344 | - | - | - | - | - | - | 344 |
| 31 | 409 Income Taxes | (32,068) | (65,900) | (97,968) | - | - | - | - | - | (2,513) | (100,481) |
| 32 | Total Operating Expenses | $ 386,565 | $ 26,109 | $ 412,674 | $ - | $ (4,629) | $ (372) | $ (142) | $ 11,687 | $ (2,513) | $ 416,705 |
| 33 | | | | | | | | | | | |
| 34 | Operating Income (Loss) | $ (105,710) | $ (47,661) | $ (153,371) | $ - | $ 4,629 | $ 372 | $ 142 | $ (11,687) | $ 2,513 | $ (157,401) |
| 35 | | | | | | | | | | | |
| 36 | 414 Gains (Losses) from Disposition of Utility Property | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | 3 | - | 3 | - | - | - | - | - | - | 3 |
| 38 | 427 Interest Expense | (17,506) | - | (17,506) | - | - | - | - | - | - | (17,506) |
| 39 | Total Other Income and Deductions | $ (17,503) | $ - | $ (17,503) | $ - | $ - | $ - | $ - | $ - | $ - | $ (17,503) |
| 40 | | | | | | | | | | | |
| 41 | Net Income (Loss) | $ (123,213) | $ (47,661) | $ (170,874) | $ - | $ 4,629 | $ 372 | $ 142 | $ (11,687) | $ 2,513 | $ (174,904) |
| 42 | | | | | | | | | | | |
| 43 | Supporting Schedules: | | | | | | | | | | |
| 44 | C-2 | | | | | | | | | | |
| 45 | E-2 | | | | | | | | | | |

| Line No | Class of Service |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | | |
|---|---|---|---|
| 1 | Staff Adjustment | $ | 5,070 |
| 2 | Removal of duplicate reduction | | 441 |
| 3 | Adjustment to Salaries and Wages | $ | (4,629) |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | Adjustment to Salaries and Wages | $ | (4,629) |
| 8 | | | |
| 9 | | | |
| 10 | | | |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 3
Adjustment to Purchased Power Expense



| Line No. | | | |
|---|---|---|---|
| 1 | 615 Purchased Power | $ | 16,192 |
| 2 | Water Loss Percentage Exceeding Staff Maximum Allowed | | 2.3% |
| 3 | Adjustment to Purchased Power | $ | (372) |
| 4 | | | |
| 5 | | | |
| 6 | Adjustment to Purchased Power | $ | (372) |
| 7 | | | |
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| Line No. | | | |
|---|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ | 2,451 |
| 2 | Adjusted Test Year Revenues | | 259,304 |
| 3 | Bad Debt Expense Rate | | 0.95% |
| 4 | | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ | (142) |
| 6 | | | |
| 7 | | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ | 5,893 |
| 9 | | | |
| 10 | | | |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 259,304 | $ 259,304 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 518,608 | $ 518,608 |
| 4 | Proposed Revenue Requirement | 259,304 | $ 259,304 |
| 5 | Subtotal (Line 4 + Line 5) | 777,911 | 777,911 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 259,304 | $ 259,304 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 518,608 | $ 518,608 |
| 10 | Plus: 10% of CWIP - | 12,969 | 12,969 |
| 11 | Less: Net Book Value of Licensed Vehicles | - | $ - |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 531,577 | $ 531,577 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 111,631 | $ 111,631 |
| 15 | Composite Property Tax Rate | 10.4693% | 10.4693% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 11,687 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 11,687 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 11,687 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 11,687 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Gallons Sold x 1,000) | | $ 0.30 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's gallons sold/1,000. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's gallons sold/1,000 is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
| 35 | | | |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ (257,882) | $ 359,654 |
| 3 | Synchronized Interest | 2,439 | 2,439 |
| 4 | Arizona Taxable Income | $ (260,321) | $ 357,215 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ (18,139) | $ 24,891 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ (260,321) | $ 357,215 |
| 9 | Less Arizona Income Taxes | (18,139) | 24,891 |
| 10 | Federal Taxable Income | $ (242,182) | $ 332,324 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ (82,342) | $ 112,990 |
| 13 | | | |
| 14 | Total Income Tax | $ (100,481) | $ 137,881 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Test Year Income Taxes (Sch. C-2, Line 31) | $ (97,968) | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ (2,513) | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ (100,481) |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 238,362 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 2,563,849 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.10% |
| 34 | Synchronized Interest (L32 X L33) | | $ 2,439 |
| 35 | | | |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.5804% |
| 3 | Revenues (L1 - L2) | | | 99.4196% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.8207% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.644176** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 0.9452% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.5804% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Arizona State Income Tax Rate | | 6.9680% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Arizona State Income Tax Rate | 6.9680% | | |
| 20 | Federal Taxable Income (L18 - L19) | 93.0320% | | |
| 21 | Applicable Federal Income Tax Rate | 34.0000% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 31.6309% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
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# Moe

# Rebuttal Schedule

# WVWC

**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 2,251,164 | $ 2,251,164 | $ 2,207,149 | $ 2,207,149 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (95,458) | $ (95,458) | $ (93,559) | $ (93,559) |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -4.24% | -4.24% | -4.24% | -4.24% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 208,008 | $ 208,008 | $ 190,918 | $ 190,918 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.24% | 9.24% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 303,466 | $ 303,466 | $ 284,477 | $ 284,477 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.641985 | 1.641985 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 499,228 | $ 499,228 | $ 467,107 | $ 467,107 |
| 16 | | | | | |
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| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |
| 26 | | | | | |
| 27 | | | | | |

**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 4,016,878 | $ - | $ 4,016,878 |
| 2 | Less: Accumulated Depreciation | (1,228,047) | (44,015) | (1,272,062) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 2,788,831 | $ (44,015) | $ 2,744,816 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | - | - | - |
| 8 | Advances in Aid of Construction (AIAC) | 618,488 | - | 618,488 |
| 9 | Customer Deposits | 6,985 | - | 6,985 |
| 10 | Deferred Income Tax Credits | - | - | - |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | 87,806 | - | 87,806 |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 2,251,164 | $ (44,015) | $ 2,207,149 |
| 19 | | | | |
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| 34 | Supporting Schedules: | | Recap Schedules: | |
| 35 | B-2 | | A-1 | |
| 36 | B-3 | | | |
| 37 | E-1 | | | |
| 38 | B-5 | | | |
| 39 | | | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] ADJ #7 | [K] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | | |
| 1 | 303 Land and Land Rights | $ 18,100 | $ - | $ 18,100 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 18,100 |
| 2 | 304 Structures and Improvements | 197,952 | - | 197,952 | - | - | - | - | - | - | - | 197,952 |
| 3 | 306 Lake, River and Other Intakes | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 307 Wells and Springs | 1,622,446 | - | 1,622,446 | - | - | - | - | - | - | - | 1,622,446 |
| 5 | 309 Supply Mains | 2,118 | - | 2,118 | - | - | - | - | - | - | - | 2,118 |
| 6 | 310 Power Generation Equipment | 10,751 | - | 10,751 | - | - | - | - | - | - | - | 10,751 |
| 7 | 311 Pumping Equipment | 492,405 | - | 492,405 | - | - | - | - | - | - | - | 492,405 |
| 8 | 320 Water Treatment Equipment | 263,210 | - | 263,210 | - | - | - | - | - | - | - | 263,210 |
| 9 | 330 Distribution Reservoirs and Standpipes | 265,882 | - | 265,882 | - | - | - | - | - | - | - | 265,882 |
| 10 | 331 Transmission and Distribution Mains | 620,830 | - | 620,830 | - | - | - | - | - | - | - | 620,830 |
| 11 | 333 Services | 95,359 | - | 95,359 | - | - | - | - | - | - | - | 95,359 |
| 12 | 334 Meters and Meter Installations | 220,733 | - | 220,733 | - | - | - | - | - | - | - | 220,733 |
| 13 | 335 Hydrants | 37,179 | - | 37,179 | - | - | - | - | - | - | - | 37,179 |
| 14 | 336 Backflow Prevention Devices | 1,024 | - | 1,024 | - | - | - | - | - | - | - | 1,024 |
| 15 | 339 Other Plant and Miscellaneous Equipment | 19,311 | - | 19,311 | - | - | - | - | - | - | - | 19,311 |
| 16 | 340 Office Furniture and Equipment | 22,526 | - | 22,526 | - | - | - | - | - | - | - | 22,526 |
| 17 | 341 Transportation Equipment | 20,846 | - | 20,846 | - | - | - | - | - | - | - | 20,846 |
| 18 | 343 Tools, Shop and Garage Equipment | 42,909 | - | 42,909 | - | - | - | - | - | - | - | 42,909 |
| 19 | 344 Laboratory Equipment | 9,508 | - | 9,508 | - | - | - | - | - | - | - | 9,508 |
| 20 | 345 Power Operated Equipment | 38,925 | - | 38,925 | - | - | - | - | - | - | - | 38,925 |
| 21 | 346 Communication Equipment | 2,654 | - | 2,654 | - | - | - | - | - | - | - | 2,654 |
| 22 | 347 Miscellaneous Equipment | 8,273 | - | 8,273 | - | - | - | - | - | - | - | 8,273 |
| 23 | 348 Other Tangible Plant | 3,937 | - | 3,937 | - | - | - | - | - | - | - | 3,937 |
| 24 | | | | | | | | | | | | |
| 25 | Total Plant in Service | $ 4,016,878 | $ - | $ 4,016,878 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 4,016,878 |
| 26 | Less: Accumulated Depreciation | (1,228,047) | - | (1,228,047) | (44,015) | - | - | - | - | - | - | (1,272,062) |
| 27 | Net Plant in Service (L59 - L 60) | $ 2,788,831 | $ - | $ 2,788,831 | $ (44,015) | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,744,816 |
| 28 | | | | | | | | | | | | |
| 29 | LESS: | | | | | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 31 | Advances in Aid of Construction (AIAC) | 618,488 | - | 618,488 | - | - | - | - | - | - | - | 618,488 |
| 32 | Customer Meter Deposits | 6,985 | - | 6,985 | - | - | - | - | - | - | - | 6,985 |
| 33 | Deferred Income Tax Credits | - | - | - | - | - | - | - | - | - | - | - |
| 34 | | | | | | | | | | | | |
| 35 | ADD: | | | | | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | 87,806 | - | 87,806 | - | - | - | - | - | - | - | 87,806 |
| 38 | Working Capital | - | - | - | - | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - | - | - | - | - |
| 40 | | | | | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 2,251,164 | $ - | $ 2,251,164 | $ (44,015) | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,207,149 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | Recap Schedules: | | | | | | |
| 45 | E-1 | | | | | B-1 | | | | | | |

**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Rate Base Adjustment - Acceptance of RUCO Rate Base Adjustment



| Line No. | | | |
|---|---|---|---|
| 1 | | | |
| 2 | Accumulated Depreciation as Filed | $ | (1,228,047) |
| 3 | RUCO Calculated Accum. Depr. | | (1,272,062) |
| 4 | | | |
| 5 | Adjustment to Accum. Depr. | $ | (44,015) |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| Line No. | DESCRIPTION | [A] Actual Test Year | [B] Pro Forma Adjustments - As Filed | [C] Adjusted Test Year - As Filed | [D] Rebuttal Adjustments | [E] Adjusted Test Year - Rebuttal | [F] Proposed Increase - Rebuttal | [G] Adjusted With Increase - Rebuttal |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | Metered Water Sales | $ 462,423 | $ (8,639) | $ 453,784 | $ - | $ 453,784 | $ 461,397 | $ 915,181 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 19,743 | - | 19,743 | - | 19,743 | 5,710 | 25,453 |
| 5 | Total Operating Revenues | $ 482,166 | $ (8,639) | $ 473,527 | $ - | $ 473,527 | $ 467,107 | $ 940,634 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 253,041 | $ (26,672) | $ 226,369 | $ (21,372) | $ 204,997 | $ - | $ 204,997 |
| 9 | 604 Employee Pensions and Benefits | 56,299 | (5,334) | 50,965 | - | 50,965 | - | 50,965 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 33,979 | (412) | 33,567 | - | 33,567 | - | 33,567 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 18,274 | (225) | 18,049 | - | 18,049 | - | 18,049 |
| 14 | 620 Materials and Supplies | 18,897 | - | 18,897 | - | 18,897 | - | 18,897 |
| 15 | 620.08 Materials and Supplies | 41,492 | - | 41,492 | - | 41,492 | - | 41,492 |
| 16 | 635 Contractual Services - Testing | 5,401 | - | 5,401 | - | 5,401 | - | 5,401 |
| 17 | 636 Contractual Services - Other | 12,787 | - | 12,787 | - | 12,787 | - | 12,787 |
| 18 | 641 Rental of Building/Real Property | 9,185 | - | 9,185 | - | 9,185 | - | 9,185 |
| 19 | 642 Rental of Equipment | - | - | - | - | - | - | - |
| 20 | 650 Transportation Expenses | 13,076 | - | 13,076 | - | 13,076 | - | 13,076 |
| 21 | 657 Insurance - General Liability | 5,119 | - | 5,119 | - | 5,119 | - | 5,119 |
| 22 | 659 Insurance - Other | 1,072 | - | 1,072 | - | 1,072 | - | 1,072 |
| 23 | 660 Advertising Expense | 578 | (578) | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 5,333 | 5,333 | - | 5,333 | - | 5,333 |
| 25 | 670 Bad Debt Expense | 3,850 | 885 | 4,735 | (885) | 3,850 | 3,798 | 7,648 |
| 26 | 675 Miscellaneous Expenses | 10,257 | - | 10,257 | - | 10,257 | - | 10,257 |
| 27 | 403 Depreciation Expense | 126,768 | 58,929 | 185,697 | - | 185,697 | - | 185,697 |
| 28 | 408 Taxes Other Than Income | 2,820 | (2,680) | 140 | - | 140 | - | 140 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 21,324 | (21,324) | - | 18,910 | 18,910 | - | 18,910 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and L | - | - | - | - | - | - | - |
| 31 | 409 Income Taxes | (41,507) | (31,448) | (72,955) | 1,447 | (71,508) | 178,832 | 107,324 |
| 32 | Total Operating Expenses | $ 592,312 | $ (23,327) | $ 568,985 | $ (1,900) | $ 567,086 | $ 182,630 | $ 749,716 |
| 33 | | | | | | | | |
| 34 | Utility Operating Income (Loss) | $ (110,146) | $ 14,688 | $ (95,458) | $ 1,900 | $ (93,559) | $ 284,477 | $ 190,918 |
| 35 | | | | | | | | |
| 36 | 414 Gains (Losses) from Disp of Util Prop | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | 779 | - | 779 | - | 779 | - | 779 |
| 38 | 427 Interest Expense | (13,333) | - | (13,333) | - | (13,333) | - | (13,333) |
| 39 | Total Other Income and Deductions | $ (12,554) | $ - | $ (12,554) | $ - | $ (12,554) | $ - | $ (12,554) |
| 40 | | | | | | | | |
| 41 | Net Income (Loss) | $ (122,700) | $ 14,688 | $ (108,012) | $ 1,900 | $ (106,113) | $ 284,477 | $ 178,364 |
| 42 | | | | | | | | |
| 43 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 44 | E-2 | | | | | | A-1 | |
| 45 | C-2 | | | | | | | |

**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | Metered Water Sales | $ 462,423 | $ (8,639) | $ 453,784 | $ - | $ - | $ - | $ - | $ - | $ - | $ 453,784 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 19,743 | - | 19,743 | - | - | - | - | - | - | 19,743 |
| 5 | Total Operating Revenues | $ 482,166 | $ (8,639) | $ 473,527 | $ - | $ - | $ - | $ - | $ - | $ - | $ 473,527 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 253,041 | $ (26,672) | $ 226,369 | $ - | $ (21,372) | $ - | $ - | $ - | $ - | $ 204,997 |
| 9 | 604 Employee Pensions and Benefits | 56,299 | (5,334) | 50,965 | - | - | - | - | - | - | 50,965 |
| 10 | 610 Purchased Water | - | - | - | - | - | - | - | - | - | - |
| 11 | 615 Purchased Power | 33,979 | (412) | 33,567 | - | - | - | - | - | - | 33,567 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 18,274 | (225) | 18,049 | - | - | - | - | - | - | 18,049 |
| 14 | 620 Materials and Supplies | 18,697 | - | 18,697 | - | - | - | - | - | - | 18,697 |
| 15 | 620.08 Materials and Supplies | 41,492 | - | 41,492 | - | - | - | - | - | - | 41,492 |
| 16 | 635 Contractual Services - Testing | 5,401 | - | 5,401 | - | - | - | - | - | - | 5,401 |
| 17 | 636 Contractual Services - Other | 12,787 | - | 12,787 | - | - | - | - | - | - | 12,787 |
| 18 | 641 Rental of Building/Real Property | 9,185 | - | 9,185 | - | - | - | - | - | - | 9,185 |
| 19 | 642 Rental of Equipment | - | - | - | - | - | - | - | - | - | - |
| 20 | 650 Transportation Expenses | 13,076 | - | 13,076 | - | - | - | - | - | - | 13,076 |
| 21 | 657 Insurance - General Liability | 5,119 | - | 5,119 | - | - | - | - | - | - | 5,119 |
| 22 | 659 Insurance - Other | 1,072 | - | 1,072 | - | - | - | - | - | - | 1,072 |
| 23 | 660 Advertising Expense | 578 | (578) | - | - | - | - | - | - | - | - |
| 24 | 667 Rate Case Expense | - | 5,333 | 5,333 | - | - | - | - | - | - | 5,333 |
| 25 | 670 Bad Debt Expense | 3,850 | 885 | 4,735 | - | - | - | (885) | - | - | 3,850 |
| 26 | 675 Miscellaneous Expenses | 10,257 | - | 10,257 | - | - | - | - | - | - | 10,257 |
| 27 | 403 Depreciation Expense | 126,768 | 58,929 | 185,697 | - | - | - | - | - | - | 185,697 |
| 28 | 408 Taxes Other Than Income | 2,620 | (2,480) | 140 | - | - | - | - | - | - | 140 |
| 29 | 408.11 Taxes Other Than Income - Property Taxes | 21,324 | (21,324) | - | - | - | - | - | 18,910 | - | 18,910 |
| 30 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | - | - | - | - | - | - | - | - | - | - |
| 31 | 409 Income Taxes | (41,507) | (31,448) | (72,955) | - | - | - | - | - | 1,447 | (71,508) |
| 32 | Total Operating Expenses | $ 592,312 | $ (23,327) | $ 568,985 | $ - | $ (21,372) | $ - | $ (885) | $ 18,910 | $ 1,447 | $ 567,086 |
| 33 | | | | | | | | | | | |
| 34 | Operating Income (Loss) | $ (110,146) | $ 14,688 | $ (95,458) | $ - | $ 21,372 | $ - | $ 885 | $ (18,910) | $ (1,447) | $ (93,559) |
| 35 | | | | | | | | | | | |
| 36 | 414 Gains (Losses) from Disposition of Utility Property | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | 419 Interest and Dividend Income | 779.0 | - | 779.0 | - | - | - | - | - | - | 779 |
| 38 | 427 Interest Expense | (13,333) | - | (13,333) | - | - | - | - | - | - | (13,333) |
| 39 | Total Other Income and Deductions | $ (12,554) | $ - | $ (12,554) | $ - | $ - | $ - | $ - | $ - | $ - | $ (12,554) |
| 40 | | | | | | | | | | | |
| 41 | Net Income (Loss) | $ (122,700) | $ 14,688 | $ (108,012) | $ - | $ 21,372 | $ - | $ 885 | $ (18,910) | $ (1,447) | $ (106,113) |
| 42 | | | | | | | | | | | |
| 43 | Supporting Schedules: | | | | | | | | | | |
| 44 | C-2 | | | | | | | | | | |
| 45 | E-2 | | | | | | | | | | |

| Line No. | Class of Service |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | | |
|---|---|---|---|
| 1 | Staff Adjustment | $ | 21,372 |
| 2 | Removal of duplicate reduction | | - |
| 3 | Adjustment to Salaries and Wages | $ | (21,372) |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | Adjustment to Salaries and Wages | $ | (21,372) |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 4
Adjust Bad Debt Expense for Change in Revenue Levels



| Line No. | | |
|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ 3,850 |
| 2 | Adjusted Test Year Revenues | 473,527 |
| 3 | Bad Debt Expense Rate | 0.81% |
| 4 | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ (885) |
| 6 | | |
| 7 | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ 3,798 |
| 9 | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 473,527 | $ 473,527 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 947,054 | $ 947,054 |
| 4 | Proposed Revenue Requirement | 473,527 | $ 473,527 |
| 5 | Subtotal (Line 4 + Line 5) | 1,420,581 | 1,420,581 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 473,527 | $ 473,527 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 947,054 | $ 947,054 |
| 10 | Plus: 10% of CWIP - | 47 | 47 |
| 11 | Less: Net Book Value of Licensed Vehicles | 16,677 | $ 16,677 |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 930,424 | $ 930,424 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 195,389 | $ 195,389 |
| 15 | Composite Property Tax Rate | 9.6781% | 9.6781% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 18,910 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 18,910 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 18,910 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 18,910 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Gallons Sold x 1,000) | | $ 0.19 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's gallons sold/1,000. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's gallons sold/1,000 is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ (165,067) | $ 298,243 |
| 3 | Synchronized Interest | 20,193 | 20,193 |
| 4 | Arizona Taxable Income | $ (185,259) | $ 278,050 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ (12,909) | $ 19,375 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ (185,259) | $ 278,050 |
| 9 | Less Arizona Income Taxes | (12,909) | 19,375 |
| 10 | Federal Taxable Income | $ (172,350) | $ 258,675 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ (58,599) | $ 87,950 |
| 13 | | | |
| 14 | Total Income Tax | $ (71,508) | $ 107,324 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Test Year Income Taxes (Sch. C-2, Line 31) | $ (72,955) | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ 1,447 | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ (71,508) |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 178,832 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 2,207,149 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.91% |
| 34 | Synchronized Interest (L32 X L33) | | $ 20,193 |
| 35 | | | |
| 36 | | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.4992% |
| 3 | Revenues (L1 - L2) | | | 99.5008% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.9019% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.641985** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 0.8130% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.4992% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Arizona State Income Tax Rate | | 6.9680% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Arizona State Income Tax Rate | 6.9680% | | |
| 20 | Federal Taxable Income (L18 - L19) | 93.0320% | | |
| 21 | Applicable Federal Income Tax Rate | 34.0000% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 31.6309% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
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# Moe

# Rebuttal Schedule

# Consolidated West Valley

**Global Water - West Valley Consolidation - Rebuttal Schedules**

Schedule A-1

Test Year Ended December 31, 2008

Computation of Increase in Gross Revenue Requirement

| Line No. | DESCRIPTION | AS FILED Original Cost - As Filed | AS FILED Fair Value - As Filed | REBUTTAL Original Cost - Rebuttal | REBUTTAL Fair Value - Rebuttal |
|---|---|---|---|---|---|
| 1 | Adjusted Rate Base | $ 7,767,334 | $ 7,767,334 | $ 7,902,833 | $ 7,902,833 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (769,680) | $ (769,680) | $ (751,826) | $ (751,826) |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -9.91% | -9.91% | -9.51% | -9.51% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 761,975 | $ 761,975 | $ 683,595 | $ 683,595 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.81% | 9.81% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 1,531,656 | $ 1,531,656 | $ 1,435,421 | $ 1,435,421 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.650886 | 1.650886 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 2,519,705 | $ 2,519,705 | $ 2,369,715 | $ 2,369,715 |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
| 19 | | | | | |
| 20 | | | | | |
| 21 | Supporting Schedules: | | | | |
| 22 | B-1 | | | | |
| 23 | C-1 | | | | |
| 24 | C-3 | | | | |
| 25 | H-1 | | | | |
| 26 | | | | | |
| 27 | | | | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Summary of Fair Value Rate Base

Schedule B-1

| Line No. | | O.C. Rate Base - As Filed | Rebuttal Adjustments | O.C. Rate Base - Rebuttal |
|---|---|---|---|---|
| 1 | Plant in Service | $ 53,474,551 | $ - | $ 53,474,551 |
| 2 | Less: Accumulated Depreciation | (4,922,761) | 135,499 | (4,787,262) |
| 3 | | | | |
| 4 | Net Plant in Service | $ 48,551,790 | $ 135,499 | $ 48,687,289 |
| 5 | | | | |
| 6 | LESS: | | | |
| 7 | Net CIAC | 1,193,509 | - | 1,193,509 |
| 8 | Advances in Aid of Construction (AIAC) | 39,985,022 | - | 39,985,022 |
| 9 | Customer Deposits | 184,749 | - | 184,749 |
| 10 | Deferred Income Tax Credits | - | - | - |
| 11 | | | | |
| 12 | ADD: | | | |
| 13 | Unamortized Finance Charges | - | - | - |
| 14 | Deferred Tax Assets | 578,824 | - | 578,824 |
| 15 | Working Capital | - | - | - |
| 16 | Utility Plant Acquisition Adjustment | - | - | - |
| 17 | | | | |
| 18 | Original Cost Rate Base | $ 7,767,334 | $ 135,499 | $ 7,902,833 |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
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| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | Supporting Schedules: | | Recap Schedules: | |
| 36 | B-2 | | A-1 | |
| 37 | B-3 | | | |
| 38 | E-1 | | | |
| 39 | B-5 | | | |
| 40 | | | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Original Cost Rate Base Pro Forma Adjustments



| Line No. | Description | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [D] ADJ #1 | [E] ADJ #2 | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [I] ADJ #6 | [J] ADJ #7 | [K] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | | |
| 1 | 303 Land and Land Rights | $ 242,995 | $ - | $ 242,995 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 242,995 |
| 2 | 304 Structures and Improvements | 1,031,256 | - | 1,031,256 | - | - | - | - | - | - | - | 1,031,256 |
| 3 | 306 Lake, River and Other Intakes | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 307 Wells and Springs | 1,191,040 | - | 1,191,040 | - | - | - | - | - | - | - | 1,191,040 |
| 5 | 309 Supply Mains | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 310 Power Generation Equipment | 20,612 | - | 20,612 | - | - | - | - | | - | - | 20,612 |
| 7 | 311 Pumping Equipment | 9,914,563 | - | 9,914,563 | - | - | - | - | - | - | - | 9,914,563 |
| 8 | 320 Water Treatment Equipment | 5,970,564 | - | 5,970,564 | - | - | - | - | - | - | - | 5,970,564 |
| 9 | 330 Distribution Reservoirs ad Standpipes | 4,208,575 | - | 4,208,575 | - | - | - | - | - | - | - | 4,208,575 |
| 10 | 331 Transmission and Distribution Mains | 20,999,633 | - | 20,999,633 | - | - | - | - | - | - | - | 20,999,633 |
| 11 | 333 Services | 2,872,837 | - | 2,872,837 | - | - | - | - | - | - | - | 2,872,837 |
| 12 | 334 Meters and Meter Installations | 1,654,869 | - | 1,654,869 | - | - | - | - | - | - | - | 1,654,869 |
| 13 | 335 Hydrants | 1,979,413 | - | 1,979,413 | - | - | - | - | - | - | - | 1,979,413 |
| 14 | 336 Backflow Prevention Devices | 24,000 | - | 24,000 | - | - | - | - | - | - | - | 24,000 |
| 15 | 339 Other Plant and Miscellaneous Equipment | 122,266 | - | 122,266 | - | - | - | - | - | - | - | 122,266 |
| 16 | 340 Office Furniture and Equipment | 46,206 | - | 46,206 | - | - | - | - | - | - | - | 46,206 |
| 17 | 341 Transportation Equipment | 307,655 | - | 307,655 | - | - | - | - | - | - | - | 307,655 |
| 18 | 343 Tools, Shop and Garage Equipment | 93,355 | - | 93,355 | - | - | - | - | - | - | - | 93,355 |
| 19 | 344 Laboratory Equipment | 42,834 | - | 42,834 | - | - | - | - | - | - | - | 42,834 |
| 20 | 345 Power Operated Equipment | 56,426 | - | 56,426 | - | - | - | - | - | - | - | 56,426 |
| 21 | 346 Communication Equipment | 37,217 | - | 37,217 | - | - | - | - | - | - | - | 37,217 |
| 22 | 347 Miscellaneous Equipment | 30,896 | - | 30,896 | - | - | - | - | - | - | - | 30,896 |
| 23 | 348 Other Tangible Plant | 2,627,339 | - | 2,627,339 | - | - | - | - | - | - | - | 2,627,339 |
| 24 | | | | | | | | | | | | |
| 25 | Total Plant in Service | $ 53,474,551 | $ - | $ 53,474,551 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 53,474,551 |
| 26 | Less: Accumulated Depreciation | (4,922,761) | - | (4,922,761) | 135,499 | - | - | - | - | - | - | (4,787,262) |
| 27 | Net Plant in Service (L59 - L 60) | $ 48,551,790 | $ - | $ 48,551,790 | $ 135,499 | $ - | $ - | $ - | $ - | $ - | $ - | $ 48,687,289 |
| 28 | | | | | | | | | | | | |
| 29 | LESS: | | | | | | | | | | | |
| 30 | Net Contributions in Aid of Construction (CIAC) | $ 1,193,509 | $ - | $ 1,193,509 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,193,509 |
| 31 | Advances in Aid of Construction (AIAC) | 39,985,022 | - | 39,985,022 | - | - | - | - | - | - | - | 39,985,022 |
| 32 | Customer Meter Deposits | 184,749 | - | 184,749 | - | - | - | - | - | - | - | 184,749 |
| 33 | Deferred Income Tax Credits | - | - | - | - | - | - | - | - | - | - | - |
| 34 | | | | | | | | | | | | |
| 35 | ADD: | | | | | | | | | | | |
| 36 | Unamortized Finance Charges | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| 37 | Deferred Tax Assets | 578,824 | - | 578,824 | - | - | - | - | - | - | - | 578,824 |
| 38 | Working Capital | - | - | - | - | - | - | - | - | - | - | - |
| 39 | Utility Plant Acquisition Adjustment | - | - | - | - | - | - | - | - | - | - | - |
| 40 | | | | | | | | | | | | |
| 41 | **Original Cost Rate Base** | $ 7,767,334 | $ - | $ 7,767,334 | $ 135,499 | $ - | $ - | $ - | $ - | $ - | $ - | $ 7,902,833 |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | Supporting Schedules: | | | | | Recap Schedules: | | | | | | |
| 45 | E-1 | | | | | B-1 | | | | | | |

| Line No. | | |
|---|---|---|
| 1 | | |
| 2 | Accumulated Depreciation as Filed | $ (4,922,761) |
| 3 | RUCO Calculated Accum. Depr. | (4,787,262) |
| 4 | | |
| 5 | Adjustment to Accum. Depr. | $ 135,499 |
| 6 | | |
| 7 | | |
| 8 | | |
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| 36 | | |
| 37 | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Adjusted Test Year Income Statement

Schedule C-1

| Line No. | DESCRIPTION | | | [A] Actual Test Year | [B] Pro Forma Adjustments | [C] Adjusted Test Year | [D] Proposed Rate Increase | [E] Adjusted With Rate Increase |
|---|---|---|---|---|---|---|---|---|
| 1 | Revenues | | | | | | | |
| 2 | Metered Water Sales | $ 3,441,914 | $ (215,933) | $ 3,225,981 | $ 186,698 | $ 3,412,678 | $ 2,235,880 | $ 5,648,558 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 289,253 | (31,628) | 257,625 | - | 257,625 | 133,835 | 391,460 |
| 5 | Total Operating Revenues | $ 3,731,167 | $ (247,561) | $ 3,483,606 | $ 186,698 | $ 3,670,303 | $ 2,369,715 | $ 6,040,018 |
| 6 | | | | | | | | |
| 7 | Operating Expenses | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 834,697 | $ (39,287) | $ 795,410 | $ (62,331) | $ 733,079 | $ - | $ 733,079 |
| 9 | 604 Employee Pensions and Benefits | 177,411 | (7,857) | 169,554 | - | 169,554 | - | 169,554 |
| 10 | 610 Purchased Water | 52,085 | - | 52,085 | - | 52,085 | - | 52,085 |
| 11 | 615 Purchased Power | 341,029 | (11,788) | 329,240 | 21,476 | 350,716 | - | 350,716 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 199,212 | (13,725) | 185,487 | 12,824 | 198,311 | - | 198,311 |
| 14 | 620 Materials and Supplies | 48,666 | - | 48,666 | - | 48,666 | - | 48,666 |
| 15 | 620.08 Materials and Supplies | 155,566 | - | 155,566 | - | 155,566 | - | 155,566 |
| 16 | 634 Contractual Services - Management Fees | - | - | - | - | - | - | - |
| 17 | 635 Contractual Services - Testing | 48,509 | - | 48,509 | - | 48,509 | - | 48,509 |
| 18 | 636 Contractual Services - Other | 77,174 | - | 77,174 | - | 77,174 | - | 77,174 |
| 19 | 641 Rental of Building/Real Property | 43,234 | - | 43,234 | - | 43,234 | - | 43,234 |
| 20 | 642 Rental of Equipment | 5,027 | - | 5,027 | - | 5,027 | - | 5,027 |
| 21 | 650 Transportation Expenses | 84,653 | - | 84,653 | - | 84,653 | - | 84,653 |
| 22 | 657 Insurance - General Liability | 20,338 | - | 20,338 | - | 20,338 | - | 20,338 |
| 23 | 659 Insurance - Other | 3,888 | - | 3,888 | - | 3,888 | - | 3,888 |
| 24 | 660 Advertising Expense | 162 | (162) | - | - | - | - | - |
| 25 | 667 Rate Case Expense | - | 21,333 | 21,333 | - | 21,333 | - | 21,333 |
| 26 | 670 Bad Debt Expense | 49,469 | (14,633) | 34,836 | 14,633 | 49,469 | 31,939 | 81,408 |
| 27 | 675 Miscellaneous Expenses | 39,160 | - | 39,160 | - | 39,160 | - | 39,160 |
| 28 | 403 Depreciation Expense | 1,434,045 | 1,187,153 | 2,621,198 | - | 2,621,198 | - | 2,621,198 |
| 29 | 408 Taxes Other Than Income | 30,483 | (12,644) | 17,839 | - | 17,839 | - | 17,839 |
| 30 | 408.11 Taxes Other Than Income - Property Taxes | 141,038 | (141,038) | - | 171,339 | 171,339 | - | 171,339 |
| 31 | 408.13 Taxes Other Than Income - Other Taxes and L | 2,445 | - | 2,445 | - | 2,445 | - | 2,445 |
| 32 | 409 Income Taxes | 37,720 | (540,075) | (502,355) | 10,901 | (491,454) | 902,355 | 422,458 |
| 33 | Total Operating Expenses | $ 3,826,011 | $ 427,275 | $ 4,253,286 | $ 168,842 | $ 4,422,128 | $ 934,295 | $ 5,357,979 |
| 34 | | | | | | | | |
| 35 | Utility Operating Income (Loss) | $ (94,844) | $ (674,836) | $ (769,680) | $ 17,854 | $ (751,828) | $ 1,435,421 | $ 672,039 |
| 36 | | | | | | | | |
| 37 | 414 Gains (Losses) from Disp of Util Prop | $ 285 | $ - | $ 285 | $ - | $ 285 | $ - | $ 285 |
| 38 | 419 Interest and Dividend Income | 15 | - | 15 | - | 15 | - | 15 |
| 39 | 427 Interest Expense | (174,820) | - | (174,820) | - | (174,820) | - | (174,820) |
| 40 | Total Other Income and Deductions | $ (174,520) | $ - | $ (174,520) | $ - | $ (174,520) | $ - | $ (174,520) |
| 41 | | | | | | | | |
| 42 | Net Income (Loss) | $ (269,364) | $ (674,836) | $ (944,200) | $ 17,854 | $ (926,346) | $ 1,435,421 | $ 497,519 |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | Supporting Schedules: | | | | | | Recap Schedules: | |
| 49 | E-2 | | | | | | A-1 | |
| 50 | C-2 | | | | | | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Pro Forma Adjustments



| Line No. | DESCRIPTION | [A] Actual End of Test Year | [B] Total Pro Forma Adjustments | [C] Adjusted Test Year - As Filed | [F] ADJ #3 | [G] ADJ #4 | [H] ADJ #5 | [K] ADJ #8 | [N] ADJ #11 | [O] ADJ #12 | [P] Adjusted Test Year - Rebuttal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Rebuttal Adjustments | | | | | | |
| 1 | Revenues | | | | | | | | | | |
| 2 | Metered Water Sales | $ 3,441,914 | $ (215,933) | $ 3,225,981 | $ 186,696 | $ - | $ - | $ - | $ - | $ - | $ 3,412,678 |
| 3 | Water Sales - Unmetered | - | - | - | - | - | - | - | - | - | - |
| 4 | Other Operating Revenue | 289,253 | (31,628) | 257,625 | - | - | - | - | - | - | 257,625 |
| 5 | Total Operating Revenues | $ 3,731,167 | $ (247,561) | $ 3,483,606 | $ 186,696 | $ - | $ - | $ - | $ - | $ - | $ 3,670,303 |
| 6 | | | | | | | | | | | |
| 7 | Operating Expenses | | | | | | | | | | |
| 8 | 601 Salary and Wages - Employees | $ 834,697 | $ (39,287) | $ 795,410 | $ - | $ (62,331) | $ - | $ - | $ - | $ - | $ 733,079 |
| 9 | 604 Employee Pensions and Benefits | 177,411 | (7,857) | 169,554 | - | - | - | - | - | - | 169,554 |
| 10 | 610 Purchased Water | 52,085 | - | 52,085 | - | - | - | - | - | - | 52,085 |
| 11 | 615 Purchased Power | 341,029 | (11,789) | 329,240 | 21,848 | - | (372) | - | - | - | 350,716 |
| 12 | 616 Fuel for Power Production | - | - | - | - | - | - | - | - | - | - |
| 13 | 618 Chemicals | 199,212 | (13,725) | 185,487 | 12,824 | - | - | - | - | - | 198,311 |
| 14 | 620 Materials and Supplies | 48,666 | - | 48,666 | - | - | - | - | - | - | 48,666 |
| 15 | 620.08 Materials and Supplies | 155,566 | - | 155,566 | - | - | - | - | - | - | 155,566 |
| 16 | 634 Contractual Services - Management Fees | - | - | - | - | - | - | - | | | - |
| 17 | 635 Contractual Services - Testing | 48,509 | - | 48,509 | - | - | - | - | - | - | 48,509 |
| 18 | 636 Contractual Services - Other | 77,174 | - | 77,174 | - | - | - | - | - | - | 77,174 |
| 19 | 641 Rental of Building/Real Property | 43,234 | - | 43,234 | - | - | - | - | - | - | 43,234 |
| 20 | 642 Rental of Equipment | 5,027 | - | 5,027 | - | - | - | - | - | - | 5,027 |
| 21 | 650 Transportation Expenses | 84,653 | - | 84,653 | - | - | - | - | - | - | 84,653 |
| 22 | 657 Insurance - General Liability | 20,338 | - | 20,338 | - | - | - | - | - | - | 20,338 |
| 23 | 659 Insurance - Other | 3,888 | - | 3,888 | - | - | - | - | - | - | 3,888 |
| 24 | 660 Advertising Expense | 162 | (162) | - | - | - | - | - | - | - | - |
| 25 | 667 Rate Case Expense | - | 21,333 | 21,333 | - | - | - | - | - | - | 21,333 |
| 26 | 670 Bad Debt Expense | 49,469 | (14,633) | 34,836 | - | - | - | 14,633 | - | - | 49,469 |
| 27 | 675 Miscellaneous Expenses | 39,160 | - | 39,160 | - | - | - | - | - | - | 39,160 |
| 28 | 403 Depreciation Expense | 1,434,045 | 1,187,153 | 2,621,198 | - | - | - | - | - | - | 2,621,198 |
| 29 | 408 Taxes Other Than Income | 30,483 | (12,644) | 17,839 | - | - | - | - | - | - | 17,839 |
| 30 | 408.11 Taxes Other Than Income - Property Taxes | 141,038 | (141,038) | - | - | - | - | - | 171,339 | - | 171,339 |
| 31 | 408.13 Taxes Other Than Income - Other Taxes and Licenses | 2,445 | - | 2,445 | - | - | - | - | - | - | 2,445 |
| 32 | 409 Income Taxes | 37,720 | (540,075) | (502,355) | - | - | - | - | - | 10,901 | (491,454) |
| 33 | Total Operating Expenses | $ 3,826,011 | $ 427,275 | $ 4,253,286 | $ 34,673 | $ (62,331) | $ (372) | $ 14,633 | $ 171,339 | $ 10,901 | $ 4,422,128 |
| 34 | | | | | | | | | | | |
| 35 | Operating Income (Loss) | $ (94,844) | $ (674,836) | $ (769,680) | $ 152,024 | $ 62,331 | $ 372 | $ (14,633) | $ (171,339) | $ (10,901) | $ (751,825) |
| 36 | | | | | | | | | | | |
| 37 | 414 Gains (Losses) from Disposition of Utility Property | $ 285 | $ - | $ 285 | $ - | $ - | $ - | $ - | $ - | $ - | $ 285 |
| 38 | 419 Interest and Dividend Income | 15.0 | - | 15.0 | - | - | - | - | - | - | 15 |
| 39 | 427 Interest Expense | (174,820) | - | (174,820) | - | - | - | - | - | - | (174,820) |
| 40 | Total Other Income and Deductions | $ (174,520) | $ - | $ (174,520) | $ - | $ - | $ - | $ - | $ - | $ - | $ (174,520) |
| 41 | | | | | | | | | | | |
| 42 | Net Income (Loss) | $ (269,364) | $ (674,836) | $ (944,200) | $ 152,024 | $ 62,331 | $ 372 | $ (14,633) | $ (171,339) | $ (10,901) | $ (926,346) |
| 43 | | | | | | | | | | | |
| 44 | | | | | | | | | | | |
| 45 | Supporting Schedules: | | | | | | | | | | |
| 46 | C-2 | | | | | | | | | | |
| 47 | E-2 | | | | | | | | | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 1
Remove Annualization Revenue & Expense to reflect End-of-Test Year Cutomer Counts



| Line No. | Class of Service | [A] Average No. of Customers Per Bill Count Sch. H-2 Col. A | [B] Year-End Number of Customers | [C] Average Additional Customers [B - A] | [D] Change in Bills to be Issued | [E] Average Gallons Sold Per Customer | [F] Additional K Gallons To Be Sold | [G] Additional Revenues at Present Rates |
|---|---|---|---|---|---|---|---|---|
| 1 | 5/8" Residential, Town Division | 4,661 | 4,728 | 67 | 813 | Varies | 2,847 | $ (18,711) |
| 2 | 3/4" Residential, Town Division | 99 | 23 | (76) | (901) | Varies | (4,204) | 25,539 |
| 3 | 1" Residential, Town Division | 75 | 79 | 4 | 49 | Varies | 380 | (2,923) |
| 4 | 2" Residential, Town Division | 15 | 14 | (1) | (8) | Varies | (862) | 3,627 |
| 5 | 5/8" Residential, Greater Buckeye Division | 504 | 528 | 24 | 288 | Varies | 2,573 | (11,685) |
| 6 | 3/4" Residential, Greater Buckeye Division | 58 | 6 | (52) | (622) | Varies | (6,375) | 27,798 |
| 7 | 1" Residential, Greater Buckeye Division | 53 | 55 | 2 | 29 | Varies | 274 | (1,916) |
| 8 | 5/8" Residential, Greatter Tonopah | 316 | 300 | (16) | (187) | Varies | - | - |
| 9 | 3/4" Residential, Greatter Tonopah | 4 | 4 | - | - | Varies | - | - |
| 10 | 1" Residential, Greatter Tonopah | 11 | 10 | (1) | (8) | Varies | - | - |
| 11 | 1.5" Residential, Greatter Tonopah | 1 | 1 | - | - | Varies | - | - |
| 12 | Subtotal Residential | 5,797 | 5,748 | (49) | (547) | | (5,368) | $ 21,728 |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | 5/8" Commercial, Town Division | 14 | 17 | 3 | 36 | Varies | 295 | $ (1,312) |
| 16 | 3/4" Commercial, Town Division | 1 | - | (1) | (7) | Varies | (41) | 222 |
| 17 | 1" Commercial, Town Division | 4 | 4 | - | - | Varies | - | - |
| 18 | 1.5" Commercial, Town Division | 2 | 2 | - | - | Varies | - | - |
| 19 | 2" Commercial, Town Division | 21 | 23 | 2 | 33 | Varies | 3,793 | (11,276) |
| 20 | 3" Commercial, Town Division | 2 | 2 | - | - | Varies | - | - |
| 21 | 4" Commercial, Town Division | 1 | - | (1) | (6) | Varies | (8) | 4,223 |
| 22 | 6" Commercial, Town Division | 1 | 1 | - | - | Varies | - | - |
| 23 | 5/8" Commercial, Greater Buckeye Division | 2 | 2 | - | - | Varies | - | - |
| 24 | 5/8" Commercial, Greatter Tonopah | 3 | 2 | (1) | (3) | Varies | - | - |
| 25 | 1" Commercial, Greatter Tonopah | 1 | 1 | - | - | Varies | - | - |
| 26 | 1.5" Commercial, Greatter Tonopah | 2 | 1 | (1) | (6) | Varies | - | - |
| 27 | 6" Commercial, Greatter Tonopah | 1 | 1 | - | - | Varies | - | - |
| 28 | Subtotal Commercial | 55 | 56 | 1 | 47 | | 4,039 | $ (8,144) |
| 29 | | | | | | | | |
| 30 | 2" Construction, Town Division | 15 | - | (15) | (178) | Varies | (32,772) | $ 119,538 |
| 31 | 3" Construction, Town Division | 2 | - | (2) | (16) | Varies | (1,592) | 8,153 |
| 32 | 4" Construction, Town Division | 1 | - | (1) | (10) | Varies | (331) | 7,945 |
| 33 | 6" Construction, Town Division | 1 | - | (1) | (5) | Varies | (1,580) | 8,017 |
| 34 | 2" Construction, Greater Buckeye Division | 2 | - | (2) | (15) | Varies | (9,894) | 29,459 |
| 35 | 2" Construction, Greatter Tonopah | 4 | - | (4) | 44 | Varies | - | - |
| 36 | | 25 | - | (25) | (180) | | (46,168) | $ 173,112 |
| 37 | | | | | | | | |
| 38 | Totals | 5,877 | 5,804 | (73) | (580) | | (47,497) | $ 186,696 |
| 39 | | | | | | | | |
| 40 | | | | | | | | |

| Line No. | Class of Expense | Average Cost Per Gallons Sold Per Sch. E-7 | Additional K Gallons To Be Sold | Additional Cost From Customer Growth |
|---|---|---|---|---|
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | Class of Expense | | | |
| 45 | | | | |
| 46 | Pumping | $ 0.46 | (47,497) | $ 21,848 |
| 47 | Water Treatment | $ 0.27 | (47,497) | 12,824 |
| 48 | | | | |
| 49 | Totals | | | $ 34,673 |
| 50 | | | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 2
Adjust Salaries and Wages to Account for Staff Adjustment 4



| Line No. | | | |
|---|---|---|---|
| 1 | Staff Adjustment | $ | 69,465 |
| 2 | Removal of duplicate reduction | | 7,134 |
| 3 | Adjustment to Salaries and Wages | $ | (62,331) |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | Adjustment to Salaries and Wages | $ | (62,331) |
| 8 | | | |
| 9 | | | |
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| Line No. | | | |
|---|---|---|---|
| 1 | 615 Purchased Power - WUGT Adjustment | $ | (372) |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | Adjustment to Purchased Power | $ | (372) |
| 7 | | | |
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| Line No. | | |
|---|---|---|
| 1 | Bad Debt Expense - Test Year Actual | $ 49,469 |
| 2 | Adjusted Test Year Revenues | 3,670,303 |
| 3 | Bad Debt Expense Rate | 1.35% |
| 4 | | |
| 5 | Adjustment to Bad Debt Expense - Remove Direct Adjustment | $ 14,633 |
| 6 | | |
| 7 | | |
| 8 | Adjustment to Bad Debt Expense for Proposed Revenues | $ 31,939 |
| 9 | | |
| 10 | | |
| 11 | | |
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**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 5
Adjustment to Property Tax



| Line No. | | Test Year As Adjusted | Proposed |
|---|---|---|---|
| 1 | Adjusted Test Year Revenues | $ 3,670,303 | $ 3,670,303 |
| 2 | Weight Factor | 2 | 2 |
| 3 | Subtotal (Line 1 * Line 2) | 7,340,605 | $ 7,340,605 |
| 4 | Proposed Revenue Requirement | 3,670,303 | $ 3,670,303 |
| 5 | Subtotal (Line 4 + Line 5) | 11,010,908 | 11,010,908 |
| 6 | Number of Years | 3 | 3 |
| 7 | Three Year Average (Line 5 / Line 6) | 3,670,303 | $ 3,670,303 |
| 8 | Department of Revenue Mutilplier | 2 | 2 |
| 9 | Revenue Base Value (Line 7 * Line 8) | 7,340,605 | $ 7,340,605 |
| 10 | Plus: 10% of CWIP - | 428,813 | 428,813 |
| 11 | Less: Net Book Value of Licensed Vehicles | 96,323 | $ 96,323 |
| 12 | Full Cash Value (Line 9 + Line 10 - Line 11) | 7,673,095 | $ 7,673,095 |
| 13 | Assessment Ratio | 21.0% | 21.0% |
| 14 | Assessment Value (Line 12 * Line 13) | 1,611,350 | $ 1,611,350 |
| 15 | Composite Property Tax Rate | 10.6332% | 10.6332% |
| 16 | | | $ - |
| 17 | Test Year Adjusted Property Tax (Line 14 * Line 15) - Rebuttal | $ 171,339 | |
| 18 | Company Proposed Property Tax - As Filed | - | |
| 19 | | | |
| 20 | Test Year Adjustment (Line 16-Line 17) | $ 171,339 | |
| 21 | Property Tax - Recommended Revenue (Line 14 * Line 15) | | $ 171,339 |
| 22 | Test Year Adjusted Property Tax Expense (Line 16) | | $ 171,339 |
| 23 | Increase in Property Tax Expense Due to Increase in Revenue Requirement | | $ - |
| 24 | | | |
| 25 | Increase to Property Tax Expense | | $ - |
| 26 | Increase in Revenue Requirement | | - |
| 27 | Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20) | | 0.000000% |
| 28 | | | |
| 29 | | | |
| 30 | Adjustor Commodity Base Rate (Proposed Prop. Tax / Test Year Gallons Sold x 1,000) | | $ 0.23 |
| 31 | At end of year, calculation is made to determine property tax collected using the commodity base rate | | |
| 32 | multiplied by the year's gallons sold/1,000. This equates to the property tax collected, Actual | | |
| 33 | property tax divided by the year's gallons sold/1,000 is also calculated. The difference would | | |
| 34 | be passed through to customers as the Property Tax Adjustor rate. | | |
| 35 | | | |
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**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Income Statement Adjustment 6
Adjust Income Taxes to Reflect Adjusted and Proposed Income Taxes



| Line No. | | Adjusted Test Year Results | Proposed Revenue Results |
|---|---|---|---|
| 1 | | | |
| 2 | Operating Income Before Income Taxes | $ (1,243,280) | $ 1,094,496 |
| 3 | Synchronized Interest | 29,954 | 29,954 |
| 4 | Arizona Taxable Income | $ (1,273,234) | $ 1,064,542 |
| 5 | | | |
| 6 | Arizona Income Tax (6.968%) | $ (88,719) | $ 74,177 |
| 7 | | | |
| 8 | Federal Income Before Taxes | $ (1,273,234) | $ 1,064,542 |
| 9 | Less Arizona Income Taxes | (88,719) | 74,177 |
| 10 | Federal Taxable Income | $ (1,184,515) | $ 990,365 |
| 11 | | | |
| 12 | Federal Income Tax (34% Tax Bracket) | $ (402,735) | $ 336,724 |
| 13 | | | |
| 14 | Total Income Tax | $ (491,454) | $ 410,901 |
| 15 | | | |
| 16 | Tax Rate | 38.5989% | 38.5989% |
| 17 | | | |
| 18 | Effective Income Tax Rates | | |
| 19 | State | 6.9680% | 6.9680% |
| 20 | Federal | 31.6309% | 31.6309% |
| 21 | | | |
| 22 | | | |
| 23 | Test Year Income Taxes (Sch. C-2, Line 31) | $ (502,355) | |
| 24 | Increase/(Decrease) to Income Taxes - Adjusted | $ 10,901 | |
| 25 | | | |
| 26 | Test Year Income Taxes - Adjusted | | $ (491,454) |
| 27 | | | |
| 28 | Increase/(Decrease) to Proposed Income Taxes | | $ 902,355 |
| 29 | | | |
| 30 | | | |
| 31 | *Calculation of Interest Synchronization:* | | |
| 32 | Rate Base (Sch. B-1) | | $ 7,902,833 |
| 33 | Weighted Average Cost of Debt (Sch. D-1) | | 0.38% |
| 34 | Synchronized Interest (L32 X L33) | | $ 29,954 |
| 35 | | | |
| 36 | | | |
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**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Gross Conversion Factor

Schedule C-3

| Line No. | | | | Percentage of Incremental Gross Revenues |
|---|---|---|---|---|
| 1 | Revenue | | | 100.0000% |
| 2 | Uncollecible Factor (L14) | | | 0.8276% |
| 3 | Revenues (L1 - L2) | | | 99.1724% |
| 4 | Combined Federal and State Income Tax | | | 38.5989% |
| 5 | Subtotal (L3 - L4) | | | 60.5735% |
| 6 | **Revenue Conversion Factor (L1 / L5)** | | | **1.650886** |
| 7 | | | | |
| 8 | | | | |
| 9 | Calculation of Uncollectible Factor: | | | |
| 10 | Revenue | | | 100.0000% |
| 11 | Combined Federal and State Tax Rate (L23) | | | 38.5989% |
| 12 | One Minus Combined Income Tax Rate (L10 - L11) | | | 61.4011% |
| 13 | Uncollectible Rate | | | 1.3478% |
| 14 | Uncollectible Factor (L12 x L13 ) | | | 0.8276% |
| 15 | | | | |
| 16 | Calculation of Effective Tax Rate: | | | |
| 17 | Arizona State Income Tax Rate | | 6.9680% | |
| 18 | Operating Income Before Taxes (Arizona Taxable Income) | 100.0000% | | |
| 19 | Arizona State Income Tax Rate | 6.9680% | | |
| 20 | Federal Taxable Income (L18 - L19) | 93.0320% | | |
| 21 | Applicable Federal Income Tax Rate | 34.0000% | | |
| 22 | Effective Federal Income Tax Rate (L20 x L21) | | 31.6309% | |
| 23 | Combined Federal and State Income Tax Rate (L17 +L22) | | | 38.5989% |
| 24 | | | | |
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**DOCKET NOs. SW-02445A-09-0077 *et al.***

# Rate Design Rebuttal Testimony
# of
# Jamie Moe

**November 30, 2009**

EXHIBIT
A-23

## TABLE OF CONTENTS

I. Introduction ..... 1

## I. Introduction.

**Q. Can you state the purpose of your testimony in this filing?**

A. I introduce the H Schedules, which illustrate updated rates to meet the Company's proposed rebuttal revenue requirements for each utility, as well as a revised Schedule A-1 which includes the revenue impact on customer classes. The change in revenue requirement is due to the Company's proposed adjustments to rate base and operating income and expenses as detailed in the Moe rebuttal testimony.

**Q. Please provide the Company's updated revenue requirement for each utility.**

A. The revenue requirement per the rebuttal filing for each utility is as follows:

| | |
|---|---|
| Palo Verde | $15,602,936 |
| Santa Cruz | 12,933,524 |
| Valencia, Town | 4,649,122 |
| Valencia, GBD | 488,871 |
| WUGT | 882,733 |
| Willow Valley | 940,634 |

**Q. Please provide the new rates.**

A. The new rates for each utility are shown on Schedule H-3. The typical bill analysis for each utility is shown on Schedule H-4.

**Q. Does this conclude your testimony?**

A. Yes.

# Moe – Rate Design Rebuttal Schedules

# Moe

# Rate Design Rebuttal Schedule

# PVUC

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | | | REBUTTAL | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Original Cost - As Filed | Fair Value - As Filed | | | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | | | $ 63,637,830 | $ 63,637,830 | | | $ 64,011,238 | $ 64,011,238 |
| 2 | | | | | | | | | |
| 3 | Adjusted Operating Income (Loss) | | | $ 144,516 | $ 144,516 | | | $ (83,236) | $ (83,236) |
| 4 | | | | | | | | | |
| 5 | Current Rate of Return (L3 / L1) | | | 0.23% | 0.23% | | | -0.13% | -0.13% |
| 6 | | | | | | | | | |
| 7 | Required Operating Income (L9 * L1) | | | $ 5,307,395 | $ 5,307,395 | | | $ 5,338,537 | $ 5,338,537 |
| 8 | | | | | | | | | |
| 9 | Required Rate of Return | | | 8.34% | 8.34% | | | 8.34% | 8.34% |
| 10 | | | | | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | | | $ 5,162,879 | $ 5,162,879 | | | $ 5,421,773 | $ 5,421,773 |
| 12 | | | | | | | | | |
| 13 | Gross Revenue Conversion Factor | | | 1.645086 | 1.645086 | | | 1.652434 | 1.652434 |
| 14 | | | | | | | | | |
| 15 | Increase in Gross Revenue Requirements | | | $ 8,493,379 | $ 8,493,379 | | | $ 8,959,124 | $ 8,959,124 |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | Customer | Present | Proposed | Dollar | Percent | Present | Proposed | Dollar | Percent |
| 19 | Classification | Rates | Rates | Increase | Increase | Rates | Rates | Increase | Increase |
| 20 | | | | | | | | | |
| 21 | Residential | $ 5,802,778 | $ 12,709,188 | $ 6,906,410 | 119.0% | $ 5,939,712 | $ 13,331,259 | $ 7,391,548 | 124.4% |
| 22 | Commercial | 202,074 | 458,560 | 256,486 | 126.9% | 187,752 | 438,421 | 250,669 | 133.5% |
| 23 | Non-Potable | 170,556 | 1,131,421 | 960,866 | 563.4% | 170,556 | 1,118,549 | 947,993 | 555.8% |
| 24 | | | | | | | | | |
| 25 | Total of Water Revenues | $ 6,175,408 | $ 14,299,170 | $ 8,123,762 | 131.5% | $ 6,298,020 | $ 14,888,229 | $ 8,590,209 | 136.4% |
| 26 | | | | | | | | | |
| 27 | Miscellaneous Revenues | 339,704 | 713,079 | 373,375 | 109.9% | 339,704 | 713,079 | 373,375 | 109.9% |
| 28 | | | | | | | | | |
| 29 | Total Operating Revenues | $ 6,515,112 | $ 15,012,249 | $ 8,497,137 | 130.4% | $ 6,637,724 | $ 15,601,308 | $ 8,963,584 | 135.0% |
| 30 | | | | | | | | | |
| 31 | | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | Supporting Schedules: | | | | | | | | |
| 34 | B-1 | | | | | | | | |
| 35 | C-1 | | | | | | | | |
| 36 | C-3 | | | | | | | | |
| 37 | H-1 | | | | | | | | |
| 38 | | | | | | | | | |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules** Schedule H-1
Test Year Ended December 31, 2008
Classification - Present and Proposed Rates

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | Residential | $ 5,939,712 | $ 13,331,259 | $ 7,391,548 | 124.4% |
| 3 | Commercial | 187,752 | 438,421 | 250,669 | 133.5% |
| 4 | Recycled | 170,556 | 1,118,549 | 947,993 | 555.8% |
| 5 | | | | | |
| 6 | Total Water Revenues | $ 6,298,020 | $ 14,888,229 | $ 8,590,209 | 136.4% |
| 7 | | | | | |
| 8 | Miscellaneous Revenues (Sch. C-1, L3) | 339,704 | 713,079 | | |
| 9 | | | | | |
| 10 | Total Operating Revenues | $ 6,637,724 | $ 15,601,308 | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | Pro Forma Adjustments | (122,612) | | | |
| 14 | Subtotal (L10 + L14) | $ 6,515,112 | | | |
| 15 | | | | | |
| 16 | Total Gen. Ledger Operating Revenues | | | | |
| 17 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 6,521,201 | | | |
| 18 | Unreconciled Difference (L14 - L17) | (6,088) | | | |
| 19 | % | -0.09% | | | |
| 20 | | | | | |
| 21 | Target Revenue Requirement (Sch. C-1, Ln. 5) | | 15,602,936 | | |
| 22 | Difference (L10 - L21) | | (1,628) | | |
| 23 | % | | -0.01% | | |
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Global Water - Palo Verde Utilities Company - Rebuttal Schedules
*Test Year Ended December 31, 2008*
Analysis of Revenue by Detailed Class



| Line No. | Class of Service | [A] Average Number of Customers | [B] Average Consumption | [C] Bill Count Water Revenues: Present Rates | [D] Adjustments | [E] Adjusted Present Rates [C + D] | [F] Proposed Rates | [G] Proposed Increase [F - E] | [H] % | [I] General Ledger Water Revenues: T.Y. Ended 12/31/2008 | [J] Revenue Adjustments | [K] Adjusted G.L. Revenues [I + J] | [L] Unreconciled Difference [E - K] | [M] % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | |
| 2 | 5/8" Residential | 1,719 | N/A | $ 680,559 | $ - | $ 680,559 | $ 1,503,417 | $ 822,858 | 120.91% | | | | | |
| 3 | 3/4" Residential * | 13,210 | N/A | 5,231,028 | (95,015) | 5,136,013 | 11,555,816 | 6,419,803 | 125.00% | | | | | |
| 4 | 1" Residential | 123 | N/A | 121,523 | - | 121,523 | 268,454 | 146,932 | 120.91% | | | | | |
| 5 | 1.5" Residential | 1 | N/A | 825 | - | 825 | 1,823 | 998 | N/A | | | | | |
| 6 | 2" Residential | 1 | N/A | 792 | - | 792 | 1,750 | 958 | 120.91% | | | | | |
| 7 | 5/8" Commercial | 4 | N/A | 1,353 | - | 1,353 | 2,989 | 1,636 | 120.91% | | | | | |
| 8 | 3/4" Commercial | 4 | N/A | 1,452 | - | 1,452 | 3,208 | 1,756 | 120.91% | | | | | |
| 9 | 1" Commercial | 17 | N/A | 16,005 | - | 16,005 | 35,357 | 19,352 | 120.91% | | | | | |
| 10 | 1.5" Commercial | 25 | N/A | 48,015 | - | 48,015 | 106,070 | 58,055 | 120.91% | | | | | |
| 11 | 2" Commercial * | 35 | N/A | 108,240 | (10,710) | 97,530 | 239,112 | 141,582 | 145.17% | | | | | |
| 12 | 3" Commercial | 2 | N/A | 12,672 | - | 12,672 | 27,994 | 15,322 | 120.91% | | | | | |
| 13 | 4" Commercial | 2 | N/A | 10,725 | - | 10,725 | 23,693 | 12,968 | 120.91% | | | | | |
| 14 | Recycled | 9 | 5,501,235 | 170,556 | - | 170,556 | 1,118,549 | 947,993 | 555.83% | | | | | |
| 15 | Totals | 15,152 | 6,873 | $ 6,403,744 | (105,725) | $ 6,298,020 | $ 14,888,229 | $ 8,590,209 | 136.40% | | | | | |
| 16 | | | | | | | | | | | | | | |
| 17 | Total Residential | 15,054 | N/A | $ 6,034,727 | $ (95,015) | $ 5,939,712 | $ 13,331,259 | $ 7,391,548 | 124.44% | $ 5,905,989 | $ 136,934 | $ 6,042,922 | $ (103,211) | -1.71% |
| 18 | Total Commercial | 89 | N/A | 198,462 | (10,710) | 187,752 | 438,421 | 250,669 | 133.51% | 187,862 | (14,322) | 173,540 | 14,212 | 8.19% |
| 19 | Recycled | 9 | 5,501,235 | 170,556 | - | 170,556 | 1,118,549 | 947,993 | 555.83% | 171,749 | - | 171,749 | (1,194) | -0.69% |
| 20 | Totals | 15,152 | 6,873 | 6,403,744 | (105,725) | 6,298,020 | 14,888,229 | 8,590,209 | 136.40% | $ 6,265,600 | $ 122,612 | $ 6,388,212 | (90,192) | -1.41% |
| 21 | | | | | | | | | | | | | | |
| 22 | Miscellaneous Revenue (Sch. C-1) | | | 339,704 | - | 339,704 | 713,079 | 373,375 | 109.91% | | | | | |
| 23 | Total Revenue Generated | | | | | | $ 15,601,308 | | | | | | | |
| 24 | Target Revenue Requirement (Sch. C-1) | | | | | | 15,602,936 | | | | | | | |
| 25 | Over/(Short) | | | | | | $ (1,628) | | | | | | | |
| 26 | | | | | | | | | | | | | | |

27 * Adjustments for Pro-Rated Bills not Accounted for in Bill Count applied in Col. D for reconciliation, no revenue impact
28 Average Pro-Rated Bill Period - 13 Days (Remove 17 Days)

| | | Pro-Rated Bills | Avg. Pro-Rated Min. | Adjustment |
|---|---|---|---|---|
| 29 | | | | |
| 30 | Residential | 5,081 | 18.70 | (95,015) |
| 31 | Commercial | 90 | 119.00 | (10,710) |
| 32 | | | | |
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Reconciliation from Bill Count Present Revenues to General Ledger - same as above, but demonstrates unadjusted reconciliation including pro-rated bills for residential and commercial. Other classes left as demonstrated above.

| | Residential | Commercial |
|---|---|---|
| Bill Count - Present Rates | $ 6,034,727 | 198,462 |
| Acct. Adjustments - Sch. C2, p2. | - | - |
| Pro-Rated Bill Adjustment | (95,015) | (10,710) |
| | $ 5,939,712 | $ 187,752 |
| General Ledger | $ 5,905,989 | 187,862 |
| Unreconciled Difference | $ 33,723 | (110) |

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Establishment | $ 25.00 | $ 50.00 | $ 25.00 | 6,819 | $ 170,475 |
| 3 | After Hours | 50.00 | 100.00 | 50.00 | 341 | 17,050.00 |
| 4 | Reconnect | 30.00 | 75.00 | 45.00 | 3,867 | 174,015 |
| 5 | NSF Fees | 15.00 | 30.00 | 15.00 | 789 | 11,835 |
| 6 | | | | | | |
| 7 | Proposed Misc. Service Charge Increase | | | | | $ 373,375 |
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**Global Water - Palo Verde Utilities Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

**Monthly Minimum Charges:**

| | Basic Service Charge | | |
|---|---|---|---|
| Meter Size (All Classes) | Present | Proposed | Change |
| 5/8" Meter | $ 33.00 | $ 72.90 | $ 39.90 |
| 3/4" Meter | 33.00 | 72.90 | 39.90 |
| 1" Meter | 82.50 | 182.25 | 99.75 |
| 1.5" Meter | 165.00 | 364.50 | 199.50 |
| 2" Meter | 264.00 | 583.20 | 319.20 |
| 3" Meter | 528.00 | 1,166.40 | 638.40 |
| 4" Meter | 825.00 | 1,822.50 | 997.50 |
| 6" Meter | 1,650.00 | 3,645.00 | 1,995.00 |
| 8" Meter | N/A | 7,290.00 | N/A |

Note: See Sch. H-3, Page 2 for proposed phase in of rates.

**Commodity Rate Charges:**

| | Rate Block | | Volumetric Charge (per 1,000 gallons) | | |
|---|---|---|---|---|---|
| Pressurized Recycled Water - All Meter Sizes and Classes | Present | Proposed | Present | Proposed | Change |
| Tier One Breakover | N/A | N/A | N/A | N/A | N/A |
| Tier Two Breakover | N/A | N/A | N/A | N/A | N/A |
| Tier Three Breakover | N/A | N/A | N/A | N/A | N/A |
| Tier Four Breakover | N/A | N/A | N/A | N/A | N/A |
| Tier Five Breakover | N/A | N/A | N/A | N/A | N/A |
| Tier Six Breakover | N/A | N/A | N/A | N/A | N/A |

| | Volumetric Charge | | |
|---|---|---|---|
| Non-Potable Water - All Meter Sizes and Classes | Present | Proposed | Change |
| All Gallons (Per Acre Foot) | $ 100.00 | $ 651.70 | $ 551.70 |
| All Gallons (Per 1,000 Gallons) | N/A | 2.00 | N/A |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 25.00 | $ 50.00 |
| Establishment of Service (After Hours) | - | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | N/A | Cost |
| After Hours Service Charge, Per Hour | 50.00 | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | N/A | 30.00 |
| Meter Test Fee (If Correct) | N/A | 50.00 |
| NSF Check | 10.00 | 30.00 |
| Late Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-603(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-603(B).

**Proposed Phase In Rates**

| | Basic Service Charge | | | |
|---|---|---|---|---|
| Meter Size (All Classes) | Present | Year 1 | Year 2 | Year 3 |
| 5/8" Meter | $ 33.00 | $ 45.33 | $ 58.16 | $ 72.90 |
| 3/4" Meter | 33.00 | 45.33 | 58.16 | 72.90 |
| 1" Meter | 82.50 | 113.33 | 145.40 | 182.25 |
| 1.5" Meter | 165.00 | 226.65 | 290.80 | 364.50 |
| 2" Meter | 264.00 | 362.64 | 465.28 | 583.20 |
| 3" Meter | 528.00 | 725.28 | 930.56 | 1,166.40 |
| 4" Meter | 825.00 | 1,133.25 | 1,454.00 | 1,822.50 |
| 6" Meter | 1,650.00 | 2,266.50 | 2,908.00 | 3,645.00 |
| 8" Meter | N/A | 4,533.00 | 5,816.00 | 7,290.00 |

**Global Water - Palo Verde Utilities Company - Rebuttal Schedules** Schedule H-4

Test Year Ended December 31, 2008

Typical Bill Analysis

| Class of Service | Average Monthly Consumption | Present Rates | Proposed Rates | Proposed Increase Amount | Proposed Increase % |
|---|---|---|---|---|---|
| 5/8" Residential | N/A | $ 33.00 | $ 72.90 | $ 39.90 | 120.91% |
| 3/4" Residential | N/A | 33.00 | 72.90 | 39.90 | 120.91% |
| 1" Residential | N/A | 82.50 | 182.25 | 99.75 | 120.91% |
| 1.5" Residential | N/A | 165.00 | 364.50 | 199.50 | 120.91% |
| 2" Residential | N/A | 264.00 | 583.20 | 319.20 | 120.91% |
| 5/8" Commercial | N/A | 33.00 | 72.90 | 39.90 | 120.91% |
| 3/4" Commercial | N/A | 33.00 | 72.90 | 39.90 | 120.91% |
| 1" Commercial | N/A | 82.50 | 182.25 | 99.75 | 120.91% |
| 1.5" Commercial | N/A | 165.00 | 364.50 | 199.50 | 120.91% |
| 2" Commercial | N/A | 264.00 | 583.20 | 319.20 | 120.91% |
| 3" Commercial | N/A | 528.00 | 1,166.40 | 638.40 | 120.91% |
| 4" Commercial | N/A | 825.00 | 1,822.50 | 997.50 | 120.91% |
| 2" Construction | | 276.98 | 583.20 | 306.22 | 110.55% |
| 3" Construction | | 81.83 | 1,166.40 | 1,084.57 | 1325.38% |
| 4" Construction | | 120.24 | 1,822.50 | 1,702.26 | 1415.72% |
| 8" Construction | | 2,051.80 | 7,290.00 | 5,238.20 | 255.30% |
| 2" Lake | | 264.00 | 583.20 | 319.20 | 120.91% |
| Recycled | 5,501,235 | 2,033.51 | 13,301.66 | 11,268.15 | 554.12% |

# Moe

# Rate Design Rebuttal Schedule

# SCWC

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | | | REBUTTAL | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Original Cost - As Filed | Fair Value - As Filed | | | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | | | $ 45,260,919 | $ 45,260,919 | | | $ 45,902,454 | $ 45,902,454 |
| 2 | | | | | | | | | |
| 3 | Adjusted Operating Income (Loss) | | | $ 1,969,624 | $ 1,969,624 | | | $ 1,753,427 | $ 1,753,427 |
| 4 | | | | | | | | | |
| 5 | Current Rate of Return (L3 / L1) | | | 4.35% | 4.35% | | | 3.82% | 3.82% |
| 6 | | | | | | | | | |
| 7 | Required Operating Income (L9 * L1) | | | $ 3,842,652 | $ 3,842,652 | | | $ 3,897,118 | $ 3,897,118 |
| 8 | | | | | | | | | |
| 9 | Required Rate of Return | | | 8.49% | 8.49% | | | 8.49% | 8.49% |
| 10 | | | | | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | | | $ 1,873,028 | $ 1,873,028 | | | $ 2,143,691 | $ 2,143,691 |
| 12 | | | | | | | | | |
| 13 | Gross Revenue Conversion Factor | | | 1.645086 | 1.645086 | | | 1.643736 | 1.643736 |
| 14 | | | | | | | | | |
| 15 | Increase in Gross Revenue Requirements | | | $ 3,081,292 | $ 3,081,292 | | | $ 3,523,663 | $ 3,523,663 |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | Customer | Present | Proposed | Dollar | Percent | Present | Proposed | Dollar | Percent |
| 19 | Classification | Rates | Rates | Increase | Increase | Rates | Rates | Increase | Increase |
| 20 | | | | | | | | | |
| 21 | Residential | $ 7,025,770 | $ 8,114,564 | $ 1,088,794 | 15.5% | $ 7,185,159 | $ 8,420,104 | $ 1,234,945 | 17.2% |
| 22 | Commercial | 303,610 | 442,206 | 138,596 | 45.6% | 282,162 | 423,168 | 141,007 | 50.0% |
| 23 | Irrigation | 1,279,833 | 2,074,349 | 794,516 | 62.1% | 1,279,833 | 2,147,038 | 867,205 | 67.8% |
| 24 | Construction | - | - | - | N/A | 159,412 | 378,786 | 219,374 | N/A |
| 25 | Lake | 27,607 | 46,931 | 19,324 | 70.0% | 27,607 | 48,701 | 21,094 | 76.4% |
| 26 | Non-Potable | 116,258 | 762,152 | 645,893 | 555.6% | 116,258 | 762,244 | 645,985 | 555.6% |
| 27 | | | | | | | | | |
| 28 | Total of Water Revenues | $ 8,753,078 | $ 11,440,202 | $ 2,687,124 | 30.7% | $ 9,050,430 | $ 12,180,041 | $ 3,129,611 | 34.6% |
| 29 | | | | | | | | | |
| 30 | Miscellaneous Revenues | 365,946 | 752,151 | 386,205 | 105.5% | 365,946 | 752,151 | 386,205 | 105.5% |
| 31 | | | | | | | | | |
| 32 | Total Operating Revenues | $ 9,119,023 | $ 12,192,353 | $ 3,073,329 | 33.7% | $ 9,416,375 | $ 12,932,191 | $ 3,515,816 | 37.3% |
| 33 | | | | | | | | | |
| 34 | | | | | | | | | |
| 35 | | | | | | | | | |
| 36 | Supporting Schedules: | | | | | | | | |
| 37 | B-1 | | | | | | | | |
| 38 | C-1 | | | | | | | | |
| 39 | C-3 | | | | | | | | |
| 40 | H-1 | | | | | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**

Schedule H-1

Test Year Ended December 31, 2008

Classification - Present and Proposed Rates

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | Residential | $ 7,185,159 | $ 8,420,104 | $ 1,234,945 | 17.2% |
| 2 | Commercial | 282,162 | 423,168 | 141,007 | 50.0% |
| 3 | Irrigation | 1,279,833 | 2,147,038 | 867,205 | 67.8% |
| 4 | Construction | 159,412 | 378,786 | 219,374 | N/A |
| 5 | Lake | 27,607 | 48,701 | 21,094 | 76.4% |
| 6 | Non-Potable | 116,258 | 762,244 | 645,985 | 555.6% |
| 7 | | | | | |
| 8 | Total Water Revenues | $ 9,050,430 | $ 12,180,041 | $ 3,129,611 | 34.6% |
| 9 | | | | | |
| 10 | Miscellaneous Revenues (Sch. C-1, L4) | 365,946 | 752,151 | | |
| 11 | | | | | |
| 12 | Total Operating Revenues | $ 9,416,375 | $ 12,932,191 | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | Pro Forma Adjustments | (299,141) | | | |
| 16 | Subtotal (L12 + L15) | $ 9,117,234 | | | |
| 17 | | | | | |
| 18 | Total Gen. Ledger Operating Revenues | | | | |
| 19 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 9,110,720 | | | |
| 20 | Unreconciled Difference (L16 - L19) | 6,514 | | | |
| 21 | % | 0.07% | | | |
| 22 | | | | | |
| 23 | Target Revenue Requirement (Sch. C-1, L5) | | 12,933,524 | | |
| 24 | Difference (L11 - L23) | | (1,333) | | |
| 25 | % | | -0.01% | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |

Global Water - Santa Cruz Water Company - Rebuttal Schedules
Test Year Ended December 31, 2008
Analysis of Revenue by Detailed Class



| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] | [J] | [K] | [L] | [M] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Bill Count Water Revenues | | | | | | General Ledger Water Revenues | | | | |
| Line No. | Class of Service | Average Number of Customers | Average Consumption | Present Rates | Adjustments | Adjusted Present Rates [C + D] | Proposed Rates | Proposed Increase [F - E] | % | T.Y. Ended 12/31/2008 | Revenue Adjustments | Adjusted G.L. Revenues [I + J] | Unreconciled Difference [E - K] | % |
| 1 | 5/8" Residential | 1,719 | 7,827 | $ 885,065 | $ - | $ 885,065 | $ 1,022,336 | $ 137,271 | 15.51% | | | | | |
| 2 | 3/4" Residential | 13,210 | 6,474 | 6,262,340 | (71,981) | 6,190,359 | 7,257,410 | 1,067,051 | 17.24% | | | | | |
| 3 | 1" Residential | 123 | 5,533 | 110,091 | (1,789) | 108,302 | 138,409 | 30,108 | 27.80% | | | | | |
| 4 | 1.5" Residential | 1 | 2,100 | 642 | - | 642 | 840 | 198 | N/A | | | | | |
| 5 | 2" Residential | 1 | 25,000 | 791 | - | 791 | 1,108 | 317 | 40.12% | | | | | |
| 6 | 5/8" Commercial | 4 | 68,256 | 8,195 | - | 8,195 | 13,588 | 5,394 | 65.82% | | | | | |
| 7 | 3/4" Commercial | 4 | 7,920 | 1,922 | - | 1,922 | 2,746 | 824 | 42.89% | | | | | |
| 8 | 1" Commercial | 17 | 10,003 | 16,717 | - | 16,717 | 22,283 | 5,566 | 33.30% | | | | | |
| 9 | 1.5" Commercial | 25 | 49,557 | 73,177 | - | 73,177 | 107,712 | 34,535 | 47.19% | | | | | |
| 10 | 2" Commercial | 35 | 71,888 | 157,699 | (2,550) | 155,149 | 237,641 | 82,492 | 53.17% | | | | | |
| 11 | 3" Commercial | 2 | 130,875 | 17,704 | - | 17,704 | 26,622 | 8,918 | 50.37% | | | | | |
| 12 | 4" Commercial | 2 | 35,731 | 9,299 | - | 9,299 | 12,577 | 3,278 | 35.25% | | | | | |
| 13 | 5/8" Irrigation | 1 | 7,750 | 170 | - | 170 | 201 | 31 | 18.04% | | | | | |
| 14 | 3/4" Irrigation | 10 | 10,457 | 5,859 | - | 5,859 | 7,982 | 2,123 | 36.23% | | | | | |
| 15 | 1" Irrigation | 7 | 10,267 | 6,560 | - | 6,560 | 8,560 | 2,001 | 30.50% | | | | | |
| 16 | 1.5" Irrigation | 7 | 93,538 | 47,914 | - | 47,914 | 75,435 | 27,521 | 57.44% | | | | | |
| 17 | 2" Irrigation | 25 | 139,209 | 162,406 | - | 162,406 | 260,363 | 97,957 | 60.32% | | | | | |
| 18 | 4" Irrigation | 1 | 1,815,250 | 21,368 | - | 21,368 | 37,641 | 16,273 | 76.15% | | | | | |
| 19 | 5/8" HOA | 14 | 2,826 | 5,069 | - | 5,069 | 6,497 | 1,428 | 28.17% | | | | | |
| 20 | 3/4" HOA | 21 | 11,613 | 12,968 | - | 12,968 | 17,099 | 4,131 | 31.85% | | | | | |
| 21 | 1" HOA | 11 | 46,236 | 22,232 | - | 22,232 | 33,854 | 11,622 | 52.28% | | | | | |
| 22 | 1.5" HOA | 16 | 197,454 | 116,467 | - | 116,467 | 196,502 | 80,035 | 68.72% | | | | | |
| 23 | 2" HOA | 59 | 338,683 | 753,707 | - | 753,707 | 1,283,790 | 530,083 | 70.33% | | | | | |
| 24 | 3" HOA | 1 | 1,065,833 | 38,023 | - | 38,023 | 66,604 | 28,581 | 75.17% | | | | | |
| 25 | 4" HOA | 2 | 1,523,421 | 87,090 | - | 87,090 | 152,512 | 65,421 | 75.12% | | | | | |
| 26 | 2" Construction | 42 | 76,940 | 138,215 | - | 138,215 | 303,246 | 165,031 | N/A | | | | | |
| 27 | 3" Construction | 3 | 22,731 | 2,128 | - | 2,128 | 16,385 | 14,258 | N/A | | | | | |
| 28 | 4" Construction | 1 | 33,400 | 601 | - | 601 | 4,818 | 4,216 | N/A | | | | | |
| 29 | 8" Construction | 1 | 569,944 | 18,468 | - | 18,468 | 54,337 | 35,869 | N/A | | | | | |
| 30 | 2" Lake | 1 | 807,917 | 27,607 | - | 27,607 | 48,701 | 21,094 | 76.41% | | | | | |
| 31 | Non-Potable | 5 | 6,559,703 | 116,258 | - | 116,258 | 762,244 | 645,985 | 555.65% | | | | | |
| 32 | Totals | 15,371 | 9,160 | $ 9,126,750 | (76,320) | $ 9,050,430 | $ 12,180,041 | $ 3,129,611 | 34.58% | | | | | |
| 33 | | | | | | | | | | | | | | |
| 34 | Total Residential | 15,054 | 6,620 | $ 7,258,929 | $ (73,770) | $ 7,185,159 | $ 8,420,104 | $ 1,234,945 | 17.19% | $ 7,120,475 | $ 161,178 | $ 7,281,653 | $ (96,494) | -1.33% |
| 35 | Total Commercial | 89 | 51,709 | 284,712 | (2,550) | 282,162 | 423,168 | 141,007 | 49.97% | 278,248 | (21,448) | 256,800 | 25,362 | 9.88% |
| 36 | Total Irrigation | 175 | 186,953 | 1,279,833 | - | 1,279,833 | 2,147,038 | 867,205 | 67.76% | 1,324,387 | (58,535) | 1,265,852 | 13,981 | 1.10% |
| 37 | Total Construction | 47 | 82,154 | 159,412 | - | 159,412 | 378,786 | 219,374 | N/A | 137,002 | 155,753 | 292,754 | (133,343) | -45.55% |
| 38 | Total Lake | 1 | 807,917 | 27,607 | - | 27,607 | 48,701 | 21,094 | 76.41% | 27,577 | - | 27,577 | 30 | 0.11% |
| 39 | Non-Potable | 5 | 6,559,703 | 116,258 | - | 116,258 | 762,244 | 645,985 | 555.65% | 54,067 | 62,194 | 116,261 | (2) | 0.00% |
| 40 | Totals | 15,371 | 9,160 | 9,126,750 | (76,320) | 9,050,430 | 12,180,041 | 3,129,611 | 34.58% | $ 8,941,755 | $ 299,141 | $ 9,240,896 | (190,466) | -2.06% |
| 41 | | | | | | | | | | | | | | |
| 42 | Miscellaneous Revenue (Sch. C-1) | | | 365,946 | - | 365,946 | 752,151 | 386,205 | 105.54% | | | | | |
| 43 | Total Revenue Generated | | | | | | $ 12,932,191 | | | | | | | |
| 44 | Target Revenue Requirement (Sch. C-1) | | | | | | 12,933,524 | | | | | | | |
| 45 | Over/(Short) | | | | | | $ (1,333) | | | | | | | |

* $62,194 adjustment to Non-Potable is transfer of Non-Potable irrigation and construction usage.

46

47 * Adjustments for Pro-Rated Bills not Accounted for in Bill Count applied in Col. D for reconciliation, no revenue impact

48 Average Pro-Rated Bill Period - 13 Days (Remove 17 Days)

| | | Pro-Rated Bills | Avg. Pro-Rated Min. | Adjustment |
|---|---|---|---|---|
| 49 | | | | |
| 50 | Residential | 5,081 | 14 | (71,981) |
| 51 | Commercial | 90 | 28 | (2,550) |

52

53

54

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Reconciliation from Bill Count Present Revenues to General Ledger - same as above, but demonstrates unadjusted reconciliation including pro-rated bills for residential and commercial. Other classes left as demonstrated above.

| | Residential | Commercial |
|---|---|---|
| Bill Count - Present Rates | $ 7,258,929 | $ 284,712 |
| Acct. Adjustments - Sch. C2, p2. | - | - |
| Pro-Rated Bill Adjustment | (71,981) | (2,550) |
| | $ 7,186,948 | $ 282,162 |
| General Ledger | $ 7,120,475 | $ 278,248 |
| Unreconciled Difference | $ 66,473 | $ 3,913 |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Establishment | $ 25.00 | $ 50.00 | $ 25.00 | 6,891 | $ 172,275 |
| 3 | After Hours | 50.00 | 100.00 | 50.00 | 630 | 31,500 |
| 4 | Reconnect | 30.00 | 75.00 | 45.00 | 3,878 | 174,510 |
| 5 | NSF Fees | 15.00 | 30.00 | 15.00 | 528 | 7,920 |
| 6 | | | | | | |
| 7 | Proposed Misc. Service Charge Increase | | | | | $ 386,205 |
| 8 | | | | | | |
| 9 | | | | | | |
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| 12 | | | | | | |
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| 39 | | | | | | |
| 40 | | | | | | |

**Global Water - Santa Cruz Water Company - Rebuttal Schedules**
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

Schedule H-3

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 25.00 | $ 33.35 | $ 8.35 |
| 3/4" Meter | 25.00 | 33.35 | 8.35 |
| 1" Meter | 62.50 | 83.38 | 20.88 |
| 1.5" Meter | 125.00 | 166.75 | 41.75 |
| 2" Meter | 200.00 | 266.80 | 66.80 |
| 3" Meter | 400.00 | 533.60 | 133.60 |
| 4" Meter | 625.00 | 833.75 | 208.75 |
| 6" Meter | 1,250.00 | 1,667.50 | 417.50 |
| 8" Meter | N/A | 3,335.00 | N/A |
| Construction | N/A | Same as Above | N/A |

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (in 1,000's of Gallons) | Rate Block Present | Proposed | Volumetric Charge (per 1,000 gallons) Present | Proposed | Change |
|---|---|---|---|---|---|
| Tier One Breakover | 1 | 1 | $ - | $ 1.00 | varies |
| Tier Two Breakover | 999,999,999 | 5 | 2.60 | 2.25 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.50 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.00 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.75 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.75 | varies |
| **Construction/Standpipe (in 1,000's of Gallons)** | | | | | |
| Tier One Breakover | 999,999,999 | 1 | $ 3.60 | $ 1.00 | varies |
| Tier Two Breakover | N/A | 5 | N/A | 2.25 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.50 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.00 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.75 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.75 | varies |
| **All Meter Sizes and Classes** | | | | | |
| Conservation Rebate Threshold ("CBT") | N/A | 7,001 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT | N/A | 65% | | | |

| Non-Potable Water - All Meter Sizes and Classes | Volumetric Charge Present | Proposed | Change |
|---|---|---|---|
| All Gallons (Per Acre Foot) | N/A | $ 651.70 | N/A |
| All Gallons (Per 1,000 Gallons) | N/A | 2.00 | N/A |

| Service Line & Meter Installation Charges [1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 400.00 | $ 600.00 | $ 200.00 |
| 3/4" Meter | 440.00 | 700.00 | 260.00 |
| 1" Meter | 500.00 | 810.00 | 310.00 |
| 1.5" Meter | 715.00 | 1,075.00 | 360.00 |
| 2" Turbo | 1,170.00 | 1,875.00 | 705.00 |
| 2" Compound | 1,700.00 | 2,720.00 | 1,020.00 |
| 3" Turbo | 1,585.00 | 2,715.00 | 1,130.00 |
| 3" Compound | 2,190.00 | 3,710.00 | 1,520.00 |
| 4" Turbo | 2,540.00 | 4,160.00 | 1,620.00 |
| 4" Compound | 3,215.00 | 5,315.00 | 2,100.00 |
| 6" Turbo | 4,815.00 | 7,235.00 | 2,420.00 |
| 6" Compound | 6,270.00 | 9,250.00 | 2,980.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| [1] Costs for boring under a highway or pavement are additional at actual cost | N/A | Cost | N/A |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 25.00 | $ 50.00 |
| Establishment of Service (After Hours) | 50.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 15.00 | 30.00 |
| Meter Test Fee (If Correct) | - | 50.00 |
| NSF Check | 10.00 | 30.00 |
| Late Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Global Water - Santa Cruz Water Company - Rebuttal Schedules** Schedule H-4

Test Year Ended December 31, 2008

Typical Bill Analysis

| Class of Service | Average Monthly Consumption | Present Rates | Proposed Rates | Proposed Increase Amount | Proposed Increase % |
|---|---|---|---|---|---|
| 5/8" Residential | 7,827 | $ 42.75 | $ 50.42 | $ 7.67 | 17.94% |
| 3/4" Residential | 6,474 | 39.23 | 38.14 | (1.09) | -2.78% |
| 1" Residential | 5,533 | 74.29 | 87.34 | 13.06 | 17.58% |
| 1.5" Residential | 2,100 | 127.86 | 167.97 | 40.11 | 31.37% |
| 2" Residential | 25,000 | 262.40 | 339.55 | 77.15 | 29.40% |
| 5/8" Commercial | 68,256 | 199.87 | 311.57 | 111.70 | 55.89% |
| 3/4" Commercial | 7,920 | 42.99 | 50.65 | 7.66 | 17.81% |
| 1" Commercial | 10,003 | 85.91 | 105.88 | 19.98 | 23.25% |
| 1.5" Commercial | 49,557 | 251.25 | 356.14 | 104.90 | 41.75% |
| 2" Commercial | 71,888 | 384.31 | 562.27 | 177.96 | 46.31% |
| 3" Commercial | 130,875 | 737.68 | 1,109.26 | 371.58 | 50.37% |
| 4" Commercial | 35,731 | 715.30 | 957.47 | 242.17 | 33.86% |
| 5/8" Irrigation | 7,750 | 42.55 | 50.23 | 7.68 | 18.04% |
| 3/4" Irrigation | 10,457 | 49.59 | 57.22 | 7.63 | 15.39% |
| 1" Irrigation | 10,267 | 86.59 | 106.68 | 20.08 | 23.19% |
| 1.5" Irrigation | 93,538 | 365.60 | 565.06 | 199.46 | 54.56% |
| 2" Irrigation | 139,209 | 559.34 | 882.04 | 322.70 | 57.69% |
| 4" Irrigation | 1,815,250 | 5,342.05 | 9,410.19 | 4,068.14 | 76.15% |
| 5/8" HOA | 2,826 | 29.75 | 35.14 | 5.39 | 18.12% |
| 3/4" HOA | 11,613 | 52.59 | 60.69 | 8.10 | 15.39% |
| 1" HOA | 46,236 | 180.11 | 256.99 | 76.88 | 42.69% |
| 1.5" HOA | 197,454 | 635.78 | 1,058.65 | 422.88 | 66.51% |
| 2" HOA | 338,683 | 1,077.98 | 1,829.54 | 751.57 | 69.72% |
| 3" HOA | 1,065,833 | 3,168.57 | 5,550.31 | 2,381.74 | 75.17% |
| 4" HOA | 1,523,421 | 4,583.29 | 8,024.00 | 3,440.71 | 75.07% |
| 2" Construction | 76,940 | 276.98 | 586.26 | 309.28 | 111.66% |
| 3" Construction | 22,731 | 81.83 | 597.84 | 516.01 | 630.58% |
| 4" Construction | 33,400 | 120.24 | 946.40 | 826.16 | 687.09% |
| 8" Construction | 569,944 | 2,051.80 | 5,996.24 | 3,944.44 | 192.24% |
| 2" Lake | 807,917 | 2,300.58 | 4,058.40 | 1,757.82 | 76.41% |
| Raw | 6,887,445 | 2,013.10 | 13,202.78 | 11,189.68 | 555.84% |

# Moe

# Rate Design Rebuttal Schedule

# WWC-TD

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | | | REBUTTAL | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Original Cost - As Filed | Fair Value - As Filed | | | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | | | $ 4,240,018 | $ 4,240,018 | | | $ 4,443,607 | $ 4,443,607 |
| 2 | | | | | | | | | |
| 3 | Adjusted Operating Income (Loss) | | | $ (601,943) | $ (601,943) | | | $ (591,229) | $ (591,229) |
| 4 | | | | | | | | | |
| 5 | Current Rate of Return (L3 / L1) | | | -14.20% | -14.20% | | | -13.31% | -13.31% |
| 6 | | | | | | | | | |
| 7 | Required Operating Income (L9 * L1) | | | $ 405,346 | $ 405,346 | | | $ 384,372 | $ 384,372 |
| 8 | | | | | | | | | |
| 9 | Required Rate of Return | | | 9.56% | 9.56% | | | 8.65% | 8.65% |
| 10 | | | | | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | | | $ 1,007,289 | $ 1,007,289 | | | $ 975,601 | $ 975,601 |
| 12 | | | | | | | | | |
| 13 | Gross Revenue Conversion Factor | | | 1.645086 | 1.645086 | | | 1.651965 | 1.651965 |
| 14 | | | | | | | | | |
| 15 | Increase in Gross Revenue Requirements | | | $ 1,657,077 | $ 1,657,077 | | | $ 1,611,660 | $ 1,611,660 |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | Customer | Present | Proposed | Dollar | Percent | Present | Proposed | Dollar | Percent |
| 19 | Classification | Rates | Rates | Increase | Increase | Rates | Rates | Increase | Increase |
| 20 | | | | | | | | | |
| 21 | Residential | $ 1,825,270 | $ 2,879,106 | $ 1,053,836 | 57.7% | $ 1,832,801 | $ 2,794,910 | $ 952,109 | 52.5% |
| 22 | Commercial | 202,514 | 327,582 | 125,068 | 61.8% | 194,370 | 298,571 | 104,201 | 53.6% |
| 23 | Irrigation | 635,427 | 993,443 | 358,017 | 56.3% | 635,427 | 969,172 | 333,746 | 52.5% |
| 24 | Construction | - | - | - | N/A | 143,654 | 232,930 | 89,277 | N/A |
| 25 | | | | | | | | | |
| 26 | Total of Water Revenues | $ 2,663,210 | $ 4,200,131 | $ 1,535,921 | 57.7% | $ 2,806,251 | $ 4,295,584 | $ 1,489,333 | 53.1% |
| 27 | | | | | | | | | |
| 28 | Miscellaneous Revenues | 234,483 | 352,293 | 117,810 | 50.2% | 234,483 | 352,293 | 117,810 | 50.2% |
| 29 | | | | | | | | | |
| 30 | Total Operating Revenues | $ 2,897,693 | $ 4,552,424 | $ 1,654,731 | 57.1% | $ 3,040,734 | $ 4,647,877 | $ 1,607,143 | 52.9% |
| 31 | | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |
| 34 | Supporting Schedules: | | | | | | | | |
| 35 | B-1 | | | | | | | | |
| 36 | C-1 | | | | | | | | |
| 37 | C-3 | | | | | | | | |
| 38 | H-1 | | | | | | | | |
| 39 | | | | | | | | | |
| 40 | | | | | | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Classification - Present and Proposed Rates

Schedule H-1

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | Residential | $ 1,832,801 | $ 2,794,910 | $ 962,109 | 52.5% |
| 3 | Commercial | 194,370 | 298,571 | 104,201 | 53.6% |
| 4 | Irrigation | 635,427 | 969,172 | 333,746 | 52.5% |
| 5 | Construction | 143,654 | 232,930 | 89,277 | N/A |
| 6 | | | | | |
| 7 | Total Water Revenues | $ 2,806,251 | $ 4,295,584 | $ 1,489,333 | 53.1% |
| 8 | | | | | |
| 9 | Miscellaneous Revenues (Sch. C-1, L4) | 234,483 | 352,293 | | |
| 10 | | | | | |
| 11 | Total Operating Revenues | $ 3,040,734 | $ 4,647,877 | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | Pro Forma Adjustments | (143,041) | | | |
| 16 | Subtotal (L11 + L15) | $ 2,897,693 | | | |
| 17 | | | | | |
| 18 | Total Gen. Ledger Operating Revenues | | | | |
| 19 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 2,894,421 | | | |
| 20 | Unreconciled Difference (L16 - L19) | 3,272 | | | |
| 21 | % | 0.11% | | | |
| 22 | | | | | |
| 23 | Target Revenue Requirement (Sch. C-1, L5) | | 4,649,122 | | |
| 24 | Difference (L11 - L23) | | (1,245) | | |
| 25 | % | | -0.03% | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |
| 34 | | | | | |
| 35 | | | | | |
| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

Valencia Water Company, Town Division - Rebuttal Schedules
Test Year Ended December 31, 2006
Analysis of Revenue by Detailed Class



| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] | [J] | [K] | [L] | [M] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Bill Count Water Revenues | | | | | | General Ledger Water Revenues | | | | |
| Line No. | Class of Service | Average Number of Customers | Average Consumption | Present Rates | Adjustments Sch. C-2.3 & Notes | Adjusted Present Rates [C + D] | Proposed Rates | Proposed Increase [F - E] | % | T.Y. Ended 12/31/2006 | Revenue Adjustments Sch. C-2.1 & C-2.3 | Adjusted G.L. Revenues [I + J] | Unreconciled Difference [E - K] | % |
| 1 | 5/8" Residential, TD | 4,661 | 5,817 | $ 1,657,328 | $ 19,447 | $ 1,676,776 | $ 2,543,028 | $ 866,253 | 51.66% | | | | | |
| 2 | 3/4" Residential, TD | 99 | 4,925 | 34,233 | - | 34,233 | 51,279 | 17,046 | 49.79% | | | | | |
| 3 | 1" Residential, TD | 75 | 7,715 | 53,549 | - | 53,549 | 94,262 | 40,712 | 76.03% | | | | | |
| 4 | 2" Residential, TD | 15 | 84,875 | 68,243 | - | 68,243 | 106,340 | 38,098 | 55.83% | | | | | |
| 5 | 5/8" Commercial, TD | 14 | 9,008 | 6,513 | - | 6,513 | 9,929 | 3,416 | 52.45% | | | | | |
| 6 | 3/4" Commercial, TD | 1 | 5,857 | 222 | - | 222 | - | (222) | 0.00% | | | | | |
| 7 | 1" Commercial, TD | 4 | 64,551 | 8,663 | - | 8,663 | 13,105 | 4,443 | 51.28% | | | | | |
| 8 | 1.5" Commercial, TD | 2 | 62,029 | 4,291 | - | 4,291 | 6,839 | 2,548 | 59.38% | | | | | |
| 9 | 2" Commercial, TD | 21 | 162,979 | 148,502 | 3,747 | 152,249 | 228,646 | 76,397 | 50.18% | | | | | |
| 10 | 3" Commercial, TD | 2 | 154,432 | 14,667 | - | 14,667 | 25,897 | 11,230 | 76.57% | | | | | |
| 11 | 4" Commercial, TD | 1 | 1,333 | 4,223 | - | 4,223 | 5,308 | 1,085 | 0.00% | | | | | |
| 12 | 6" Commercial, TD | 1 | 3,000 | 3,543 | - | 3,543 | 8,849 | 5,306 | 149.76% | | | | | |
| 13 | 5/8" Irrigation, TD | 6 | 70,022 | 14,715 | - | 14,715 | 20,772 | 6,057 | 41.16% | | | | | |
| 14 | 1" Irrigation, TD | 2 | 93,583 | 7,324 | - | 7,324 | 10,923 | 3,599 | 49.15% | | | | | |
| 15 | 1.5" Irrigation, TD | 6 | 126,886 | 28,901 | - | 28,901 | 44,794 | 15,893 | 54.99% | | | | | |
| 16 | 2" Irrigation, TD | 28 | 168,826 | 204,049 | - | 204,049 | 312,952 | 108,903 | 53.37% | | | | | |
| 17 | 6" Irrigation, TD | 1 | 2,786 | 4,956 | - | 4,956 | 12,411 | 7,455 | 150.43% | | | | | |
| 18 | 5/8" HOA, TD | 11 | 151,019 | 57,839 | - | 57,839 | 82,848 | 25,009 | 43.24% | | | | | |
| 19 | 1" HOA, TD | 20 | 47,345 | 40,114 | - | 40,114 | 61,944 | 21,830 | 54.42% | | | | | |
| 20 | 1.5" HOA, TD | 5 | 141,264 | 25,388 | - | 25,388 | 39,068 | 13,680 | 53.88% | | | | | |
| 21 | 2" HOA, TD | 29 | 195,393 | 240,004 | - | 240,004 | 364,660 | 124,656 | 51.94% | | | | | |
| 22 | 3" HOA, TD | 1 | 770,100 | 12,137 | - | 12,137 | 18,802 | 6,664 | 54.91% | | | | | |
| 23 | 2" Construction, TD | 15 | 184,112 | 119,538 | - | 119,538 | 183,313 | 63,776 | N/A | | | | | |
| 24 | 3" Construction, TD | 2 | 99,500 | 8,153 | - | 8,153 | 15,405 | 7,252 | N/A | | | | | |
| 25 | 4" Construction, TD | 1 | 33,050 | 7,945 | - | 7,945 | 10,009 | 2,064 | N/A | | | | | |
| 26 | 8" Construction, TD | 1 | 315,900 | 8,017 | - | 8,017 | 24,203 | 16,186 | N/A | | | | | |
| 27 | Totals | 5,024 | 10,247 | $ 2,783,057 | 23,194 | $ 2,806,251 | $ 4,295,584 | $ 1,489,333 | 53.07% | | | | | |
| 28 | | | | | | | | | | | | | | |
| 29 | Total Residential | 4,850 | 6,067 | 1,813,354 | 19,447 | 1,832,801 | 2,794,910 | 962,109 | 52.49% | $ 1,837,781 | $ 7,531 | $ 1,845,312 | $ (12,511) | -0.68% |
| 30 | Total Commercial | 46 | 94,972 | 190,623 | 3,747 | 194,370 | 298,571 | 104,201 | 53.61% | 198,854 | (8,144) | 190,710 | 3,660 | 1.92% |
| 31 | Total Irrigation | 109 | 142,910 | 635,427 | - | 635,427 | 969,172 | 333,746 | 52.52% | 632,489 | - | 632,489 | 2,938 | 0.46% |
| 32 | Total Construction | 18 | 173,580 | 143,654 | - | 143,654 | 232,930 | 89,277 | N/A | 135,924 | 143,654 | 279,578 | (135,924) | -48.62% |
| 33 | Totals | 5,024 | 10,247 | 2,783,057 | 23,194 | 2,806,251 | 4,295,584 | 1,489,333 | 53.07% | $ 2,805,047 | $ 143,041 | $ 2,948,088 | (141,837) | -4.81% |
| 34 | | | | | | | | | | | | | | |
| 35 | Miscellaneous Revenue (Sch. C-1) | | | 234,483 | - | 234,483 | 352,293 | 117,810 | 50.24% | | | | | |
| 36 | Total Revenue Generated | | | | | | $ 4,647,877 | | | | | | | |
| 37 | Target Revenue Requirement (Sch. C-1) | | | | | | 4,649,122 | | | | | | | |
| 38 | Over/(Short) | | | | | | $ (1,245) | | | | | | | |
| 39 | | | | | | | | | | | | | | |

40 * Adjustment for Credits not accounted for in Bill Count - $(887) applied to 5/8" Res TD, Col. D
41 Adjustment for Jan - March Billing. Usage billed was rounded down to nearest 1,000, understates bill count - $37,466 Col. D
42 Adjustments for Pro-Rated Bills not Accounted for in Bill Count applied in Col. D for reconciliation, no revenue impact
43 Average Pro-Rated Bill Period - 13 Days (Remove 17 Days)

| | Pro-Rated Bills | Avg. Pro-Rated Min. | Adjustment |
|---|---|---|---|
| Residential | 1,817 | 7 | (13,385) |
| Commercial | - | - | - |

Reconciliation from Bill Count Present Revenues to General Ledger - same as above, but demonstrates unadjusted reconciliation including pro-rated bills for residential and commercial. Other classes left as demonstrated above.

| | Residential | Commercial |
|---|---|---|
| Bill Count - Present Rates | $ 1,813,354 | $ 190,623 |
| Accl. Adjustments - Sch. C2, p2. | - | - |
| Billing Change/Credits | 32,832 | 3,747 |
| Pro-Rated Bill Adjustment | (13,385) | - |
| | $ 1,832,801 | $ 194,370 |
| General Ledger | $ 1,837,781 | $ 198,854 |
| Unreconciled Difference | $ (4,980) | $ (4,484) |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Establishment | $ 30.00 | $ 50.00 | $ 20.00 | 2,531 | $ 50,620 |
| 3 | After Hours | 45.00 | 100.00 | 55.00 | 14 | 770.00 |
| 4 | Reconnect | 30.00 | 75.00 | 45.00 | 1,407 | 63,315 |
| 5 | NSF Fees | 15.00 | 30.00 | 15.00 | 207 | 3,105 |
| 6 | | | | | | |
| 7 | Proposed Misc. Service Charge Increase | | | | | $ 117,810 |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
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| 40 | | | | | | |

**Valencia Water Company, Town Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

Schedule H-3

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Basic Service Charge Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 13.00 | $ 35.35 | $ 22.35 |
| 3/4" Meter | 15.00 | 35.35 | 20.35 |
| 1" Meter | 37.50 | 88.38 | 50.88 |
| 1.5" Meter | 75.00 | 176.75 | 101.75 |
| 2" Meter | 145.00 | 282.80 | 137.80 |
| 3" Meter | 225.00 | 565.60 | 340.60 |
| 4" Meter | 700.00 | 883.75 | 183.75 |
| 6" Meter | 700.00 | 1,767.50 | 1,067.50 |
| 8" Meter | N/A | 3,535.00 | N/A |
| Fire Sprinkler Service | * | N/A | N/A |

* 1% of Monthly Minimum for a Comparable Sized Meter Connection, but no less than $5.00 per month.

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge (per 1,000 gallons) Proposed | Change |
|---|---|---|---|---|---|
| Tier One Breakover | 999,999,999 | 1 | $ 2.86 | $ 1.00 | varies |
| Tier Two Breakover | N/A | 5 | N/A | 2.10 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.30 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 2.75 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.20 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.20 | varies |
| Conservation Rebate Threshold ("CBT") | N/A | 6,701 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT: | N/A | 59% | | | |

| Service Line & Meter Installation Charges [1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 360.00 | $ 600.00 | $ 240.00 |
| 3/4" Meter | 360.00 | 700.00 | 340.00 |
| 1" Meter | 400.00 | 810.00 | 410.00 |
| 1.5" Meter | 630.00 | 1,075.00 | 445.00 |
| 2" Turbo | 880.00 | 1,875.00 | 995.00 |
| 2" Compound | 880.00 | 2,720.00 | 1,840.00 |
| 3" Turbo | 1,040.00 | 2,715.00 | 1,675.00 |
| 3" Compound | 1,040.00 | 3,710.00 | 2,670.00 |
| 4" Turbo | 2,890.00 | 4,160.00 | 1,270.00 |
| 4" Compound | 2,890.00 | 5,315.00 | 2,425.00 |
| 6" Turbo | 4,020.00 | 7,235.00 | 3,215.00 |
| 6" Compound | 4,020.00 | 9,250.00 | 5,230.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| Plus actual road crossing charges | Cost | N/A | N/A |
| [1] Costs for boring *under a highway or pavement* are additional at actual cost | N/A | Cost | N/A |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 30.00 | $ 50.00 |
| Establishment of Service - After Hours | 45.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 25.00 | 30.00 |
| Meter Test Fee (If Correct) | 35.00 | 50.00 |
| NSF Check | 15.00 | 30.00 |
| Late Payment Charge (Per Month) | Greater of 1.5% or $5.00 | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | Greater of 1.5% or $3.50 | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Valencia Water Company, Town Division - Rebuttal Schedules** Schedule H-4

Test Year Ended December 31, 2008

Typical Bill Analysis

| Description | Average Monthly Consumption | Present Rates | Proposed Rates | Proposed Increase Amount | Proposed Increase % |
|---|---|---|---|---|---|
| 5/8" Residential, TD | 5,817 | $ 29.64 | $ 39.97 | $ 10.34 | 34.88% |
| 3/4" Residential, TD | 4,925 | 29.08 | 39.14 | 10.05 | 34.57% |
| 1" Residential, TD | 7,715 | 59.57 | 104.02 | 44.45 | 74.63% |
| 2" Residential, TD | 84,875 | 387.74 | 599.58 | 211.83 | 54.63% |
| 5/8" Commercial, TD | 9,009 | 38.77 | 53.97 | 15.21 | 39.22% |
| 3/4" Commercial, TD | 5,857 | 31.75 | 40.01 | 8.26 | 26.02% |
| 1" Commercial, TD | 64,551 | 222.12 | 319.79 | 97.67 | 43.97% |
| 1.5" Commercial, TD | 62,029 | 252.40 | 397.57 | 145.17 | 57.51% |
| 2" Commercial, TD | 162,979 | 611.12 | 927.61 | 316.49 | 51.79% |
| 3" Commercial, TD | 154,432 | 666.68 | 1,174.51 | 507.84 | 76.17% |
| 4" Commercial, TD | 1,333 | 703.81 | 884.45 | 180.63 | 25.66% |
| 6" Commercial, TD | 3,000 | 708.58 | 1,769.63 | 1,061.05 | 149.74% |
| 5/8" Irrigation, TD | 70,022 | 213.26 | 289.74 | 76.48 | 35.86% |
| 1" Irrigation, TD | 93,583 | 305.15 | 441.73 | 136.58 | 44.76% |
| 1.5" Irrigation, TD | 126,886 | 437.90 | 669.97 | 232.08 | 53.00% |
| 2" Irrigation, TD | 168,826 | 627.84 | 952.17 | 324.33 | 51.66% |
| 6" Irrigation, TD | 2,786 | 707.97 | 1,769.45 | 1,061.48 | 149.93% |
| 5/8" HOA, TD | 151,019 | 444.92 | 629.93 | 185.02 | 41.58% |
| 1" HOA, TD | 47,345 | 172.91 | 247.52 | 74.62 | 43.15% |
| 1.5" HOA, TD | 141,264 | 479.02 | 730.36 | 251.34 | 52.47% |
| 2" HOA, TD | 195,393 | 703.82 | 1,063.75 | 359.93 | 51.14% |
| 3" HOA, TD | 770,100 | 2,427.49 | 3,760.32 | 1,332.83 | 54.91% |
| 2" Construction, TD | 184,112 | 671.56 | 1,016.37 | 344.81 | 51.34% |
| 3" Construction, TD | 99,500 | 509.57 | 943.80 | 434.23 | 85.21% |
| 4" Construction, TD | 33,050 | 794.52 | 982.86 | 188.34 | 23.70% |
| 8" Construction, TD | 315,900 | 1,603.47 | 4,822.08 | 3,218.61 | 200.73% |

# Moe

# Rebuttal Schedule

# WWC-GBD

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | REBUTTAL | |
|---|---|---|---|---|---|
| | | Original Cost - As Filed | Fair Value - As Filed | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | $ 929,057 | $ 929,057 | $ 895,377 | $ 895,377 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (4,404) | $ (4,404) | $ 11,614 | $ 11,614 |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -0.47% | -0.47% | 1.30% | 1.30% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 90,304 | $ 90,304 | $ 77,450 | $ 77,450 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.72% | 9.72% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 94,708 | $ 94,708 | $ 65,836 | $ 65,836 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.646464 | 1.646464 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 155,803 | $ 155,803 | $ 108,396 | $ 108,396 |
| 16 | | | | | |
| 17 | | | | | |

| Line No. | Customer Classification | AS FILED Present Rates | AS FILED Proposed Rates | AS FILED Dollar Increase | AS FILED Percent Increase | REBUTTAL Present Rates | REBUTTAL Proposed Rates | REBUTTAL Dollar Increase | REBUTTAL Percent Increase |
|---|---|---|---|---|---|---|---|---|---|
| 21 | Residential | $ 322,137 | $ 466,416 | $ 144,279 | 44.8% | $ 336,334 | $ 418,242 | $ 81,908 | 24.4% |
| 22 | Commercial | 528 | 821 | 293 | 55.4% | 528 | 709 | 181 | 34.3% |
| 23 | Irrigation | 696 | 1,243 | 547 | 78.6% | 696 | 1,097 | 402 | 57.7% |
| 24 | Construction | - | - | - | N/A | 29,459 | 45,226 | 15,768 | N/A |
| 25 | | | | | | | | | |
| 26 | Total of Water Revenues | $ 323,361 | $ 468,479 | $ 145,118 | 44.8% | $ 367,016 | $ 465,275 | $ 98,258 | 26.8% |
| 27 | | | | | | | | | |
| 28 | Miscellaneous Revenues | 14,039 | 24,189 | 10,150 | 72.3% | 14,039 | 24,189 | 10,150 | 72.3% |
| 29 | | | | | | | | | |
| 30 | Total Operating Revenues | $ 337,400 | $ 492,668 | $ 155,268 | 46.0% | $ 381,055 | $ 489,464 | $ 108,408 | 28.4% |
| 31 | | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |

34 Supporting Schedules:
35 B-1
36 C-1
37 C-3
38 H-1
39
40

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**

Schedule H-1

Test Year Ended December 31, 2008

Classification - Present and Proposed Rates

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | Residential | $ 336,334 | $ 418,242 | $ 81,908 | 24.4% |
| 3 | Commercial | 528 | 709 | 181 | 34.3% |
| 4 | Irrigation | 696 | 1,097 | 402 | 57.7% |
| 5 | Construction | 29,459 | 45,226 | 15,768 | N/A |
| 6 | | | | | |
| 7 | Total Water Revenues | $ 367,016 | $ 465,275 | $ 98,258 | 26.8% |
| 8 | | | | | |
| 9 | Miscellaneous Revenues (Sch. C-1, L4) | 14,039 | 24,189 | | |
| 10 | | | | | |
| 11 | Total Operating Revenues | $ 381,055 | $ 489,464 | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | Pro Forma Adjustments | (43,655) | | | |
| 16 | Subtotal (L11 + L15) | $ 337,400 | | | |
| 17 | | | | | |
| 18 | Total Gen. Ledger Operating Revenues | | | | |
| 19 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 336,819 | | | |
| 20 | Unreconciled Difference (L16 - L19) | 581 | | | |
| 21 | % | 0.17% | | | |
| 22 | | | | | |
| 23 | Target Revenue Requirement (Sch. C-1, L5) | | 488,871 | | |
| 24 | Difference (L11 - L23) | | 593 | | |
| 25 | % | | 0.12% | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |
| 34 | | | | | |
| 35 | | | | | |
| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Analysis of Revenue by Detailed Class

| Line No. | Class of Service | [A] Average Number of Customers | [B] Average Consumption | [C] Bill Count Water Revenues: Present Rates | [D] Adjustments Sch. C-2.3 & Notes | [E] Adjusted Present Rates [C + D] | [F] Proposed Rates | [G] Proposed Increase [F - E] | [H] % | [I] General Ledger Water Revenues: T.Y. Ended 12/31/2008 | [J] Revenue Adjustments Sch. C-2.1 & C-2.3 | [K] Adjusted G.L. Revenues [I + J] | [L] Unreconciled Difference [E - K] | [M] % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5/8" Residential, GBD | 504 | 9,068 | $ 260,817 | $ (1,092) | $ 259,725 | $ 313,943 | $ 54,218 | 20.86% | | | | | |
| 2 | 3/4" Residential, GBD | 58 | 10,239 | 32,751 | - | 32,751 | 38,690 | 5,939 | 18.14% | | | | | |
| 3 | 1" Residential, GBD | 53 | 9,740 | 43,859 | - | 43,859 | 65,610 | 21,751 | 49.59% | | | | | |
| 4 | 5/8" Commercial, GBD | 2 | 7,267 | 553 | (25) | 528 | 709 | 181 | 34.26% | | | | | |
| 5 | 1" HOA, GBD | 1 | 6,417 | 696 | - | 696 | 1,097 | 402 | 57.72% | | | | | |
| 6 | 2" Construction, GBD | 2 | 659,600 | 29,459 | - | 29,459 | 45,226 | 15,768 | N/A | | | | | |
| 7 | Totals | 620 | 10,543 | $ 368,133 | (1,116) | $ 367,016 | $ 465,275 | $ 98,258 | 26.77% | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | Total Residential | 615 | 9,236 | $ 337,426 | $ (1,092) | $ 336,334 | $ 418,242 | $ 81,908 | 24.35% | $ 337,975 | $ 14,197 | $ 352,172 | $ (15,838) | -4.50% |
| 10 | Total Commercial | 2 | 7,267 | 553 | (25) | 528 | 709 | 181 | 34.26% | 497 | - | 497 | 31 | 6.28% |
| 11 | Total Irrigation | 1 | 6,417 | 696 | - | 696 | 1,097 | 402 | 57.72% | 670 | - | 670 | 26 | 3.84% |
| 12 | Total Construction | 2 | 659,600 | 29,459 | - | 29,459 | 45,226 | 15,768 | N/A | 25,972 | 29,459 | 55,431 | (25,972) | -46.86% |
| 13 | Totals | 620 | 10,543 | 368,133 | (1,116) | 367,016 | 465,275 | 98,258 | 26.77% | $ 365,114 | $ 43,655 | $ 408,769 | (41,753) | -10.21% |
| 14 | | | | | | | | | | | | | | |
| 15 | Miscellaneous Revenue (Sch. C-1) | | | 14,039 | - | 14,039 | 24,189 | 10,150 | 72.30% | | | | | |
| 16 | Total Revenue Generated | | | | | | $ 489,464 | | | | | | | |
| 17 | Target Revenue Requirement (Sch. C-1) | | | | | | 488,871 | | | | | | | |
| 18 | Over/(Short) | | | | | | $ 593 | | | | | | | |

* Adjustments for Pro-Rated Bills not Accounted for in Bill Count applied in Col. D for reconciliation, no revenue impact

Average Pro-Rated Bill Period - 13 Days (Remove 17 Days)

| | Pro-Rated Bills | Avg. Pro-Rated Min. | Adjustment |
|---|---|---|---|
| Residential | 89 | 12.27 | (1,092) |
| Commercial | 2 | 12.27 | (25) |

Reconciliation from Bill Count Present Revenues to General Ledger - same as above, but demonstrates unadjusted reconciliation including pro-rated bills for residential and commercial. Other classes left as demonstrated above.

| | Residential | Commercial |
|---|---|---|
| Bill Count - Present Rates | $ 337,426 | $ 553 |
| Acct. Adjustments - Sch. C2, p2 | - | - |
| Pro-Rated Bill Adjustment | (1,092) | (25) |
| | $ 336,334 | $ 528 |
| General Ledger | $ 337,975 | $ 497 |
| Unreconciled Difference | $ (1,641) | $ 31 |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Establishment | $ 30.00 | $ 50.00 | $ 20.00 | 116 | $ 2,320 |
| 3 | After Hours | 40.00 | 100.00 | 60.00 | - | - |
| 4 | Reconnect | 30.00 | 75.00 | 45.00 | 165 | 7,425 |
| 5 | NSF Fees | 15.00 | 30.00 | 15.00 | 27 | 405 |
| 6 | | | | | | |
| 7 | Proposed Misc. Service Charge Increase | | | | | $ 10,150 |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
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| 34 | | | | | | |
| 35 | | | | | | |
| 36 | | | | | | |
| 37 | | | | | | |
| 38 | | | | | | |
| 39 | | | | | | |
| 40 | | | | | | |

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules**
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

Schedule H-3

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Basic Service Charge Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 16.00 | $ 33.25 | $ 17.25 |
| 3/4" Meter | 16.00 | 33.25 | 17.25 |
| 1" Meter | 40.00 | 83.13 | 43.13 |
| 1.5" Meter | 80.00 | 166.25 | 86.25 |
| 2" Meter | 128.00 | 266.00 | 138.00 |
| 3" Meter | 240.00 | 532.00 | 292.00 |
| 4" Meter | 400.00 | 831.25 | 431.25 |
| 6" Meter | 820.00 | 1,662.50 | 842.50 |
| 8" Meter | N/A | 3,325.00 | N/A |
| Construction/Standpipe | 150.00 | Same as Above | N/A |

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge (per 1,000 gallons) Proposed | Change |
|---|---|---|---|---|---|
| Tier One Breakover | 12 | 1 | $ 2.75 | $ 1.00 | varies |
| Tier Two Breakover | 999,999,999 | 5 | 3.75 | 2.00 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.30 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 2.75 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.20 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.20 | varies |
| Conservation Rebate Threshold ("CBT") | N/A | 9,001 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT: | N/A | 45% | | | |

| Service Line & Meter Installation Charges [1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 485.00 | $ 600.00 | $ 115.00 |
| 3/4" Meter | 485.00 | 700.00 | 215.00 |
| 1" Meter | 570.00 | 810.00 | 240.00 |
| 1.5" Meter | 740.00 | 1,075.00 | 335.00 |
| 2" Turbo | 1,235.00 | 1,875.00 | 640.00 |
| 2" Compound | 1,235.00 | 2,720.00 | 1,485.00 |
| 3" Turbo | 2,340.00 | 2,715.00 | 375.00 |
| 3" Compound | 2,340.00 | 3,710.00 | 1,370.00 |
| 4" Turbo | 2,700.00 | 4,160.00 | 1,460.00 |
| 4" Compound | 2,700.00 | 5,315.00 | 2,615.00 |
| 6" Turbo | 5,035.00 | 7,235.00 | 2,200.00 |
| 6" Compound | 5,035.00 | 9,250.00 | 4,215.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| [1] Costs for boring under a highway or pavement are additional at actual cost | Cost | Cost | - |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 30.00 | $ 50.00 |
| Establishment of Service (After Hours) | 40.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 20.00 | 30.00 |
| Meter Test Fee (If Correct) | 30.00 | 50.00 |
| NSF Check | 15.00 | 30.00 |
| Late Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Valencia Water Company, Greater Buckeye Division - Rebuttal Schedules** Schedule H-4

Test Year Ended December 31, 2008

Typical Bill Analysis

| Description | Average Monthly Consumption | Present Rates | Proposed Rates | Proposed Increase Amount | Proposed Increase % |
|---|---|---|---|---|---|
| 5/8" Residential, GBD | 9,068 | 40.94 | 51.61 | 10.67 | 26.06% |
| 3/4" Residential, GBD | 10,239 | 44.16 | 54.41 | 10.25 | 23.21% |
| 1" Residential, GBD | 9,740 | 66.79 | 103.03 | 36.24 | 54.27% |
| 5/8" Commercial, GBD | 7,267 | 35.98 | 41.07 | 5.08 | 14.13% |
| 1" HOA, GBD | 6,417 | 57.65 | 89.87 | 32.22 | 55.90% |
| 2" Construction, GBD | 659,600 | 2,611.50 | 2,996.22 | 384.72 | 14.73% |

Moe

Rebuttal Schedule

WUGT

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | | | REBUTTAL | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Original Cost - As Filed | Fair Value - As Filed | | | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | | | $ 2,598,259 | $ 2,598,259 | | | $ 2,563,849 | $ 2,563,849 |
| 2 | | | | | | | | | |
| 3 | Adjusted Operating Income (Loss) | | | $ (153,371) | $ (153,371) | | | $ (157,401) | $ (157,401) |
| 4 | | | | | | | | | |
| 5 | Current Rate of Return (L3 / L1) | | | -5.90% | -5.90% | | | -6.14% | -6.14% |
| 6 | | | | | | | | | |
| 7 | Required Operating Income (L9 * L1) | | | $ 258,267 | $ 258,267 | | | $ 221,773 | $ 221,773 |
| 8 | | | | | | | | | |
| 9 | Required Rate of Return | | | 9.94% | 9.94% | | | 8.65% | 8.65% |
| 10 | | | | | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | | | $ 411,638 | $ 411,638 | | | $ 379,174 | $ 379,174 |
| 12 | | | | | | | | | |
| 13 | Gross Revenue Conversion Factor | | | 1.645086 | 1.645086 | | | 1.644176 | 1.644176 |
| 14 | | | | | | | | | |
| 15 | Increase in Gross Revenue Requirements | | | $ 677,179 | $ 677,179 | | | $ 623,429 | $ 623,429 |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | Customer | Present | Proposed | Dollar | Percent | Present | Proposed | Dollar | Percent |
| 19 | Classification | Rates | Rates | Increase | Increase | Rates | Rates | Increase | Increase |
| 20 | | | | | | | | | |
| 21 | Residential | $ 189,834 | $ 620,340 | $ 430,506 | 226.8% | $ 188,834 | $ 566,280 | $ 378,445 | 198.4% |
| 22 | Commercial | 15,171 | 60,996 | 45,825 | 302.1% | 15,171 | 60,089 | 44,919 | 296.1% |
| 23 | Irrigation | 45,056 | 240,273 | 195,218 | 433.3% | 45,056 | 238,673 | 193,617 | 429.7% |
| 24 | Construction | - | - | - | N/A | - | - | - | N/A |
| 25 | | | | | | | | | |
| 26 | Total of Water Revenues | $ 250,061 | $ 921,608 | $ 671,548 | 268.6% | $ 250,061 | $ 867,042 | $ 616,981 | 246.7% |
| 27 | | | | | | | | | |
| 28 | Miscellaneous Revenues | 9,103 | 14,978 | 5,875 | 64.5% | 9,103 | 14,978 | 5,875 | 64.5% |
| 29 | | | | | | | | | |
| 30 | Total Operating Revenues | $ 259,164 | $ 936,587 | $ 677,423 | 261.4% | $ 259,164 | $ 882,020 | $ 622,856 | 240.3% |
| 31 | | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |
| 34 | Supporting Schedules: | | | | | | | | |
| 35 | B-1 | | | | | | | | |
| 36 | C-1 | | | | | | | | |
| 37 | C-3 | | | | | | | | |
| 38 | H-1 | | | | | | | | |
| 39 | | | | | | | | | |
| 40 | | | | | | | | | |

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Classification - Present and Proposed Rates

Schedule H-1

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | Residential | $ 189,834 | $ 568,280 | $ 378,445 | 199.4% |
| 3 | Commercial | 15,171 | 60,089 | 44,919 | 296.1% |
| 4 | Irrigation | 45,056 | 238,673 | 193,617 | 429.7% |
| 5 | Construction | - | - | - | N/A |
| 6 | | | | | |
| 7 | Total Water Revenues | $ 250,061 | $ 867,042 | $ 616,981 | 246.7% |
| 8 | | | | | |
| 9 | Miscellaneous Revenues (Sch. C-1, L4) | 9,103 | 14,978 | | |
| 10 | | | | | |
| 11 | Total Operating Revenues | $ 259,164 | $ 882,020 | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | Pro Forma Adjustments | - | | | |
| 16 | Subtotal (L11 + L15) | $ 259,164 | | | |
| 17 | | | | | |
| 18 | Total Gen. Ledger Operating Revenues | | | | |
| 19 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 259,304 | | | |
| 20 | Unreconciled Difference (L16 - L19) | (140) | | | |
| 21 | % | -0.05% | | | |
| 22 | | | | | |
| 23 | Target Revenue Requirement (Sch. C-1, L5) | | 882,733 | | |
| 24 | Difference (L11 - L23) | | (713) | | |
| 25 | % | | -0.08% | | |
| 26 | | | | | |
| 27 | | | | | |
| 28 | | | | | |
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Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules
Test Year Ended December 31, 2008
Analysis of Revenue by Detailed Class



| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] | [J] | [K] | [L] | [M] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Bill Count Water Revenues | | | | | | General Ledger Water Revenues | | | | |
| Line No. | Class of Service | Average Number of Customers | Average Consumption | Present Rates | Adjustments | Adjusted Present Rates [C + D] | Proposed Rates | Proposed Increase [F - E] | % | T.Y. Ended 12/31/2008 | Revenue Adjustments | Adjusted G.L. Revenues [I + J] | Unreconciled Difference [E - K] | % |
| 1 | 5/8" Residential | 316 | 7,346 | $ 177,618 | $ - | $ 177,618 | $ 526,761 | $ 349,144 | 196.57% | | | | | |
| 2 | 3/4" Residential | 4 | 8,000 | 2,451 | - | 2,451 | 6,442 | 3,990 | 162.79% | | | | | |
| 3 | 1" Residential | 11 | 6,898 | 9,148 | - | 9,148 | 32,739 | 23,591 | 257.89% | | | | | |
| 4 | 1.5" Residential | 1 | 14,778 | 618 | - | 618 | 2,338 | 1,721 | N/A | | | | | |
| 5 | 5/8" Commercial | 3 | 7,852 | 1,270 | - | 1,270 | 3,739 | 2,469 | 194.41% | | | | | |
| 6 | 1" Commercial | 1 | 14,888 | 989 | - | 989 | 3,130 | 2,141 | 216.51% | | | | | |
| 7 | 1.5" Commercial | 2 | 14,778 | 2,112 | - | 2,112 | 8,220 | 6,108 | 289.26% | | | | | |
| 8 | 6" Commercial | 1 | - | 10,800 | - | 10,800 | 45,000 | 34,200 | 316.67% | | | | | |
| 9 | 2" Irrigation | 2 | 298,292 | 40,785 | - | 40,785 | 221,161 | 180,376 | 442.26% | | | | | |
| 10 | 3" Irrigation | 1 | 18,583 | 4,270 | - | 4,270 | 17,512 | 13,241 | 310.07% | | | | | |
| 11 | 2" Construction | 4 | 41,386 | - | - | - | - | - | N/A | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | Totals | 346 | 9,479 | $ 250,061 | - | $ 250,061 | $ 867,042 | $ 616,981 | 246.73% | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | Total Residential | 332 | 7,353 | $ 189,834 | $ - | $ 189,834 | $ 568,280 | $ 378,445 | 199.36% | $ 197,888 | $ - | $ 197,888 | $ (8,054) | -4.07% |
| 16 | Total Commercial | 7 | 9,273 | 15,171 | - | 15,171 | 60,089 | 44,918 | 296.08% | 16,691 | - | 16,691 | (1,520) | -9.11% |
| 17 | Total Irrigation | 3 | 205,056 | 45,056 | - | 45,056 | 238,673 | 193,617 | 429.73% | 40,217 | - | 40,217 | 4,838 | 12.03% |
| 18 | Total Construction | 4 | 41,386 | - | - | - | - | - | N/A | 16,955 | - | 16,955 | (16,955) | -100.00% |
| 19 | Totals | 346 | 9,479 | 250,061 | - | 250,061 | 867,042 | 616,981 | 246.73% | $ 271,752 | $ - | $ 271,752 | (21,691) | -7.98% |
| 20 | | | | | | | | | | | | | | |
| 21 | Miscellaneous Revenue (Sch. C-1) | | | 9,103 | - | 9,103 | 14,978 | 5,875 | 64.54% | | | | | |
| 22 | Total Revenue Generated | | | | | | $ 882,020 | | | | | | | |
| 23 | Target Revenue Requirement (Sch. C-1) | | | | | | 882,733 | | | | | | | |
| 24 | Over/(Short) | | | | | | $ (713) | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | |

27 * Adjustment for Pro-Rated Bills not Accounted for in Bill Count - $(580) applied to 5/8" Res. Col. O

28

29 * Adjustments for Pro-Rated Bills not Accounted for in Bill Count applied in Col. D for reconciliation, no revenue impact

30 Average Pro-Rated Bill Period - 13 Days (Remove 17 Days)

| | Pro-Rated Bills | Avg. Pro-Rated Min. | Adjustment |
|---|---|---|---|
| Residential | 58 | 9.92 | (575) |
| Commercial | - | - | - |

Reconciliation from Bill Count Present Revenues to General Ledger - same as above, but demonstrates unadjusted reconciliation including pro-rated bills for residential and commercial. Other classes left as demonstrated above.

| | Residential | Commercial |
|---|---|---|
| Bill Count - Present Rates | $ 189,834 | $ 15,171 |
| Acct. Adjustments - Sch. C2, p2. | - | - |
| Pro-Rated Bill Adjustment | (575) | - |
| | $ 189,259 | $ 15,171 |
| General Ledger | $ 197,888 | $ 16,691 |
| Unreconciled Difference | $ (8,629) | $ (1,520) |

**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Establishment | $ 30.00 | $ 50.00 | $ 20.00 | 58 | $ 1,160 |
| 3 | After Hours | 45.00 | 100.00 | 55.00 | - | - |
| 4 | Reconnect | 30.00 | 75.00 | 45.00 | 99 | 4,455 |
| 5 | Meter Test | 30.00 | 50.00 | 20.00 | 1 | 20 |
| 6 | NSF Fees | 15.00 | 30.00 | 15.00 | 16 | 240 |
| 7 | | | | | | |
| 8 | Proposed Misc. Service Charge Increase | | | | | $ 5,875 |
| 9 | | | | | | |
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**Water Utility of Greater Tonopah, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

Schedule H-3

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Basic Service Charge Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 17.50 | $ 75.00 | $ 57.50 |
| 3/4" Meter | 17.50 | 75.00 | 57.50 |
| 1" Meter | 45.00 | 187.50 | 142.50 |
| 1.5" Meter | 85.00 | 375.00 | 290.00 |
| 2" Meter | 145.00 | 600.00 | 455.00 |
| 3" Meter | 270.00 | 1,200.00 | 930.00 |
| 4" Meter | 450.00 | 1,875.00 | 1,425.00 |
| 6" Meter | 900.00 | 3,750.00 | 2,850.00 |
| 8" Meter | N/A | 7,500.00 | N/A |

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge Proposed | Change |
|---|---|---|---|---|---|
| Tier One Breakover | 12 | 1 | $ 4.10 | $ 1.00 | varies |
| Tier Two Breakover | 999,999,999 | 5 | 5.25 | 4.00 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 12.00 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 16.00 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 23.50 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 29.94 | varies |
| **Construction/Standpipe (in 1,000's of Gallons** | | | | | |
| Tier One Breakover | 999,999,999 | 1 | $ 4.10 | $ 1.00 | varies |
| Tier Two Breakover | N/A | 5 | N/A | 4.00 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 12.00 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 16.00 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 23.50 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 29.94 | varies |
| **All Meter Sizes and Classes** | | | | | |
| Conservation Rebate Threshold ("CBT") | N/A | 7,401 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT | N/A | 45% | | | |

| Service Line & Meter Installation Charges[1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 485.00 | $ 600.00 | $ 115.00 |
| 3/4" Meter | 485.00 | 700.00 | 215.00 |
| 1" Meter | 570.00 | 810.00 | 240.00 |
| 1.5" Meter | 775.00 | 1,075.00 | 300.00 |
| 2" Turbo | 1,900.00 | 1,875.00 | (25.00) |
| 2" Compound | 1,900.00 | 2,720.00 | 820.00 |
| 3" Turbo | 2,490.00 | 2,715.00 | 225.00 |
| 3" Compound | 2,490.00 | 3,710.00 | 1,220.00 |
| 4" Turbo | 3,615.00 | 4,160.00 | 545.00 |
| 4" Compound | 3,615.00 | 5,315.00 | 1,700.00 |
| 6" Turbo | 6,810.00 | 7,235.00 | 425.00 |
| 6" Compound | 6,810.00 | 9,250.00 | 2,440.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| [1] Costs for boring under highway or pavement are additional at cost | Cost | Cost | - |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 25.00 | $ 50.00 |
| Establishment of Service (After Hours) | 50.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 15.00 | 30.00 |
| Meter Test Fee (If Correct) | - | 50.00 |
| NSF Check | 10.00 | 30.00 |
| Late Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Water Utility of Greater Tonopah**
Test Year Ended December 31, 2008
Typical Bill Analysis

Schedule H-4

| Description | Average Monthly Consumption | Present Rates | Proposed Rates | Proposed Increase Amount | Proposed Increase % |
|---|---|---|---|---|---|
| 5/8" Residential | 7,346 | $ 47.62 | 99.83 | $ 52.21 | 109.65% |
| 3/4" Residential | 8,000 | 50.30 | 128.00 | 77.70 | 154.47% |
| 1" Residential | 6,898 | 73.28 | 209.38 | 136.10 | 185.71% |
| 1.5" Residential | 25,667 | 205.95 | 764.46 | 558.51 | 271.19% |
| 5/8" Commercial | 7,852 | 49.69 | 126.22 | 76.53 | 154.01% |
| 1" Commercial | 14,889 | 109.37 | 342.72 | 233.35 | 213.36% |
| 1.5" Commercial | 14,778 | 148.78 | 528.44 | 379.66 | 255.17% |
| 6" Commercial | - | 900.00 | 3,750.00 | 2,850.00 | 316.67% |
| 2" Irrigation | 298,292 | 1,697.23 | 9,151.85 | 7,454.62 | 439.22% |
| 3" Irrigation | 18,583 | 353.76 | 1,418.71 | 1,064.95 | 301.04% |
| 2" Construction | 41,386 | 314.68 | 1,460.11 | 1,145.43 | 363.99% |

# Moe

# Rate Design Rebuttal Schedule

# WWWC

**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | REBUTTAL | |
|---|---|---|---|---|---|
| | | Original Cost - As Filed | Fair Value - As Filed | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | $ 2,251,164 | $ 2,251,164 | $ 2,207,149 | $ 2,207,149 |
| 2 | | | | | |
| 3 | Adjusted Operating Income (Loss) | $ (95,458) | $ (95,458) | $ (93,559) | $ (93,559) |
| 4 | | | | | |
| 5 | Current Rate of Return (L3 / L1) | -4.24% | -4.24% | -4.24% | -4.24% |
| 6 | | | | | |
| 7 | Required Operating Income (L9 * L1) | $ 208,008 | $ 208,008 | $ 190,918 | $ 190,918 |
| 8 | | | | | |
| 9 | Required Rate of Return | 9.24% | 9.24% | 8.65% | 8.65% |
| 10 | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | $ 303,466 | $ 303,466 | $ 284,477 | $ 284,477 |
| 12 | | | | | |
| 13 | Gross Revenue Conversion Factor | 1.645086 | 1.645086 | 1.641985 | 1.641985 |
| 14 | | | | | |
| 15 | Increase in Gross Revenue Requirements | $ 499,228 | $ 499,228 | $ 467,107 | $ 467,107 |
| 16 | | | | | |
| 17 | | | | | |
| 18 | Customer | Present | Proposed | Dollar | Percent | Present | Proposed | Dollar | Percent |
| 19 | Classification | Rates | Rates | Increase | Increase | Rates | Rates | Increase | Increase |
| 20 | | | | | | | | | |
| 21 | Residential | $ 422,409 | $ 824,855 | $ 402,446 | 95.3% | $ 422,409 | $ 797,342 | $ 374,933 | 88.8% |
| 22 | Commercial | 19,367 | 81,114 | 61,747 | 318.8% | 19,367 | 77,865 | 58,498 | 302.0% |
| 23 | Irrigation | 12,835 | 41,429 | 28,594 | 222.8% | 12,835 | 40,241 | 27,406 | 213.5% |
| 24 | Construction | - | - | - | N/A | - | - | - | N/A |
| 25 | | | | | | | | | |
| 26 | Total of Water Revenues | $ 454,612 | $ 947,398 | $ 492,786 | 108.4% | $ 454,612 | $ 915,448 | $ 460,836 | 101.4% |
| 27 | | | | | | | | | |
| 28 | Miscellaneous Revenues | 19,743 | 25,453 | 5,710 | 28.9% | 19,743 | 25,453 | 5,710 | 28.9% |
| 29 | | | | | | | | | |
| 30 | Total Operating Revenues | $ 474,355 | $ 972,851 | $ 498,496 | 105.1% | $ 474,355 | $ 940,901 | $ 466,546 | 98.4% |
| 31 | | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |
| 34 | Supporting Schedules: | | | | | | | | |
| 35 | B-1 | | | | | | | | |
| 36 | C-1 | | | | | | | | |
| 37 | C-3 | | | | | | | | |
| 38 | H-1 | | | | | | | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Classification - Present and Proposed Rates

Schedule H-1

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | Residential | $ 422,409 | $ 797,342 | $ 374,933 | 88.8% |
| 3 | Commercial | 19,367 | 77,865 | 58,498 | 302.0% |
| 4 | Irrigation | 12,835 | 40,241 | 27,406 | 213.5% |
| 5 | Construction | - | - | - | N/A |
| 6 | | | | | |
| 7 | Total Water Revenues | $ 454,612 | $ 915,448 | $ 460,836 | 101.4% |
| 8 | | | | | |
| 9 | Miscellaneous Revenues (Sch. C-1, L4) | 19,743 | 25,453 | | |
| 10 | | | | | |
| 11 | Total Operating Revenues | $ 474,355 | $ 940,901 | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | Pro Forma Adjustments | - | | | |
| 16 | Subtotal (L11 + L15) | $ 474,355 | | | |
| 17 | | | | | |
| 18 | Total Gen. Ledger Operating Revenues | | | | |
| 19 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 473,527 | | | |
| 20 | Unreconciled Difference (L16 - L19) | 828 | | | |
| 21 | % | 0.17% | | | |
| 22 | | | | | |
| 23 | Target Revenue Requirement (Sch. C-1, L5) | | 940,634 | | |
| 24 | Difference (L11 - L23) | | 267 | | |
| 25 | % | | 0.03% | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Analysis of Revenue by Detailed Class



| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] | [J] | [K] | [L] | [M] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Bill Count Water Revenues | | | | | | General Ledger Water Revenues | | | | |
| Line No. | Class of Service | Average Number of Customers | Average Consumption | Present Rates | Adjustments | Adjusted Present Rates [C + D] | Proposed Rates | Proposed Increase [F - E] | % | T.Y. Ended 12/31/2008 | Revenue Adjustments | Adjusted G.L. Revenues [I + J] | Unreconciled Difference [E - K] | % |
| 1 | 5/8" Residential | 1,516 | 5,142 | $ 414,047 | $ - | $ 414,047 | $ 782,238 | $ 368,191 | 88.92% | | | | | |
| 2 | 3/4" Residential | 11 | 4,317 | 3,497 | - | 3,497 | 5,082 | 1,584 | 45.31% | | | | | |
| 3 | 1" Residential | 8 | 9,396 | 4,865 | - | 4,865 | 10,023 | 5,158 | 106.01% | | | | | |
| 4 | 5/8" Commercial | 2 | 2,375 | 454 | - | 454 | 785 | 331 | N/A | | | | | |
| 5 | 3/4" Commercial | 2 | 35,222 | 1,028 | - | 1,028 | 2,599 | 1,571 | 152.74% | | | | | |
| 6 | 1" Commercial | 7 | 11,628 | 3,900 | - | 3,900 | 8,153 | 4,253 | 109.05% | | | | | |
| 7 | 1" Commerical NT | 1 | 48,833 | 1,386 | - | 1,386 | 3,472 | 2,086 | 150.57% | | | | | |
| 8 | 1.5" Commercial | 1 | 18,000 | 872 | - | 872 | 2,664 | 1,792 | 205.59% | | | | | |
| 9 | 1.5" Commercial NT | 1 | 72,500 | 1,961 | - | 1,961 | 5,907 | 3,946 | 201.18% | | | | | |
| 10 | 6" Commercial | 1 | 4,750 | 3,669 | - | 3,669 | 17,917 | 14,248 | 388.30% | | | | | |
| 11 | 6" Commercial NT | 2 | 8,750 | 7,504 | - | 7,504 | 36,339 | 28,835 | 384.28% | | | | | |
| 12 | Fire Line Commercial NT | 1 | 1,083 | 76 | - | 76 | 28 | (47) | -62.68% | | | | | |
| 13 | 2" Irrigation | 2 | 4,955 | 4,955 | - | 4,955 | 13,069 | 8,115 | 163.78% | | | | | |
| 14 | 4" Irrigation | 1 | 5,414 | 5,414 | - | 5,414 | 18,130 | 12,716 | 234.85% | | | | | |
| 15 | 4" Irrigation NT | 1 | 3,750 | 2,466 | - | 2,466 | 9,042 | 6,575 | 266.61% | | | | | |
| 16 | 2" Construction | 1 | - | - | - | - | - | - | N/A | | | | | |
| 17 | 3" Construction | 1 | 8,000 | - | - | - | - | - | N/A | | | | | |
| 18 | Totals | 1,559 | 5,456 | $ 456,094 | - | $ 456,094 | $ 915,448 | $ 459,354 | 100.71% | | | | | |
| 19 | | | | | | | | | | | | | | |
| 20 | Total Residential | 1,535 | 5,159 | $ 422,409 | $ - | $ 422,409 | $ 797,342 | $ 374,933 | 88.76% | $ 427,199 | $ - | $ 427,199 | $ (4,790) | -1.12% |
| 21 | Total Commercial | 18 | 17,402 | 19,367 | - | 19,367 | 77,865 | 58,113 | 284.57% | 20,893 | - | 20,893 | (1,525) | -7.30% |
| 22 | Total Irrigation | 4 | 69,125 | 12,835 | - | 12,835 | 40,241 | 27,406 | 213.52% | 12,987 | - | 12,987 | (152) | -1.17% |
| 23 | Total Construction | 2 | 2,000 | - | - | - | - | - | N/A | 1,344 | - | 1,344 | (1,344) | -100.00% |
| 24 | Totals | 1,559 | 5,456 | 454,612 | - | 454,612 | 915,448 | 457,452 | 100.62% | $ 462,423 | $ - | $ 462,423 | (7,811) | -1.69% |
| 25 | | | | | | | | | | | | | | |
| 26 | Miscellaneous Revenue (Sch. C-1) | | | 19,743 | - | 19,743 | 25,453 | 5,710 | 28.92% | | | | | |
| 27 | Total Revenue Generated | | | | | | $ 940,901 | | | | | | | |
| 28 | Target Revenue Requirement (Sch. C-1) | | | | | | 940,634 | | | | | | | |
| 29 | Over/(Short) | | | | | | $ 267 | | | | | | | |
| 30 | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | |
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| 39 | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |

**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Establishment | $ 35.00 | $ 50.00 | $ 15.00 | 137 | $ 2,055 |
| 3 | After Hours | 45.00 | 100.00 | 55.00 | 2 | 110.00 |
| 4 | Reconnect | 35.00 | 75.00 | 40.00 | 80 | 3,200 |
| 5 | Meter Re-Read | 20.00 | 30.00 | 10.00 | 3 | 30 |
| 6 | NSF Fees | 15.00 | 30.00 | 15.00 | 21 | 315 |
| 7 | | | | | | |
| 8 | Proposed Misc. Service Charge Increase | | | | | $ 5,710 |
| 9 | | | | | | |
| 10 | | | | | | |
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**Willow Valley Water Company, Inc. - Rebuttal Schedules**
Test Year Ended December 31, 2008
Changes in Representative Rate Schedules

Schedule H-3

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 16.25 | $ 29.65 | $ 13.40 |
| 3/4" Meter | 22.25 | 29.65 | 7.40 |
| 1" Meter | 37.25 | 74.13 | 36.88 |
| 1.5" Meter | 45.00 | 148.25 | 103.25 |
| 2" Meter | 105.00 | 237.20 | 132.20 |
| 3" Meter | 150.00 | 474.40 | 324.40 |
| 4" Meter | 200.00 | 741.25 | 541.25 |
| 6" Meter | 300.00 | 1,482.50 | 1,182.50 |
| 8" Meter | N/A | 2,965.00 | N/A |
| Fire Sprinkler Service | * | N/A | N/A |

* 1% of Monthly Minimum for a Comparable Sized Meter Connection, but no less than $5.00 per month

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge (per 1,000 gallons) Proposed | Change |
|---|---|---|---|---|---|
| Tier One Breakover | 8 | 1 | $ 1.10 | $ 1.00 | varies |
| Tier Two Breakover | 999,999,999 | 5 | 1.70 | 2.60 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.85 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.50 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 4.50 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 5.45 | varies |
| **Construction/Standpipe (In 1,000's of Gallons)** | | | | | |
| Tier One Breakover | 999,999,999 | - | $ 2.00 | $ 1.00 | varies |
| Tier Two Breakover | N/A | - | N/A | 2.60 | varies |
| Tier Three Breakover | N/A | - | N/A | 2.85 | varies |
| Tier Four Breakover | N/A | - | N/A | 3.50 | varies |
| Tier Five Breakover | N/A | - | N/A | 4.50 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 5.45 | varies |
| **All Meter Sizes and Classes** | | | | | |
| Conservation Rebate Threshold ("CBT") | N/A | 6,401 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT | N/A | 45% | | | |

| Service Line & Meter Installation Charges[1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 445.00 | $ 600.00 | $ 155.00 |
| 3/4" Meter | 515.00 | 700.00 | 185.00 |
| 1" Meter | 590.00 | 810.00 | 220.00 |
| 1.5" Meter | 820.00 | 1,075.00 | 255.00 |
| 2" Turbo | 1,380.00 | 1,875.00 | 495.00 |
| 2" Compound | 1,380.00 | 2,720.00 | 1,340.00 |
| 3" Turbo | 1,935.00 | 2,715.00 | 780.00 |
| 3" Compound | 1,935.00 | 3,710.00 | 1,775.00 |
| 4" Turbo | 3,030.00 | 4,160.00 | 1,130.00 |
| 4" Compound | 3,030.00 | 5,315.00 | 2,285.00 |
| 6" Turbo | 5,535.00 | 7,235.00 | 1,700.00 |
| 6" Compound | 5,535.00 | 9,250.00 | 3,715.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| Plus actual road crossing charges | Cost | N/A | N/A |
| [1] Costs for boring under highway or pavement are additional at cost | N/A | Cost | N/A |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 35.00 | $ 50.00 |
| Establishment of Service (After Hours) | 45.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 35.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | 45.00 | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 20.00 | 30.00 |
| Meter Test Fee (If Correct) | 30.00 | 50.00 |
| NSF Check | 15.00 | 30.00 |
| Late Payment Charge (Per Month) | Greater of 1.5% or $5.00 | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |
| Damage Charge | **** | **** |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).
**** Per A.A.C. R14-2-407(B).

**Willow Valley Water Company**
Test Year Ended December 31, 2008
Typical Bill Analysis

Schedule H-4

| Description | Average Monthly Consumption | Present Rates | Proposed Rates | Proposed Increase Amount | Proposed Increase % |
|---|---|---|---|---|---|
| 5/8" Residential | 5,142 | $ 21.91 | $ 36.14 | $ 14.24 | 64.99% |
| 3/4" Residential | 4,317 | 27.00 | 34.94 | 7.94 | 29.43% |
| 1" Residential | 9,396 | 48.42 | 98.05 | 49.63 | 102.49% |
| 5/8" Commercial | 2,375 | 18.86 | 32.17 | 13.30 | 70.53% |
| 3/4" Commercial | 35,222 | 77.33 | 170.51 | 93.18 | 120.50% |
| 1" Commercial | 11,628 | 52.22 | 105.47 | 53.26 | 101.99% |
| 1" Commerical NT | 48,833 | 115.47 | 289.17 | 173.70 | 150.43% |
| 1.5" Commercial | 18,000 | 70.80 | 201.90 | 131.10 | 185.17% |
| 1.5" Commercial NT | 72,500 | 163.45 | 492.28 | 328.83 | 201.18% |
| 6" Commercial | 4,750 | 305.23 | 1,488.41 | 1,183.19 | 387.64% |
| 6" Commercial NT | 8,750 | 310.08 | 1,504.59 | 1,194.51 | 385.23% |
| Fire Line Commercial NT | 1,083 | 6.19 | 0.67 | (5.52) | -89.19% |
| 2" Irrigation | 61,083 | 204.04 | 519.00 | 314.96 | 154.36% |
| 4" Irrigation | 150,583 | 451.19 | 1,510.83 | 1,059.64 | 234.85% |
| 4" Irrigation NT | 3,750 | 204.13 | 745.73 | 541.61 | 265.33% |
| 2" Construction | - | 105.00 | 237.20 | 132.20 | 125.90% |
| 3" Construction | 8,000 | 158.80 | 494.35 | 335.55 | 211.30% |

# Moe

# Rate Design Rebuttal Schedule

# Consolidated West Valley

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Computation of Increase in Gross Revenue Requirement

Schedule A-1

| Line No. | DESCRIPTION | AS FILED | | | | REBUTTAL | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Original Cost - As Filed | Fair Value - As Filed | | | Original Cost - Rebuttal | Fair Value - Rebuttal |
| 1 | Adjusted Rate Base | | | $ 7,767,334 | $ 7,767,334 | | | $ 7,902,833 | $ 7,902,833 |
| 2 | | | | | | | | | |
| 3 | Adjusted Operating Income (Loss) | | | $ (769,680) | $ (769,680) | | | $ (749,161) | $ (749,161) |
| 4 | | | | | | | | | |
| 5 | Current Rate of Return (L3 / L1) | | | -9.91% | -9.91% | | | -9.48% | -9.48% |
| 6 | | | | | | | | | |
| 7 | Required Operating Income (L8 * L1) | | | $ 761,975 | $ 761,975 | | | $ 683,595 | $ 683,595 |
| 8 | | | | | | | | | |
| 9 | Required Rate of Return | | | 9.81% | 9.81% | | | 8.65% | 8.65% |
| 10 | | | | | | | | | |
| 11 | Operating Income Deficiency (L7 - L3) | | | $ 1,531,656 | $ 1,531,656 | | | $ 1,432,756 | $ 1,432,756 |
| 12 | | | | | | | | | |
| 13 | Gross Revenue Conversion Factor | | | 1.645086 | 1.645086 | | | 1.650888 | 1.650888 |
| 14 | | | | | | | | | |
| 15 | Increase in Gross Revenue Requirements | | | $ 2,519,705 | $ 2,519,705 | | | $ 2,365,317 | $ 2,365,317 |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | Customer | Present | Proposed | Dollar | Percent | Present | Proposed | Dollar | Percent |
| 19 | Classification | Rates | Rates | Increase | Increase | Rates | Rates | Increase | Increase |
| 20 | | | | | | | | | |
| 21 | Residential | $ 2,337,526 | $ 4,025,160 | $ 1,687,634 | 72.20% | $ 2,368,497 | $ 3,803,379 | $ 1,434,882 | 60.58% |
| 22 | Commercial | 218,219 | 404,307 | 186,088 | 85.28% | 210,941 | 367,928 | 156,987 | 74.42% |
| 23 | Irrigation | 681,178 | 1,182,841 | 501,663 | 73.65% | 681,178 | 1,156,980 | 475,802 | 69.85% |
| 24 | Construction | - | - | - | N/A | 186,958 | 316,154 | 129,195 | N/A |
| 25 | | | | | | | | | |
| 26 | Total of Water Revenues | $ 3,236,923 | $ 5,612,307 | $ 2,375,384 | 73.38% | $ 3,447,574 | $ 5,644,441 | $ 2,196,867 | 63.72% |
| 27 | | | | | | | | | |
| 28 | Miscellaneous Revenues | 257,625 | 391,460 | 133,835 | 51.95% | 257,625 | 391,460 | 133,835 | 51.95% |
| 29 | | | | | | | | | |
| 30 | Total Operating Revenues | $ 3,494,548 | $ 6,003,767 | $ 2,509,219 | 71.80% | $ 3,705,199 | $ 6,035,901 | $ 2,330,702 | 62.90% |
| 31 | | | | | | | | | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |
| 34 | Supporting Schedules: | | | | | | | | |
| 35 | B-1 | | | | | | | | |
| 36 | C-1 | | | | | | | | |
| 37 | C-3 | | | | | | | | |
| 38 | H-1 | | | | | | | | |
| 39 | | | | | | | | | |
| 40 | | | | | | | | | |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31. 2008
Classification - Present and Proposed Rates

Schedule H-1

| Line No. | Customer Classification | [A] Present Rates Adjusted Sch. H-2 Col. E | [B] Proposed Rates Sch. H-2 Col. F | [C] Proposed Increase Amount | [D] % |
|---|---|---|---|---|---|
| 1 | Residential | $ 2,368,497 | $ 3,803,379 | $ 1,434,882 | 60.6% |
| 2 | Commercial | 210,941 | 367,928 | 156,987 | 74.4% |
| 3 | Irrigation | 681,178 | 1,156,980 | 475,802 | 69.8% |
| 4 | Construction | 186,958 | 316,154 | 129,195 | N/A |
| 5 | | | | | |
| 6 | Total Water Revenues | $ 3,447,574 | $ 5,644,441 | $ 2,196,867 | 63.7% |
| 7 | | | | | |
| 8 | Miscellaneous Revenues (Sch. C-1, L4) | 257,625 | 391,460 | | |
| 9 | | | | | |
| 10 | Total Operating Revenues | $ 3,705,199 | $ 6,035,901 | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | Pro Forma Adjustments | (186,696) | | | |
| 15 | Subtotal (L10 + L14) | $ 3,518,503 | | | |
| 16 | | | | | |
| 17 | Total Gen. Ledger Operating Revenues | | | | |
| 18 | Test Year Ended 12/31/2008 (Sch. C-1, L5) | 3,483,606 | | | |
| 19 | Unreconciled Difference (L15 - L18) | 34,897 | | | |
| 20 | % | 0.99% | | | |
| 21 | | | | | |
| 22 | Target Revenue Requirement (Sch. C-1, L5) | | 6,035,619 | | |
| 23 | Difference (L10 - L22) | | 282 | | |
| 24 | % | | 0.00% | | |
| 25 | | | | | |
| 26 | | | | | |
| 27 | | | | | |
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| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |

Global Water - West Valley Consolidation - Rebuttal Schedules
Test Year Ended December 31, 2008
Analysis of Revenue by Detailed Class



| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] | [J] | [K] | [L] | [M] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Bill Count Water Revenues | | | | | | General Ledger Water Revenues | | | | |
| Line No. | Class of Service | Average Number of Customers | Average Consumption | Present Rates | Adjustments Sch. C-2.3 & Notes | Adjusted Present Rates [C + D] | Proposed Rates | Proposed Increase [F - E] | % | T.Y. Ended 12/31/2008 | Revenue Adjustments Sch. C-2.1 & C-2.3 | Adjusted G.L. Revenues [I + J] | Unreconciled Difference [E - K] | % |
| 1 | 5/8" Residential, TD | 4,661 | 5,817 | $ 1,657,328 | $ 19,447 | $ 1,676,776 | $ 2,814,712 | $ 1,137,937 | 67.86% | | | | | |
| 2 | 3/4" Residential, TD | 99 | 4,925 | 34,233 | - | 34,233 | 56,602 | 22,369 | 65.34% | | | | | |
| 3 | 1" Residential, TD | 75 | 7,715 | 53,548 | - | 53,548 | 103,304 | 49,755 | 92.91% | | | | | |
| 4 | 2" Residential, TD | 15 | 84,875 | 68,243 | - | 68,243 | 119,659 | 51,416 | 75.34% | | | | | |
| 5 | 5/8" Commercial, TD | 14 | 9,009 | 6,513 | 3,747 | 10,259 | 11,114 | 855 | 8.34% | | | | | |
| 6 | 3/4" Commercial, TD | 1 | 5,857 | 222 | - | 222 | 374 | 152 | 0.00% | | | | | |
| 7 | 1" Commercial, TD | 4 | 64,551 | 8,663 | - | 8,663 | 14,978 | 6,316 | 72.91% | | | | | |
| 8 | 1.5" Commercial, TD | 2 | 62,029 | 4,291 | - | 4,291 | 7,722 | 3,431 | 79.95% | | | | | |
| 9 | 2" Commercial, TD | 21 | 162,979 | 148,502 | - | 148,502 | 260,165 | 111,663 | 75.19% | | | | | |
| 10 | 3" Commercial, TD | 2 | 154,432 | 14,667 | - | 14,667 | 29,083 | 14,416 | 98.29% | | | | | |
| 11 | 4" Commercial, TD | 1 | 1,333 | 4,223 | - | 4,223 | 5,722 | 1,499 | 0.00% | | | | | |
| 12 | 6" Commercial, TD | 1 | 3,000 | 3,543 | - | 3,543 | 9,541 | 5,998 | 169.30% | | | | | |
| 13 | 5/8" Irrigation, TD | 6 | 70,022 | 14,715 | - | 14,715 | 24,017 | 9,302 | 63.22% | | | | | |
| 14 | 1" Irrigation, TD | 2 | 93,583 | 7,324 | - | 7,324 | 12,540 | 5,217 | 71.23% | | | | | |
| 15 | 1.5" Irrigation, TD | 6 | 126,886 | 28,901 | - | 28,901 | 51,155 | 22,254 | 77.00% | | | | | |
| 16 | 2" Irrigation, TD | 28 | 188,928 | 204,049 | - | 204,049 | 356,314 | 152,265 | 74.62% | | | | | |
| 17 | 6" Irrigation, TD | 1 | 2,786 | 4,956 | - | 4,956 | 13,379 | 8,424 | 169.97% | | | | | |
| 18 | 5/8" HOA, TD | 11 | 151,019 | 57,839 | - | 57,839 | 96,059 | 38,220 | 66.08% | | | | | |
| 19 | 1" HOA, TD | 20 | 47,345 | 40,114 | - | 40,114 | 70,442 | 30,328 | 75.60% | | | | | |
| 20 | 1.5" HOA, TD | 5 | 141,264 | 25,388 | - | 25,388 | 44,690 | 19,302 | 76.03% | | | | | |
| 21 | 2" HOA, TD | 29 | 195,393 | 240,004 | - | 240,004 | 416,120 | 176,116 | 73.38% | | | | | |
| 22 | 3" HOA, TD | 1 | 770,100 | 12,137 | - | 12,137 | 21,617 | 9,480 | 78.11% | | | | | |
| 23 | 2" Construction, TD | 15 | 184,112 | 119,538 | - | 119,538 | 208,964 | 89,426 | N/A | | | | | |
| 24 | 3" Construction, TD | 2 | 99,500 | 8,153 | - | 8,153 | 17,151 | 8,998 | N/A | | | | | |
| 25 | 4" Construction, TD | 1 | 33,050 | 7,945 | - | 7,945 | 10,896 | 2,951 | N/A | | | | | |
| 26 | 6" Construction, TD | 1 | 315,900 | 8,017 | - | 8,017 | 26,639 | 18,622 | N/A | | | | | |
| 27 | 5/8" Residential, GBD | 504 | 9,068 | 260,817 | (807) | 260,010 | 368,852 | 108,843 | 41.88% | | | | | |
| 28 | 3/4" Residential, GBD | 58 | 10,239 | 32,751 | - | 32,751 | 45,563 | 12,802 | 39.09% | | | | | |
| 29 | 1" Residential, GBD | 53 | 9,740 | 43,859 | - | 43,859 | 76,172 | 32,313 | 73.68% | | | | | |
| 30 | 5/8" Commercial, GBD | 2 | 7,267 | 553 | (18) | 535 | 829 | 295 | 55.09% | | | | | |
| 31 | 1" HOA, GBD | 1 | 6,417 | 696 | - | 696 | 1,285 | 590 | 84.75% | | | | | |
| 32 | 2" Construction, GBD | 2 | 659,600 | 29,458 | - | 29,458 | 52,503 | 23,045 | N/A | | | | | |
| 33 | 5/8" Residential, GT | 316 | 7,346 | 186,884 | (575) | 186,309 | 201,333 | 15,025 | 8.06% | | | | | |
| 34 | 3/4" Residential, GT | 4 | 8,000 | 2,451 | - | 2,451 | 2,671 | 220 | 8.96% | | | | | |
| 35 | 1" Residential, GT | 11 | 8,698 | 9,700 | - | 9,700 | 13,699 | 3,999 | 41.23% | | | | | |
| 36 | 1.5" Residential, GT | 1 | 14,778 | 618 | - | 618 | 821 | 203 | N/A | | | | | |
| 37 | 5/8" Commercial, GT | 3 | 7,652 | 1,385 | - | 1,385 | 1,418 | 32 | 2.34% | | | | | |
| 38 | 1" Commercial, GT | 1 | 14,889 | 989 | - | 989 | 1,223 | 235 | 23.72% | | | | | |
| 39 | 1.5" Commercial, GT | 2 | 14,778 | 2,862 | - | 2,862 | 2,898 | 36 | 1.27% | | | | | |
| 40 | 6" Commercial, GT | 1 | - | 10,800 | - | 10,800 | 22,860 | 12,060 | 111.67% | | | | | |
| 41 | 2" Irrigation, GT | 2 | 296,292 | 40,785 | - | 40,785 | 41,366 | 581 | 1.42% | | | | | |
| 42 | 3" Irrigation, GT | 1 | 18,583 | 4,270 | - | 4,270 | 7,993 | 3,723 | 87.17% | | | | | |
| 43 | 2" Construction, GT | 4 | 41,386 | 13,846 | - | 13,846 | - | (13,846) | N/A | | | | | |
| 44 | | | | | | | | | | | | | | |
| 45 | Totals | 5,990 | 10,234 | $ 3,425,781 | $ 21,794 | $ 3,447,574 | $ 5,644,441 | $ 2,196,867 | 63.72% | | | | | |
| 46 | | | | | | | | | | | | | | |
| 47 | Total Residential | 5,797 | 6,477 | $ 2,350,432 | $ 18,065 | $ 2,368,497 | $ 3,803,379 | $ 1,434,882 | 60.58% | $ 2,373,644 | $ - | $ 2,373,644 | $ (5,147) | -0.22% |
| 48 | Total Commercial | 55 | 83,116 | 207,213 | 3,728 | 210,941 | 367,928 | 156,987 | 74.42% | 216,042 | - | 216,042 | (5,101) | -2.36% |
| 49 | Total Irrigation | 113 | 143,371 | 681,178 | - | 681,178 | 1,156,980 | 475,802 | 69.85% | 673,376 | - | 673,376 | 7,802 | 1.16% |
| 50 | Total Construction | 25 | 179,063 | 186,958 | - | 186,958 | 316,154 | 129,195 | N/A | 178,851 | - | 178,851 | 8,107 | 4.53% |
| 51 | Totals | 5,990 | 10,234 | 3,425,781 | 21,794 | 3,447,574 | 5,644,441 | 2,196,867 | 63.72% | $ 3,441,913 | $ - | $ 3,441,913 | 5,661 | 0.16% |
| 52 | | | | | | | | | | | | | | |
| 53 | Miscellaneous Revenue (Sch. C-1) | | | 257,625 | - | 257,625 | 391,460 | 133,835 | 51.95% | | | | | |
| 54 | Total Revenue Generated | | | | | | $ 6,035,901 | | | | | | | |
| 55 | Target Revenue Requirement (Sch. C-1) | | | | | | 6,035,619 | | | | | | | |
| 56 | Over/(Short) | | | | | | $ 282 | | | | | | | |

57

58 * Adjustment for Credits not accounted for in Bill Count - $(867) applied to 5/8" Res TD, Col. D

59 Adjustment for Jan - March Billing, Usage billed was rounded down to nearest 1,000, understates bill count - $37,466 Col. D

60 Adjustments for Pro-Rated Bills not Accounted for in Bill Count applied in Col. D for reconciliation, no revenue impact.

61 Average Pro-Rated Bill Period - 13 Days (Remove 17 Days)

| | | | Pro-Rated Bills | Avg. Pro-Rated Min. | Adjustment |
|---|---|---|---|---|---|
| 62 | | | | | |
| 63 | Valencia, Town Division | Residential | 1,817 | 7.37 | (13,385) |
| 64 | | Commercial | - | - | - |
| 65 | | | | | |
| 66 | Valencia, Greater Buckeye Div. | Residential | 89 | 9.07 | (807) |
| 67 | | Commercial | 2 | 9.07 | (18) |
| 68 | | | | | |
| 69 | Greater Tonopah | Residential | 58 | 9.92 | (575) |
| 70 | | Commercial | - | - | - |

Reconciliation from Bill Count Present Revenues to General Ledger - same as above, but demonstrates unadjusted reconciliation including pro-rated bills for residential and commercial. Other classes left as demonstrated above.

| | Residential | Commercial |
|---|---|---|
| Bill Count - Present Rates | $ 2,350,432 | $ 207,213 |
| Acct. Adjustments - Sch. C2, p2. | - | - |
| Billing Change/Credits | 32,832 | 3,747 |
| Pro-Rated Bill Adjustment | (14,767) | (18) |
| | $ 2,368,497 | $ 210,941 |
| General Ledger | $ 2,373,644 | $ 216,042 |
| Unreconciled Difference | $ (5,147) | $ (5,101) |

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Calculation of Change in Miscellaneous Service Charge Revenue



| Line No. | | Current | Proposed | Increase | Test Year Charges | Revenue Increase |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | Valencia, Town Division | | | | | |
| 3 | Establishment | $ 30.00 | $ 50.00 | $ 20.00 | 2,531 | $ 50,620 |
| 4 | After Hours | 45.00 | 100.00 | 55.00 | 14 | 770 |
| 5 | Reconnect | 30.00 | 75.00 | 45.00 | 1,407 | 63,315 |
| 6 | NSF Fees | 15.00 | 30.00 | 15.00 | 207 | 3,105 |
| 7 | | | | | | |
| 8 | | | | | | $ 117,810 |
| 9 | | | | | | |
| 10 | Valencia, Greater Buckeye Division | | | | | |
| 11 | Establishment | $ 30.00 | $ 50.00 | $ 20.00 | 116 | $ 2,320 |
| 12 | After Hours | 40.00 | 100.00 | 60.00 | - | - |
| 13 | Reconnect | 30.00 | 75.00 | 45.00 | 165 | 7,425 |
| 14 | NSF Fees | 15.00 | 30.00 | 15.00 | 27 | 405 |
| 15 | | | | | | |
| 16 | | | | | | $ 10,150 |
| 17 | | | | | | |
| 18 | Water Utility of Greater Tonopah | | | | | |
| 19 | Establishment | $ 30.00 | $ 50.00 | $ 20.00 | 58 | $ 1,160 |
| 20 | After Hours | 45.00 | 100.00 | 55.00 | - | - |
| 21 | Reconnect | 30.00 | 75.00 | 45.00 | 99 | 4,455 |
| 22 | Meter Test | 30.00 | 50.00 | 20.00 | 1 | 20 |
| 23 | NSF Fees | 15.00 | 30.00 | 15.00 | 16 | 240 |
| 24 | | | | | | |
| 25 | | | | | | $ 5,875 |
| 26 | | | | | | |
| 27 | | | | | | |
| 28 | Proposed Misc. Service Charge Increase | | | | | $ 133,835 |
| 29 | | | | | | |
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| 40 | | | | | | |

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Basic Service Charge Proposed | Basic Service Charge Change |
|---|---|---|---|
| 5/8" Meter | $ 13.00 | $ 38.10 | $ 25.10 |
| 3/4" Meter | 25.00 | 38.10 | 13.10 |
| 1" Meter | 37.50 | 95.25 | 57.75 |
| 1.5" Meter | 75.00 | 190.50 | 115.50 |
| 2" Meter | 145.00 | 304.80 | 159.80 |
| 3" Meter | 225.00 | 609.60 | 384.60 |
| 4" Meter | 700.00 | 952.50 | 252.50 |
| 6" Meter | 700.00 | 1,905.00 | 1,205.00 |
| 8" Meter | N/A | 3,810.00 | N/A |
| Fire Sprinkler Service | * | N/A | N/A |

* 1% of Monthly Minimum for a Comparable Sized Meter Connection, but no less than $5.00 per month.

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge Proposed | Volumetric Charge Change |
|---|---|---|---|---|---|
| Tier One Breakover | 999,999,999 | 1 | $ 2.86 | $ 1.00 | varies |
| Tier Two Breakover | N/A | 5 | N/A | 2.45 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.70 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.25 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.93 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.88 | varies |
| Conservation Rebate Threshold ("CBT") | N/A | 7,001 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT: | N/A | 49% | | | |

| Service Line & Meter Installation Charges [1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 360.00 | $ 600.00 | $ 240.00 |
| 3/4" Meter | 360.00 | 700.00 | 340.00 |
| 1" Meter | 400.00 | 810.00 | 410.00 |
| 1.5" Meter | 630.00 | 1,075.00 | 445.00 |
| 2" Turbo | 880.00 | 1,875.00 | 995.00 |
| 2" Compound | 880.00 | 2,720.00 | 1,840.00 |
| 3" Turbo | 1,040.00 | 2,715.00 | 1,675.00 |
| 3" Compound | 1,040.00 | 3,710.00 | 2,670.00 |
| 4" Turbo | 2,890.00 | 4,160.00 | 1,270.00 |
| 4" Compound | 2,890.00 | 5,315.00 | 2,425.00 |
| 6" Turbo | 4,020.00 | 7,235.00 | 3,215.00 |
| 6" Compound | 4,020.00 | 9,250.00 | 5,230.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| Plus actual road crossing charges | Cost | N/A | N/A |
| [1] Costs for boring under a highway or pavement are additional at actual cost | N/A | Cost | N/A |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 30.00 | $ 50.00 |
| Establishment of Service (After Hours) | 45.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 25.00 | 30.00 |
| Meter Test Fee (If Correct) | 35.00 | 50.00 |
| NSF Check | 15.00 | 30.00 |
| Late Payment Charge (Per Month) | Greater of 1.5% or $5.00 | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | Greater of 1.5% or $3.50 | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Basic Service Charge Proposed | Basic Service Charge Change |
|---|---|---|---|
| 5/8" Meter | $ 16.00 | $ 38.10 | $ 22.10 |
| 3/4" Meter | 16.00 | 38.10 | 22.10 |
| 1" Meter | 40.00 | 95.25 | 55.25 |
| 1.5" Meter | 80.00 | 190.50 | 110.50 |
| 2" Meter | 128.00 | 304.80 | 176.80 |
| 3" Meter | 240.00 | 609.60 | 369.60 |
| 4" Meter | 400.00 | 952.50 | 552.50 |
| 6" Meter | 820.00 | 1,905.00 | 1,085.00 |
| 8" Meter | N/A | 3,810.00 | N/A |
| Construction/Standpipe | 150.00 | Same as Above | N/A |

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge (per 1,000 gallons) Proposed | Volumetric Charge (per 1,000 gallons) Change |
|---|---|---|---|---|---|
| Tier One Breakover | 12 | 1 | $ 2.75 | $ 1.00 | varies |
| Tier Two Breakover | 999,999,999 | 5 | 3.75 | 2.45 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.70 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.25 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.93 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.88 | varies |
| Conservation Rebate Threshold ("CBT") | N/A | 7,001 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT: | N/A | 49% | | | |

| Service Line & Meter Installation Charges [1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 485.00 | $ 600.00 | $ 115.00 |
| 3/4" Meter | 485.00 | 700.00 | 215.00 |
| 1" Meter | 570.00 | 810.00 | 240.00 |
| 1.5" Meter | 740.00 | 1,075.00 | 335.00 |
| 2" Turbo | 1,235.00 | 1,875.00 | 640.00 |
| 2" Compound | 1,235.00 | 2,720.00 | 1,485.00 |
| 3" Turbo | 2,340.00 | 2,715.00 | 375.00 |
| 3" Compound | 2,340.00 | 3,710.00 | 1,370.00 |
| 4" Turbo | 2,700.00 | 4,160.00 | 1,460.00 |
| 4" Compound | 2,700.00 | 5,315.00 | 2,615.00 |
| 6" Turbo | 5,035.00 | 7,235.00 | 2,200.00 |
| 6" Compound | 5,035.00 | 9,250.00 | 4,215.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| [1] Costs for boring under a highway or pavement are additional at actual cost | Cost | Cost | - |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 30.00 | $ 50.00 |
| Establishment of Service (After Hours) | 40.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 20.00 | 30.00 |
| Meter Test Fee (If Correct) | 30.00 | 50.00 |
| NSF Check | 15.00 | 30.00 |
| Late Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Monthly Minimum Charges:**

| Meter Size (All Classes) | Basic Service Charge Present | Basic Service Charge Proposed | Basic Service Charge Change |
|---|---|---|---|
| 5/8" Meter | $ 17.50 | $ 38.10 | $ 20.60 |
| 3/4" Meter | 17.50 | 38.10 | 20.60 |
| 1" Meter | 45.00 | 95.25 | 50.25 |
| 1.5" Meter | 85.00 | 190.50 | 105.50 |
| 2" Meter | 145.00 | 304.80 | 159.80 |
| 3" Meter | 270.00 | 609.60 | 339.60 |
| 4" Meter | 450.00 | 952.50 | 502.50 |
| 6" Meter | 900.00 | 1,905.00 | 1,005.00 |
| 8" Meter | N/A | 3,810.00 | N/A |

**Commodity Rate Charges:**

| Potable Water - All Meter Sizes and Classes (In 1,000's of Gallons) | Rate Block Present | Rate Block Proposed | Volumetric Charge (per 1,000 gallons) Present | Volumetric Charge (per 1,000 gallons) Proposed | Volumetric Charge (per 1,000 gallons) Change |
|---|---|---|---|---|---|
| Tier One Breakover | 12 | 1 | $ 4.10 | $ 1.00 | varies |
| Tier Two Breakover | 999,999,999 | 5 | 5.25 | 2.45 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.70 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.25 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.93 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.88 | varies |
| Construction/Standpipe | | | | | |
| Tier One Breakover | 999,999,999 | 1 | $ 4.10 | $ 1.00 | varies |
| Tier Two Breakover | N/A | 5 | N/A | 2.45 | varies |
| Tier Three Breakover | N/A | 10 | N/A | 2.70 | varies |
| Tier Four Breakover | N/A | 18 | N/A | 3.25 | varies |
| Tier Five Breakover | N/A | 25 | N/A | 3.93 | varies |
| Tier Six Breakover | N/A | 999,999,999 | N/A | 4.88 | varies |
| All Meter Sizes and Classes | | | | | |
| Conservation Rebate Threshold ("CBT") | N/A | 7,001 gallons | | | |
| Commodity rate rebate applied if consumption is below the CBT: | N/A | 49% | | | |

| Service Line & Meter Installation Charges [1] | Present | Proposed | Change |
|---|---|---|---|
| 5/8" Meter | $ 485.00 | $ 600.00 | $ 115.00 |
| 3/4" Meter | 485.00 | 700.00 | 215.00 |
| 1" Meter | 570.00 | 810.00 | 240.00 |
| 1.5" Meter | 775.00 | 1,075.00 | 300.00 |
| 2" Turbo | 1,900.00 | 1,875.00 | (25.00) |
| 2" Compound | 1,900.00 | 2,720.00 | 820.00 |
| 3" Turbo | 2,490.00 | 2,715.00 | 225.00 |
| 3" Compound | 2,490.00 | 3,710.00 | 1,220.00 |
| 4" Turbo | 3,615.00 | 4,160.00 | 545.00 |
| 4" Compound | 3,615.00 | 5,315.00 | 1,700.00 |
| 6" Turbo | 6,810.00 | 7,235.00 | 425.00 |
| 6" Compound | 6,810.00 | 9,250.00 | 2,440.00 |
| 8" Turbo | N/A | Cost | N/A |
| 8" Compound | N/A | Cost | N/A |
| [1] Costs for boring under highway or pavement are additional at cost | Cost | Cost | - |

| Miscellaneous Service Charges | Present | Proposed |
|---|---|---|
| Establishment of Service | $ 30.00 | $ 50.00 |
| Establishment of Service (After Hours) | 45.00 | 100.00 |
| Re-establishment of Service (Within 12 Months) | * | * |
| Reconnection of Service (Delinquent) | 30.00 | 75.00 |
| Reconnection of Service - After Hours (Delinquent) | N/A | 100.00 |
| Meter Move at Customer Request | ** | Per AAC R14-2-405.B.5 |
| After Hours Service Charge, Per Hour | - | 50.00 |
| Deposit | *** | *** |
| Meter Re-Read (If Correct) | 20.00 | 30.00 |
| Meter Test Fee (If Correct) | - | 50.00 |
| NSF Check | 15.00 | 30.00 |
| Late Payment Charge (Per Month) | $ 3.00 | Greater of 1.5% or $5.00 |
| Deferred Payment Charge (Per Month) | 1.50% | Greater of 1.5% or $3.50 |

* Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).
** Cost to include parts, labor, overhead and all applicable taxes.
*** Per A.A.C. R14-2-403(B).

**Global Water - West Valley Consolidation - Rebuttal Schedules**
Test Year Ended December 31, 2008
Typical Bill Analysis

Schedule H-4

| Description | Average Monthly Consumption | Present Rates | Unconsol. Proposed Rates | Unconsol. % Increase | Consolidated Proposed Rates | Consolidated Proposed Increase Amount | Consolidated Proposed Increase % |
|---|---|---|---|---|---|---|---|
| 5/8" Residential, TD | 5,817 | $ 29.64 | $ 39.97 | 34.9% | $ 44.73 | $ 15.10 | 50.94% |
| 3/4" Residential, TD | 4,925 | 29.08 | 39.14 | 34.6% | 43.51 | 14.43 | 49.61% |
| 1" Residential, TD | 7,715 | 59.57 | 104.02 | 74.6% | 113.38 | 53.82 | 90.35% |
| 2" Residential, TD | 84,875 | 387.74 | 599.58 | 54.6% | 674.80 | 287.06 | 74.03% |
| 5/8" Commercial, TD | 9,009 | 38.77 | 53.97 | 39.2% | 59.72 | 20.96 | 54.06% |
| 3/4" Commercial, TD | 5,857 | 31.75 | 40.01 | 26.0% | 44.79 | 13.04 | 41.06% |
| 1" Commercial, TD | 64,551 | 222.12 | 319.79 | 44.0% | 366.07 | 143.95 | 64.81% |
| 1.5" Commercial, TD | 62,029 | 252.40 | 397.57 | 57.5% | 449.01 | 196.61 | 77.89% |
| 2" Commercial, TD | 162,979 | 611.12 | 927.61 | 51.8% | 1,055.95 | 444.83 | 72.79% |
| 3" Commercial, TD | 154,432 | 666.68 | 1,174.51 | 76.2% | 1,319.04 | 652.36 | 97.85% |
| 4" Commercial, TD | 1,333 | 703.81 | 884.45 | 25.7% | 953.43 | 249.61 | 35.47% |
| 6" Commercial, TD | 3,000 | 708.58 | 1,769.63 | 149.7% | 1,908.01 | 1,199.43 | 169.27% |
| 5/8" Irrigation, TD | 70,022 | 213.26 | 289.74 | 35.9% | 335.62 | 122.35 | 57.37% |
| 1" Irrigation, TD | 93,583 | 305.15 | 441.73 | 44.8% | 507.75 | 202.60 | 66.39% |
| 1.5" Irrigation, TD | 126,886 | 437.90 | 669.97 | 53.0% | 765.52 | 327.62 | 74.82% |
| 2" Irrigation, TD | 168,826 | 627.84 | 952.17 | 51.7% | 1,084.48 | 456.64 | 72.73% |
| 6" Irrigation, TD | 2,786 | 707.97 | 1,769.45 | 149.9% | 1,907.74 | 1,199.77 | 169.47% |
| 5/8" HOA, TD | 151,019 | 444.92 | 629.93 | 41.6% | 730.88 | 285.97 | 64.27% |
| 1" HOA, TD | 47,345 | 172.91 | 247.52 | 43.2% | 282.10 | 109.20 | 63.15% |
| 1.5" HOA, TD | 141,264 | 479.02 | 730.36 | 52.5% | 835.68 | 356.66 | 74.46% |
| 2" HOA, TD | 195,393 | 703.82 | 1,063.75 | 51.1% | 1,214.13 | 510.30 | 72.50% |
| 3" HOA, TD | 770,100 | 2,427.49 | 3,760.32 | 54.9% | 4,323.50 | 1,896.01 | 78.11% |
| 2" Construction, TD | 184,112 | 671.56 | 1,016.37 | 51.3% | 1,159.08 | 487.52 | 72.59% |
| 3" Construction, TD | 99,500 | 509.57 | 943.80 | 85.2% | 1,050.97 | 541.40 | 106.25% |
| 4" Construction, TD | 33,050 | 794.52 | 982.86 | 23.7% | 1,069.59 | 275.07 | 34.62% |
| 8" Construction, TD | 315,900 | 1,603.47 | 4,822.08 | 200.7% | 5,307.40 | 3,703.93 | 230.99% |
| 5/8" Residential, GBD | 9,068 | 40.94 | 51.61 | 26.1% | 59.88 | 18.95 | 46.28% |
| 3/4" Residential, GBD | 10,239 | 44.16 | 54.41 | 23.2% | 63.18 | 19.02 | 43.07% |
| 1" Residential, GBD | 9,740 | 66.79 | 103.03 | 54.3% | 118.85 | 52.06 | 77.96% |
| 5/8" Commercial, GBD | 7,267 | 35.98 | 41.07 | 14.1% | 55.02 | 19.04 | 52.90% |
| 1" HOA, GBD | 6,417 | 57.65 | 89.87 | 55.9% | 102.71 | 45.06 | 78.17% |
| 2" Construction, GBD | 659,600 | 2,611.50 | 2,996.22 | 14.7% | 3,479.46 | 867.96 | 33.24% |
| 5/8" Residential, GT | 7,346 | 47.62 | 99.83 | 109.7% | 55.23 | 7.62 | 15.99% |
| 3/4" Residential, GT | 8,000 | 50.30 | 128.00 | 154.5% | 57.00 | 6.70 | 13.32% |
| 1" Residential, GT | 6,898 | 73.28 | 209.38 | 185.7% | 103.37 | 30.09 | 41.06% |
| 1.5" Residential, GT | 25,667 | 205.95 | 764.46 | 271.2% | 271.56 | 65.61 | 31.86% |
| 5/8" Commercial, GT | 7,852 | 49.69 | 126.22 | 154.0% | 56.60 | 6.91 | 13.90% |
| 1" Commercial, GT | 14,889 | 109.37 | 342.72 | 213.4% | 135.44 | 26.07 | 23.84% |
| 1.5" Commercial, GT | 14,778 | 148.78 | 528.44 | 255.2% | 230.33 | 81.54 | 54.81% |
| 6" Commercial, GT | - | 900.00 | 3,750.00 | 316.7% | 1,905.00 | 1,005.00 | 111.67% |
| 2" Irrigation, GT | 298,292 | 1,697.23 | 9,151.85 | 439.2% | 1,716.27 | 19.04 | 1.12% |
| 3" Irrigation, GT | 18,583 | 353.76 | 1,418.71 | 301.0% | 662.19 | 308.43 | 87.19% |
| 2" Construction, GT | 41,386 | 314.68 | 1,460.11 | 364.0% | 462.58 | 147.89 | 47.00% |

TD - Valencia, Town District
GBD - Valencia, Greater Buckeye District
GT - WUGT

EXHIBIT
A 24
ADMITTED

**BEFORE THE ARIZONA CORPORATION COMMISSION**

**COMMISSIONERS**
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

| | |
|---|---|
| IN THE MATTER OF THE APPLICATION OF GLOBAL WATER – PALO VERDE UTILITIES COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES FOR UTILITY SERVICE DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF ITS PROPERTY THROUGHOUT THE STATE OF ARIZONA. | DOCKET NO. SW-03575A-09- |

Direct Testimony

of

Graham S. Symmonds

February 20, 2009

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## I. Introduction.

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

A. My name is Graham S. Symmonds. My business address is 21410 North 19th Avenue, Suite 201, Phoenix, Arizona 85027.

**Q. By whom are you employed and what is your position?**

A. I am Senior Vice President and Chief Technical Officer for Global Water Management, LLC ("Global Management"). Global Management manages all of the Global Utilities, including Palo Verde Utilities Company ("Palo Verde") and Santa Cruz Water Company ("Santa Cruz"). For the purposes of this testimony, "Global Water", "Global Utilities", "Global Parent" and "Global Management" have the same definitions given in Mr. Hill's testimony.

**Q. Please describe your education, background and experience.**

A. I graduated from the University of Toronto with a Bachelors of Applied Science in Mechanical Engineering in 1985. I then joined the Canadian Navy in 1986, where I pursued post-graduate studies at the Royal Naval Engineering College in Plymouth, England. I served as the Deputy Engineering Officer in HMCS Annapolis from 1989 through 1991. Subsequent to that assignment, I became the Equipment Health Monitoring Officer for the Naval Engineering Unit Pacific, where I was responsible for condition-based maintenance assessments for all equipment used in west coast ships, as well as performing pre- and post-refit trials.

In 1995, I left the Canadian Navy and became a partner and Director of Operations for Hill, Murray & Associates, a design-build firm specializing in water reclamation facilities. In 2001, I joined Algonquin Water Resources of America as Vice President of Engineering

and Operations, responsible for the day-to-day operation of its utilities, including regulatory filings, growth management, plant operations and capital project planning and execution. Finally, I joined Global Water Resources as a Senior Vice President of Operations and Compliance in 2003. In 2007, I became the Chief Technical Officer and Senior Vice President of Regulatory Affairs and Compliance. I have been in the water, wastewater, and recycled water service business for over 14 years.

**Q. What topics will your testimony address?**

A. I will cover the following topics:

- I explain our approach to regional, conservation-focused, efficient infrastructure and testify that our facilities are "used and useful."
- I introduce Global Water's Green Billing program, and describe its economic and environmental benefits.
- I sponsor our study of the benefits of using renewable energy to power water recycling plants.
- I describe the benefits of consolidation by looking at our experience in taking over small, poorly designed water utilities, and how we were able to make dramatic improvements in these systems.
- I explain our innovative proposed rate design, which promotes conservation and creates substantial incentives for customers to conserve (i.e. reduce their usage).
- I present our proposed changes to service fees and tariffs.

## II. <u>The Global Utilities' infrastructure.</u>

### *A. Total Water Management.*

**Q. What is Global Water's approach to infrastructure?**

A. Whenever possible, we install regional infrastructure for water, wastewater, and recycled water based on our Total Water Management concept.

**Q. Why is this type of regional infrastructure so important?**

A. There are two core concepts that drive Global Water's belief in the importance of regional infrastructure:

- **Regional infrastructure promotes conservation.** To achieve significant conservation, appropriate infrastructure needs to be in place at the onset. It's just too expensive to rip up streets after the fact and install recycled water lines. In our newer service areas, we have achieved substantial reductions in groundwater use, as compared to other utilities, though the use of recycled water as part of our Total Water Management approach. But our older service areas do not have the opportunity to achieve these results; and in all likelihood, they never will. Infrastructure decisions made today will impact not just the current generation, but future generations to come.
- **Consider long-term costs.** Infrastructure decisions must include consideration not only of the up-front costs, but the long-term operations and maintenance costs. Up-front costs are the costs of putting infrastructure in the ground today. But infrastructure decisions made today often have a large impact on future operating and maintenance costs. These long-term costs are ultimately passed on to customers in rates; so it is important to consider long-term costs in making infrastructure decisions. Typically, developers consider only the up-front costs of infrastructure – because they aren't responsible for the long-term costs. That's a rational decision on their part – but it leads to poor results in the long term for customers. That's why developers shouldn't be allowed to control infrastructure decisions as they often do today. Small utilities often make the same decision to consider only up-front costs. In their case, it's because they often lack the access to capital to build anything more than the bare minimum. But again, it's the

customers that suffer in the long term. This is one of many reasons that consolidation of Arizona's many small utilities is a good idea.

**Q. You mentioned Total Water Management. What is it?**

A. Total Water Management is our philosophy of resource management. Its core concept is the use of recycled water to reduce reliance on groundwater, surface water or other potable water sources. It is a way that we can grow and maintain our quality of life while living within our means in terms of water resources. It also recognizes that new sources of water (the "next bucket" of water) are becoming ever-more expensive. There are supply-side options available, such as desalination, but they are very expensive, and they are also very energy intensive. The same goes for moving water from some distant source to Arizona. The least expensive option for the "next bucket" is recycled water.

Total water management also emphasizes responsible use of all sources of water. For example, in new service areas, the Global Utilities require developers to install desert landscaping to a great extent, with strict limits on the use of turf even though recycled water is available for irrigation.

More information about Total Water Management can be found in our book, *Total Water Management: Resource Conservation in the Face of Population Growth and Water Scarcity,* which can be found at http://www.gwresources.com/pdf/twm.pdf

**Q. How does Total Water Management relate to regional infrastructure?**

A. We have always said that water conservation is not inexpensive. The infrastructure needed for Total Water Management has a higher up-front cost than traditional systems. Designing infrastructure on a regional basis allows us to design facilities of optimal size to

maximize economies of scale as a means of offsetting these costs. Building Total Water Management on a small scale would simply be cost-prohibitive.

**Q. You also mentioned the differences between old and new systems.**

A. Yes. In old systems (i.e. systems installed before Total Water Management), customers use substantially more water. For example, in our earliest developments in Maricopa, all of the water is supplied by the potable water system, regardless of its end use. As a result, in 2008, in Rancho El Dorado Phases I and II, 62,196,236[1] gallons of ground water were supplied for the purposes of common area irrigation – or 1,909 gallons per dwelling unit per month. If we look at Province, one of our newer areas where recycled water is used for common area irrigation, a total of 157 gallons per dwelling unit per month of potable water is used. So by providing recycled water under the Total Water Management practice, we save 1,752 gallons per dwelling unit per month. Over 16,500 connections[2] that is 346,896,000 gallons per year.

Another example involves Valencia Water Company – Town Division. There we see usage 10,573 gallons per dwelling unit per month[3]; compared to 9,038 gallons per month per dwelling unit overall in Maricopa (including the old and new infrastructure areas). That's a savings of 1,535 gallons per dwelling unit per month. In Maricopa, at say 16,500 connections, that represents a savings of 25,328,000 gallons per month or 303,930,000 gallons per year.

In both cases, we see significantly more usage in the older systems. That greater usage will continue indefinitely into the future. Again, the infrastructure choices we make now have long-lasting impacts.

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[1] Data in this section derived from billing records for the period Jan 2008 to Dec 2008.
[2] As of 31 December 2008, Santa Cruz had 16,668 connections.
[3] Data in this section derived from 2008 Water Use Data Sheets.

**Q. But can't customers just use less?**

A. The customers in our older service areas aren't any less conservation minded than the customers in our newer areas. The real impact is that they are required to use potable water for irrigation purposes. They use more as an overall average because they don't have the infrastructure they need to conserve.

There are some things that customers can do to use less. I have a list later in this testimony. But to achieve really significant reductions, the necessary infrastructure needs to be in place.

**Q. Have other government bodies recognized the concepts behind Total Water Management?**

A. Yes. Both ADWR and ADEQ have been very supportive of our infrastructure and water conservation practices. In addition, Global Water's Total Water Management philosophy was a major reason the Cities of Maricopa and Casa Grande chose to enter into Public Private Partnership (P3) agreements with Global Water. Further, it is a key element of our agreement to collaboratively manage water resources with the Town of Buckeye.

The concepts of Total Water Management are also reflected in the Pinal County Water Resources Comprehensive Plan. This plan is a policy instrument designed to ensure water scarcity is managed properly and does not become a crisis. Pinal County has adopted the following policies:

> OBJECTIVE W1: Promote use of renewable water supplies such as effluent [recycled water], surface water and CAP water whenever feasible for all existing and future development.

- Policy W1.1 Encourage compliance with Arizona Department of Water Resources programs, rules and regulations for new developments.
- Policy W1.2 Encourage use of renewable resources for all water uses, including municipal, industrial and agricultural.
- Policy W1.3 Encourage water providers to become designated by ADWR.
- Policy W1.4 Encourage construction of water treatment facilities for water providers to utilize renewable water supplies.
- Policy W1.5 Encourage construction of wastewater treatment facilities to sufficient standards to maximize potential reuse of treated effluent [recycled water].
- Policy W1.6 Encourage compliance with Arizona Department of Environmental Quality for reuse of treated effluent [recycled water].
- Policy W1.7 Encourage the use of gray water for private residential use as specified by ADEQ.

These policies, with their emphasis on recycled water ("treated effluent") and conservation, closely match our Total Water Management approach.

***B. Regional Infrastructure.***

**Q. Will regional planning yield additional benefits like economies of scale?**

A. Yes. There are many practical benefits. For example:

- **Economies of Scale.** Planning for facilities on a region-wide basis, versus a development-to-development basis will allow Global Utilities to coordinate the timing of constructing these facilities as development fills in throughout a certain area. As a result, the costs are shared by multiple developments for these regional facilities. Since the costs are spread across multiple developments and because the

facilities themselves are more efficient when designed as part of a regional plan, economies of scale can be achieved. Regional planning also provides the following additional benefits to water treatment and production, distribution and collection, and wastewater treatment

- **Phasing.** Global Utilities can deploy water treatment infrastructure in a phased approach to meet demand. Surface water treatment facilities can also be deployed in a similar manner.
- **Avoiding duplication and the excavation of infrastructure to support growth.** At an individual development scale, servicing is accomplished by providing sewer mains in the order of 6" diameter and water mains on the order of 4" diameter. The Commission already anticipates the benefits of larger water infrastructure in AAC R14-2-406 (H)(2).[4] The requirements for line sizes increase with the ultimate build-out and demand. It is Global's policy to employ 16" water mains and 24" sewer mains on section line alignments. Trunk mains and transmission lines are larger still (36" to 48" for sewer trunk mains and 24" for water transmission lines). The incremental costs of initial installation are small compared with the future benefit conveyed.[5] By choosing to install regional infrastructure now, we save the ratepayers the future cost and disruption of having to exhume/replace or replicate installed infrastructure. This reduces the number of miles of in-ground infrastructure and reduces the costs associated with operating and maintaining it.

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[4] R14-2-406. Main Extension Agreements
H. The size, design, type and quality of materials of the system, installed under this rule location in the ground and the manner of installation, shall be specified by the Company, and shall be in accord with the requirements of the Commission or other public agencies having authority therein. The Company may install main extensions of any diameter meeting the requirements of the Commission or any other public agencies having authority over the construction and operation of the water system and mains, except individual main extensions, shall comply with and conform to the following minimum specifications:
1. 150 p.s.i. working pressure rating and
2. 6" standard diameter.

[5] The cost of excavating and replacing or duplicating the infrastructure in the future.

The cost difference between installing say a 16" main versus a 6" main really is insignificant when considering material alone. By enforcing a regional plan where all development is considered, substantial savings are made in the requirement for retrofitting or duplicating existing pipeline infrastructure. For instance, Palo Verde installs sewer trunk mains in the order of 48" in diameter –larger than required for any single development but prudently installed in anticipation of short term growth.

- **Sharing alignments.** Palo Verde can install recycled water lines and sewer lines along the same alignments to save construction costs.
- **Gravity Flow.** Regional planning maximizes the gravity potential for wastewater collections systems – larger pipes at deeper depth will eliminate or at least substantially reduce the number of lift stations scattered throughout the service area. This saves on power costs, equipment costs, odor control costs and labor.
- **No surprised neighbors.** Regional planning also eliminates the NIMBY (not in my backyard) problem associated with the siting of water reclamation facilities. By defining where and when treatment facilities are located before development begins, physical setbacks can be assured, and appropriate development plans made to reduce direct abutment of treatment facilities to residential areas.
- **Recycled Water.** Palo Verde can design and construct water reclamation facilities to produce Class A+ recycled water that can then be reused for several purposes. Because water must be treated and used locally to minimize transmission costs, we do not use massive 100+ million gallon per day (MGD) facilities to treat wastewater. Were we to do that, the costs of transporting the water back for use would be prohibitive. Rather, by using a "distributed" model of infrastructure deployment, water transmission costs are minimized and the water is "made where it is used". Notwithstanding, there are efficiencies that are gained through larger scale facilities – efficiencies in power and equipment – that exist at the 1 MGD day point over a 250,000 gallon per day facility. At Global Water we combine the

efficiency of medium-scale plants (1 to 10 MGD) with the water transmission efficiency of localized treatment facilities.

- **Standardization.** Regional planning also naturally leads to standardization – of treatment systems, of equipment, of training, of expertise. All of these have a direct impact on the efficient operations of the utility.
- **No pavement cuts.** Water, wastewater and recycled water recycled water lines can be installed before roads are paved. This is an important reason why water recycling becomes much more difficult if recycling infrastructure is not built at the onset.

**Q. But isn't installing regionally-scaled infrastructure more expensive initially?**

A. Yes. There's no doubt that installing a 16 inch water main or a 48 inch sewer main are more expensive than installing a 4 inch water main or a 6 inch sewer. But considering only up-front costs is a disservice to customers because it ignores long-term costs, as well as public interest considerations, such as water conservation. Two elements should be considered in deciding whether an infrastructure decision was prudent:

- What the goal of public utility infrastructure is; and
- The total effect of infrastructure decisions.

The public interest requires considering more than just the up-front costs of infrastructure. To make infrastructure decisions, first you have to know what your goal is. If the goal is conserving resources and providing utility service in a safe, reliable, and affordable manner then it makes sense to ensure that we can deliver it to all areas in the most economical way possible. The infrastructure decisions we make today can either allow us the opportunity to manage water scarcity in the future, or constrain future generations to high water use *in*

*perpetuity* – and the ability of a utility to provide reliable and affordable service in those scenarios is radically different.

Moreover, the total effect of our infrastructure choices must be considered – both up front costs and long term costs. By consolidating responsibility for utility service the Commission can ensure that economies of scale and scope are considered. Global Water believes that the tendency of small water and wastewater companies to rely on developer-emplaced infrastructure (designed and built to serve only the developer's community) contradicts this goal.

A developer would rationally choose to emplace the smallest lines his development needs – ignoring the long-term demands of the surrounding areas. The Commission is very familiar with small utilities that have numerous service lines to areas, each line built by a developer for his own development, the result being utilities are forced to maintain several sets of lines in the same geographic area.

**Q. Can you explain that further?**

A. Let's look at two examples: Global Water - Santa Cruz Water Company (Santa Cruz) and Valencia Water Company (Valencia). Both of these utilities were at the vanguard of growth and expansion from the period of 2003 to 2007. One utility, Santa Cruz, together with its sister utility, Palo Verde, provides regionally planned and integrated infrastructure – including wastewater and recycled water. The other, Valencia, took a back seat in the planning process, and allowed developers to install only the infrastructure required for their specific developments.

The result is that Valencia is a fragmented, uncoordinated system that is subject to increased operating costs and higher water consumption. Further, all water – regardless of

its final disposition or use – is required to be treated for arsenic removal. For example, water that is used to irrigate landscaping or wash cars goes through the same expensive arsenic treatment process as water intended for human consumption. The distribution system is an amalgamation of individual systems that often fight each other in maintaining pressure. Indeed, in some cases, water is pumped four times[6] before it gets to the customer. In the Santa Cruz service area, large regionally scaled distribution centers consolidate treatment and distribution.

The differences today are dramatic. However, those differences will increase annually from now on. The infrastructure decisions made at the start of the growth period have eliminated the opportunity for Valencia to implement a consolidated water conservation and management program.

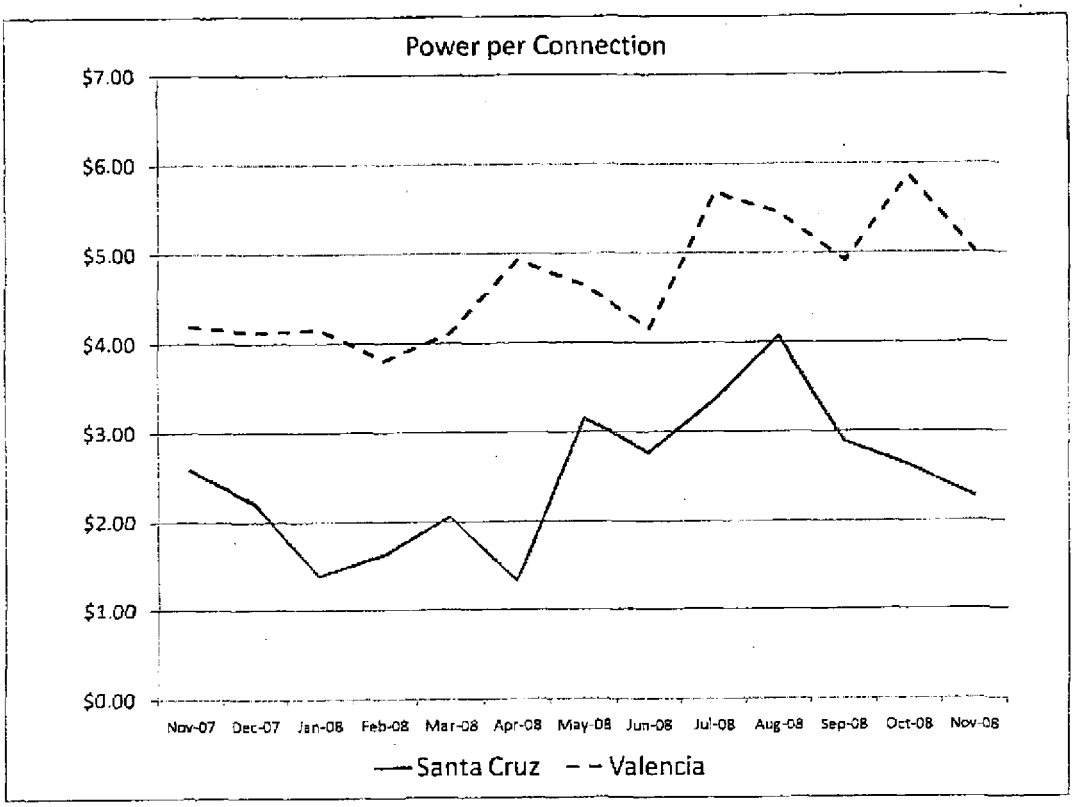
**Q. Can you provide specific examples of the long-run differences between those utilities?**

A. Certainly. The following graphs show the dramatic impact that regional planning can have on the long-term health of a utility.

The following graph shows the differences in power costs associated with Valencia Water Company – Town Division and Global Water – Santa Cruz Water Company, normalized to a per-connection metric. Due to the many EPDS[7] points (six to serve Valencia's 5,400 connections versus one to service Santa Cruz's 16,500 connections), many more pumps of lower capacity are operated to meet the demand.

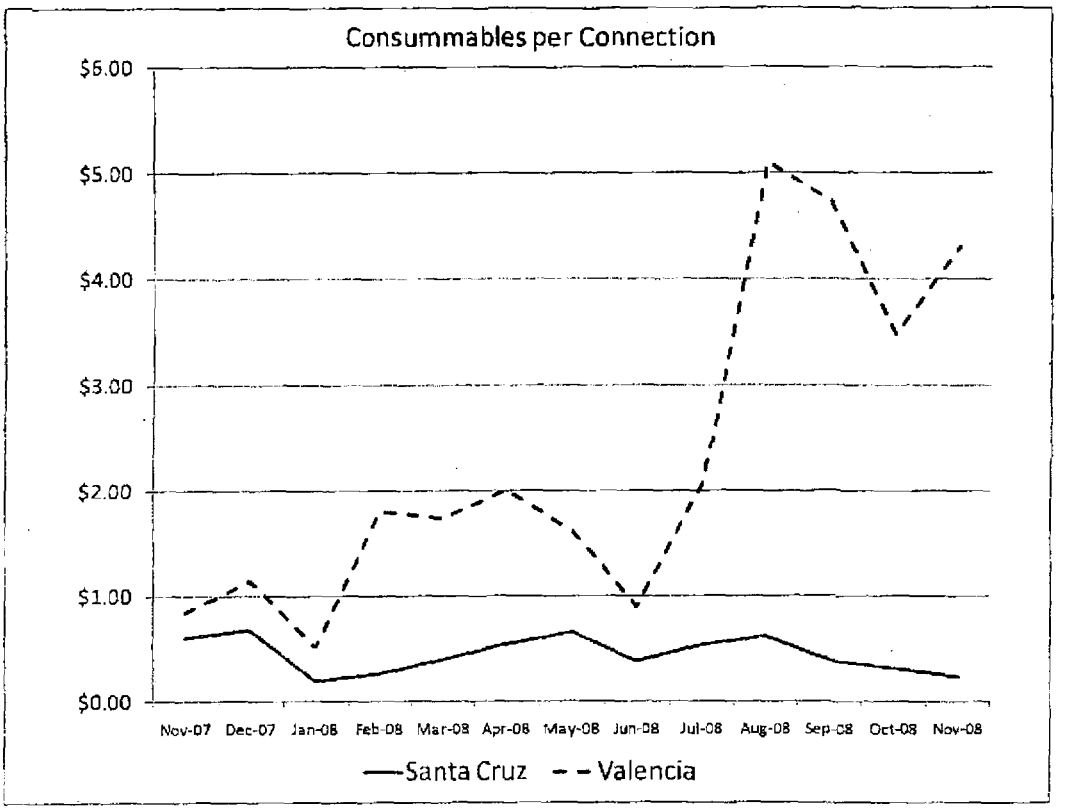
[6] Water must be removed from the ground, pumped to one storage facility, then pumped to another storage facility before it is finally pumped out the customer.

[7] EPDS = Entry Point to the Distribution System. An EPDS is the point at which water enters the distribution system and must meet the requirements of the Safe Drinking Water Act.



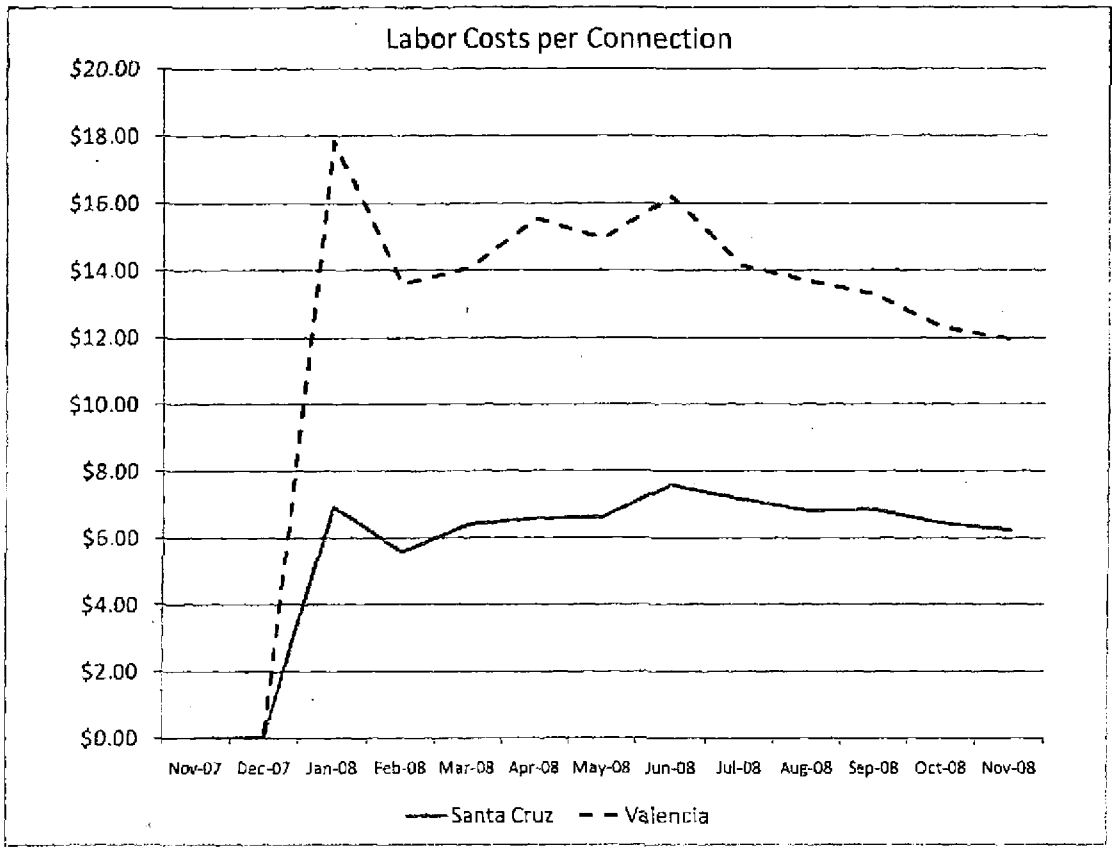

As we know, power costs are escalating in Arizona and across the country. The fact that Valencia's power consumption per connection is twice that of Santa Cruz means that the customers will face continuing pressure to compensate for those increases.

The effect is equally apparent when we consider consumables (chemicals, supplies, treatment media). The following graph compares the consumables costs per connection for Valencia and Santa Cruz. *Due to Valencia's reliance on ArsenXnp as a treatment methodology, and the fact that there are six treatment systems, the consumable costs are more than four times that of Santa Cruz, which uses blending as a means of achieving compliance with the arsenic MCL.*




One very interesting aspect of this graph is the large jump seen as the utility moved into the last half of 2008. This jump is due to the breakthrough of arsenic through the ArsenXnp media. This breakthrough required that the media be removed and regenerated at a very high cost.

Finally, the last graph (below) demonstrates that a regional approach not only saves water, power, and consumables, but has a dramatic impact on the labor costs associated with operating the utility. In this case, Valencia's labor costs are twice those costs experienced at Santa Cruz. This is unavoidable as a result of the prior owners' piecemeal approach to development.




**Q. Are the differences noticeable from a resource standpoint?**

A. Yes. If we look at the overall water consumption patterns for the period November 2007 to October 2008, *the average water consumption per dwelling unit in Valencia is 16.98% higher than in the Santa Cruz service area*[8]. That does not sound like a lot, but it represents 285,510,000 gallons of water over the course of a year in Santa Cruz. 16.98% is a massive difference and a permanent feature of the communities – Maricopa will always have lower consumption per dwelling unit.

[8] Average consumption in Valencia = 10,573 gallons per dwelling unit per month. Average consumption in Santa Cruz = 9,038 gallons per dwelling unit per month (data for the period December 2007 to December 2008). These figures include all consumption with the exception of construction water – a highly variable and non-permanent water use.

**Q. What are some other issues associated with non-regional infrastructure?**

A. The primary trade-offs in infrastructure decisions are not end-of-pipe quality. In all cases, ADEQ will require demonstration that the systems can meet the required quality. ADEQ, however, does not mandate efficiency.

For example, all wastewater treatment facilities will be driven to produce A+ recycled water under the requirement to demonstrate best available demonstrated control technology. All drinking water systems will be required to demonstrate compliance with the Safe Drinking Water Act (SDWA). The key differences between developer provided infrastructure and a regional approach to infrastructure will be the method through which the goal is achieved.

The primary trade off in infrastructure decisions is up-front capital costs versus long term operating costs and long term opportunities to effectuate conservation.

**Q. Please explain the Global Utilities' approach to reliability.**

A. Reliability is the probability that a system will perform its function when required. In order to increase reliability in the design/construction phase, a number of techniques are employed: redundancy (active and passive), inclusion of operational and design safety factors, relying on sufficient source water analyses etc.

In the case of a least-cost solution, it is not uncommon for active redundancy (that is, duplicated equipment on stand-by) to be eliminated in favor of a repair-by-replacement philosophy. When flows are significantly lower than design capacity, the impact of this choice is not immediately noticeable. Similarly, developing a design that is at the edge of the envelope in terms of reaction kinetics[9] (and thereby reducing the amount of tankage or

[9] Reaction kinetics describe the biological and chemical reactions that take place in a treatment system, and are described by mathematical relationships between various parameters.

size of pumps or size of blowers) will not have immediate impacts, but will significantly impact the operation of the system as it approaches the design flows. It is very common that least-cost solutions do not achieve their design flows. Mathematically from an individual component perspective they can be shown to work; in practice, however, they are effectively de-rated – in some cases by as much as 25% simply as a result of the bottlenecks designed into the system as a whole. In part, each system can be shown to be "designed" correctly. In operation, when interconnected to other systems, the result is that the overall project is limited.

The original Palo Verde Utilities Company 1.0 MGD water reclamation facility was constructed under the developer mentality, prior to Global Parent acquiring ownership of Palo Verde. In its early stages of operation, there was sufficient flexibility in the systems operations to allow for work-around solutions when failures occurred. As flows approached 0.75 MGD, that flexibility in operations had been consumed. The result was a plant that experienced several periods of instability. It was not until a Global-driven re-design and construction/commissioning of the second phase that stability was achieved.

As another example, West Maricopa Combine allowed developers to specify the scale and location of facilities. As a result, the Valencia Water Company – Town Division has 6 EPDS points and 6 treatment systems. The abdication of the utility in this case to the developer for technical specifications has resulted in an increased direct operating cost.

**Q. Please explain the Global Utilities' approach to Operational Availability.**

A. Operational Availability is the percentage of time that a system is able to perform its function. That is, when called upon to operate, the system or equipment correctly executes its job – or is available to perform its function. In systems with a high operational

availability, the designs allow for failures and thus provide secondary or redundant components, and allow for routine maintenance without shutting down systems.

In order to increase Operational Availability, active redundancy is a must. Not only in large process equipment (pumps, blowers etc), but at all single-points-of-failure. I have seen a 2.0 MGD state-of-the-art facility completely shut down, threatening a large-scale release of raw wastewater, due to the failure of a 120V single phase circuit breaker controlling power to a single pressure switch. Eliminating single-point-of-failure conditions is an expensive proposition – one with no direct impact on the "approvability" of the design, but with tremendous impact on the operation and efficiency of the system.

**Q. Please explain the Global Utilities approach to Maintainability.**

A. Maintainability is the ability to restore a system or component to operational status. In order to achieve a high level of maintainability, enough room must be provided around equipment (requiring larger buildings); equipment removal routes must be provided (increasing construction costs); pumping systems must be operated "on their curve" to eliminate cavitation and energy losses (requiring direct matching of pumps and system curves).[10] All of these cost additional dollars.

[10] The capacity and pressure needs of any system can be defined with the help of a graph called a system curve. Similarly the capacity vs. pressure variation graph for a particular pump defines its characteristic pump performance curve. Pump suppliers try to match the system curve supplied by the user with a pump curve that satisfies these needs as closely as possible. A pumping system operates where the pump curve and the system resistance curve intersect. The intersection of the two curves defines the operating point of both pump and process. However, it is impossible for one operating point to meet all desired operating conditions. For example, when the discharge valve is throttled, the system resistance curve shifts left and so does the operating point. Operating "off the curve" means that the pump's most efficient operating point is compromised.

The provision of a submersible pump with an unreliable removal mechanism, or one that fails when activated is a sign of poor material selection and design, and is a hallmark of developer provided infrastructure. Employing high quality stainless steel materials, and providing cranes to remove pumps is expensive, and is often "written out" of design specifications when one is only concerned with a least-cost solution. This is precisely the condition at the Groves and McDavid lift stations – provided by developers for the 387 Wastewater Improvement District. We subsequently acquired the 387 assets, and as a result we are stuck with the poorly-designed lift stations.

**Q. Please explain the Global Utilities approach to Control and Instrumentation.**

A. Instrumentation is expensive. Developing, testing and deploying advanced control systems based on the inputs of instrumentation is also expensive. As a result, developer-derived

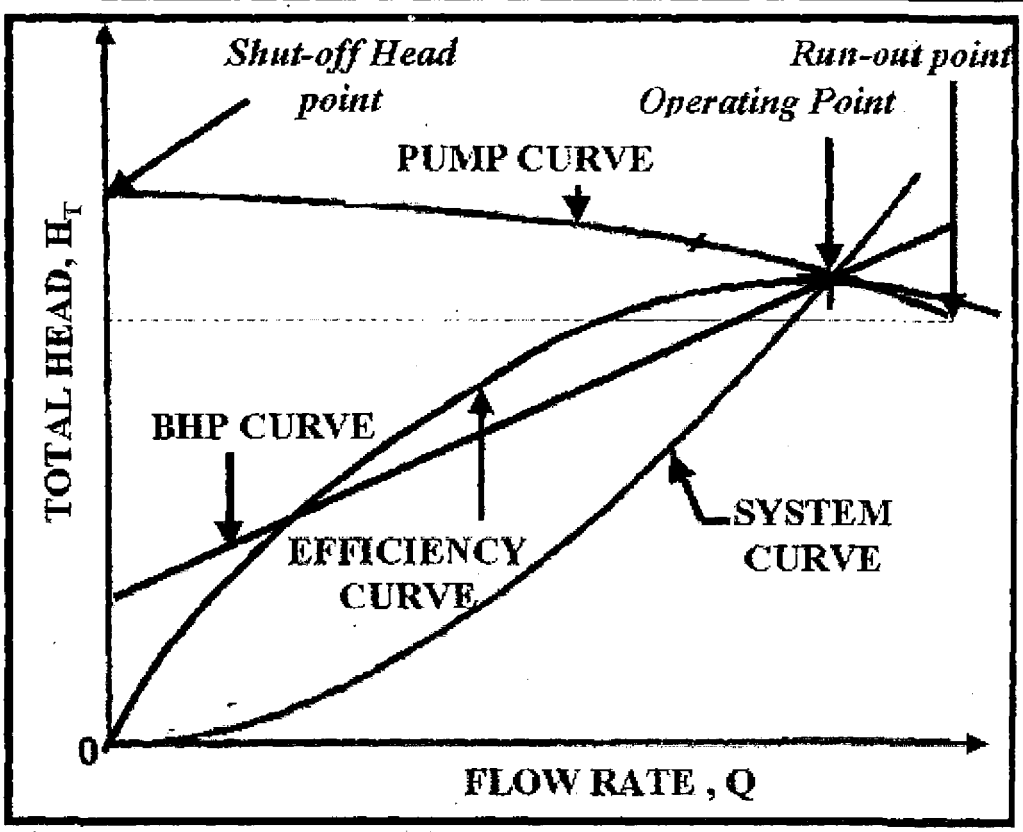



Figure D.01: Typical system and pump performance curves
Adapted from http://www.cheresources.com/centrifugalpumps5.shtml accessed 21 December 2008

systems typically lack any automation and control. Operators are forced to operate systems without direct feedback, and are not provided any information that can help them diagnose problems. All of this impacts the utility's efficiency and long term costs. Thus, although installing instrumentation is expense, in the long-term, it's worth it.

Further, SCADA systems designed to allow for automated/autonomous control and remote control are also expensive. Thus, developers do not install these systems when they control infrastructure decisions. But SCADA systems are a key to lowering operating cost and efficiently using employees.

**Q. Please explain how developers often approach efficiency.**

A. Very often, in pumping systems in particular, a pump is purposely driven off its curve to meet the needs of a system. Rather than allowing for variable frequency drives to maintain the pump on its curve, developers will use across-the-line starters. This has dramatic effects on the cost of power to run the system. In some systems, pumps are oversized and capacity control is achieved through throttling of discharge flows. This artificially increases the head (pressure) against which the pump operates and reduces flow. However, this strategy drives up power consumption because in effect one is operating at a higher pressure to decrease flows. A much more efficient (albeit expensive) way to effect this control is through variable speed drives where the speed of the pump is reduced to reduce flow. When such drives are used, reduced flow results in reduced power consumption.

Efficiency is also embodied in commonality of equipment. With various developers providing different systems with different components, commonality is lost. The utility is then burdened with knowing, operating and maintaining and supplying spares for a number of unique systems. This has direct impact on the efficiency of the operations staff.

In addition, as the developer will not be operating these systems, the amount of labor required to run them is discounted to zero – a fatal flaw in any design.

**Q. What does that mean from a physical infrastructure program?**

A. It means that the utility must take a proactive interest in the infrastructure deployment. But it also means that we must plan and deploy infrastructure that is designed for future use. The utility, which operates the infrastructure for the benefit of the consumer, cannot abdicate responsibility for the design and planning of those systems. *The utility must be in charge of the infrastructure from the very initial stages of design and planning.*

*C. Used and Useful.*

**Q. Does that mean that in some cases the infrastructure constructed may exceed the current operational need?**

A. Yes, there is a high potential for "regional infrastructure" to be beyond the current demand.

**Q. Should that plant then be disallowed, and not be considered used and useful?**

A. That's a penalty and a disincentive to regional planning and resource conservation. If the utility is being penalized for planning for the future, then logically the utility will not do it. The consequence would be more infrastructure decisions like those of WMC, 387 and other short-sighted utilities and the costs to the consumer will be higher – both from a dollar perspective and from a resource perspective, that is it will cost more and conserve less and will do so in perpetuity.

*We've always said that investment in conservation is not the cheapest alternative. However, if we are to ensure that the state's water resources are not overwhelmed by growth, these choices need to be made.*

**Q. What about the case where plant is constructed and no one shows up?**

A. That is an interesting conundrum. We all understand that as utilities we do not make growth happen, but only facilitate service to growth. *We must understand, however, that the decisions that we make today will set the stage for any water conservation activities in the future. That is: if we fail to make the correct decision today, we will eliminate the opportunity for conservation in the future.*

This was the primary concern which drove Global Water to create and utilize ICFAs – these allow our investors to receive some coverage of their carrying costs. As Mr. Hill and Mr. Rowell explain this exact conundrum exists in the Maricopa area. The "Southwest Area" of that region has over $32 million of plant that is unused. We built it because developers had final plat approval and had requested service under the ACC rules, the Commission itself ordered us to have that plant ready. No one foresaw a complete collapse of the housing market. But from a long-run, regional planning perspective that plant still makes sense. It wasn't built for a specific developer's plan – so when growth returns it will be able to meet its demand.

We believe that growth will return to the State. The living conditions are ideal and the demographic migration to warmer climes will continue. By having set our communities up for water conservation from an infrastructure perspective, that growth can be re-established without compromising water resources. Indeed, our communities will continue to serve as resource management icons. *Infrastructure is <u>the</u> investment in a sustainable future.*

**Q. What other considerations should the Commission undertake with respect to used and useful?**

A. I think it is important that the Commission support resource management and the planning and infrastructure deployment necessary to achieve it. It is also important that the

Commission understand that in most cases, this infrastructure was built in compliance with Commission orders.

I believe that the Commission must also understand the conditions that existed at the time infrastructure was deployed. Ultimately the benefits of Regional Planning should not be driven by developers' projections but on the requirement to economically achieve service. Infrastructure requirements are established early in the service delivery process. Planning, designing, permitting and constructing infrastructure is a time intensive process. Triggers for infrastructure are developed, and when reached infrastructure delivery is commenced. Those triggers can be internal or external.

There are a number of difficulties:

1. Builders within any development may be in vastly different stages of development at the time of request, thus adding to the unpredictability of the actual date of readiness for completed infrastructure.
2. Due to the variability of the time from application to a Decision, the Utility is not able to provide developers and builders with a "date certain" for provision of the service – developers know this, so often they request service years before houses are constructed, as they in parallel move through the development process, at a pace dictated largely by market conditions.
3. During the ACC review and sufficiency process, the Utility is continually pressed to determine the status of development in the proposed service area in order to allow staff to identify specific infrastructure and completion dates for permitting and construction approvals. This is done without regard to the inevitable variability in the market conditions that transpire during and after the CC&N process and to the individual readiness of the developers who requested service, which varies due to their own regulatory, financial, and permitting status.

4. The Commission issues a Decision with Ordering Paragraphs requiring specific completion dates for permitting and construction of these specific infrastructure projects.

As you can see, in many ways infrastructure timing decisions are not fully in the utility's control. We are obligated to provide the vehicle for service. The question is only was it "prudent" at the time?

**Q. How should prudency be defined?**

A. From a rate making perspective, the question is whether that infrastructure was prudently installed. Prudency can be defined[11] as:

A test used by regulators to evaluate the justification for particular corporate activities, used for cost of service and price cap regulation. The test checks whether an investment or outlay is reasonable based on principles of cost minimizing--thus promoting frugal behavior by managers. *It should not be an after-the fact evaluation*, but one that utilizes the information available at the time of investment or outlay decisions, including expectations about the future. *However, the test does assess what managers should have known and should have considered when they made the decision in question.*

The Commission's rules also define "prudently invested" as:

1. "Prudently invested" -- Investments which under ordinary circumstances would be deemed reasonable and not dishonest or obviously wasteful. All investments shall be presumed to have been prudently made, and such presumptions may be set aside only by clear and convincing evidence that such investments were imprudent,

[11] http://www.regulationbodyofknowledge.org/glossary/define/Prudency/

*when viewed in the light of all relevant conditions known or which in the exercise of reasonable judgment should have been known, at the time such investments were made.*

(Arizona Administrative Code, A.A.C. R14-2-103.A.3.l.)(emphasis added)

Thus, the conditions that existed at the time of the decision to implement the infrastructure are the parameters under which the decision should be evaluated.

**Q. What about facilities that the Commission specifically orders the utility to build by specific dates?**

A. Such facilities are automatically prudent. It is always "reasonable" to comply with Commission orders.

**Q. Are there standard approaches to recognize additional capacity as a benefit for the utility's customers?**

A. Yes. In "*The Pig in the Python: is Lumpy Capacity Investment Used and Useful?*"[12], the premise is made that for electric utilities:

> A utility's investment in seemingly excess capacity confers an immediate option on consumers, an option having substantial economic value. In that sense, excess capacity is a capital investment that not only is currently used by the utility, but also is currently useful to consumers. Excess capacity is a form of insurance for consumers to protect them when demand unexpectedly surges, supply unexpectedly collapses, or both occur simultaneously.

Further, this article also finds direct benefit in additional capacity:

> Although at first glance it may appear otherwise, the avoidance of capacity shortages is a benefit not different in principle from a direct financial benefit, such as fuel-cost savings. Consumers clearly benefit if enough additional capacity is provided to reduce the risk of shortages, because shortages harm consumers. Provision against risk is a very tangible product, and in some measure it is bought and sold in a market at prices that are clearly observable. That is precisely the task that the insurance industry performs.

[12]The Pig in the Python: is Lumpy Capacity Investment Used and Useful? William J. Baumol, J. Gregory Sidak, Energy Law Journal, Vol. 23, pp. 383-399, 2002

**Q. Is the issue especially pronounced in the water industry?**

A. Yes. Water and Wastewater utilities are subject to a harsher reality of used and useful than are electric utilities. Our products cannot be transported over vast distances; there is no "spot market" through which one may acquire capacity on an interim basis; there is no hedge against a deflating housing market – capacity cannot be shifted elsewhere.

**Q. What does that mean?**

A. It means that we in the water and wastewater industry must always have physical capacity available – we can't go get it from someone else. Our options are wholly limited by the infrastructure we have installed.

**Q. Based on these standards, is the plant reflected in the Global Utilities' balance sheet "used and useful"?**

A. Yes. It should be noted however, the Global Utilities are voluntarily foregoing the request of (for this case) more than $32 million in plant from the rate bases of Palo Verde and Santa Cruz. This plant was built for Palo Verde's and Santa Cruz's Southwest Service Area. It includes Palo Verde's Southwest Water Reclamation Facility and Santa Cruz's Southwest Water Treatment and Distribution Plant (Terrazzo). Mr. Hill and Mr. Rowell discuss the removal of this plant in their testimony.

## III. <u>Global Water's green billing system.</u>

**Q. What is Global Water's green billing system?**

A. First and foremost, Global Green Billing is a conservation tool. It provides the necessary near-real-time data required for the utility to effectively manage its water resources:

- Leak detection and lost water reduction
- Pumped to Billed ratio monitoring

More importantly from a consumer perspective, Global Green Billing provides the feedback necessary for consumers to manage their consumption by allowing access to data at anytime during the month. So a customer can determine their usage against the Rebate Threshold volume at any time, and make an adjustment to receive the volumetric rebate.

By combining advanced meters, communications systems, and computer-based customer care, Global Green Billing has the ancillary benefits of lower energy (gasoline) use and lower paper use. It also reduces the long term costs of meter-reading and billing.

**Q. Please describe the smart meters.**

A. We use advanced wireless meters from Itron and Aclara. These meters transmit water use information from the meter to Global Water's billing system multiple times per day. This eliminates the need for a meter reader to drive around checking meters. This means a smaller carbon footprint, lower energy costs for gasoline, and reduced labor costs as well. In addition, because the billing information is updated frequently, our computers can detect unusual spikes in usage, such as when a water pipe breaks in a customer's home or business.

**Q. Please describe the computer-based billing aspect of green billing.**

A. Not all customers need, or want, a paper bill.[13] We provide a number of electronic options for customers to receive and pay their bill. Customers can review their bill, and make payments, on the Global Water web-site. In addition, customers can chose automatic deductions to pay their bills. And we also have kiosks with computers customers can use to pay their bills.

[13] Note that Global still provides monthly billing in accordance with AAC R14-2-409 (A) (1)

**Q. Please review the benefits of green billing.**

A. Green billing lowers energy use, lowers costs (labor and fuel), and reduces use of paper. Similar to Total Water Management, there are higher up-front costs to install the smart meters and the electronic billing systems, but long term costs are lower.

Global Green Billing technologies have been combined to form an efficient billing and reporting system. This platform has allowed for tighter control of operational expenses and has increased the level of service through a number of capabilities:

- Automated Meter Reading (AMR) improves the quality of data while reducing expenses and environmental impact
- Customer Information System (CIS) streamlines billing and remittance operations
- Integrated Voice Response (IVR) system improves collections and reduces bad debt
- A paperless environment reduces costs
- Real-time data access enhances the customer experience
- Automation simplifies customers payment and remittance operations
- An array of reporting options provides timely, customized information on customers, consumption and operations
- Enhancing conservation by providing consumer feedback on consumption
- Reducing lost water through leak detection

## IV. Renewable Energy.

**Q. Have you prepared an analysis of the benefits of using renewable energy at water recycling facilities?**

A. Yes. The study is entitled "The Energy and Water Efficiency Benefits of Distributed Recycled Water Production Facilities" (Attachment GSS-1).

**Q. Please summarize your conclusions.**

A. Recycling water achieves the lowest power per gallon metric from the perspective of making water. So, the use of recycled water is, itself, a "demand side management" tool because it is less energy intensive than potable water treatment. But even so, power is a significant expense in the recycling process, and power expense is subject to large volatility. Water recycling facilities can therefore benefit from renewable energy projects. Such projects can reduce purchased power expense and also increase reliability.

**Q. Are the Global Utilities currently considering renewable energy projects?**

A. Yes. The project is presently in the design-build process with grading scheduled to start in mid-February 2009.

**Q. What do the Global Utilities request concerning renewable energy?**

A. As detailed in Mr. Moe's testimony, the Global Utilities request a Distributed Renewable Energy Recovery Tariff to fund renewable energy projects.

## V. Consolidation and small utility infrastructure.

**Q. Have you been involved in the consolidation or acquisition of small utilities by larger utilities?**

A. Yes, both at Algonquin and now at Global Water.

**Q. What problems do small utilities create?**

A. They present a number of problems. They sometimes fail and require an emergency takeover by an "interim manager." We have met this need several times, as have other large water utilities in Arizona. Even when they don't fail, they often lack management know-how and technical expertise. And often they lack funds, forcing them to rely on developers to pay for infrastructure. I have already detailed the negative long-term effects of this approach, including specific examples involving Valencia Water Company.

Mr. Hill and Mr. Rowell also discuss the problems of small water companies, and the benefits of consolidation. So I will limit my remarks to infrastructure-related issues of small water companies.

**Q. What infrastructure problems do small water companies have?**

A. Small water companies often have poor existing infrastructure. This is a combination of poor infrastructure choices when projects are started, combined with poor maintenance.

**Q. Can you provide an example?**

A. Yes, Willow Valley Water Company is a good example. Global Water acquired this utility in 2006 as part of the West Maricopa Combine transaction.

**Q. Can you describe the Willow Valley system?**

A. Yes. The Willow Valley system serves 1,500 connections in an area south of Bullhead City on the banks of the Colorado River. The system uses groundwater to supply its customers. Much of the system is decades old, in particular the distribution system.

The groundwater in the area suffers from elevated levels of iron and manganese that, although they do not have Primary Drinking Water Standards under the Safe Drinking Water Act, they are considered secondary contaminants for their aesthetic impacts.

**Q. Can you describe what those aesthetic impacts are?**

A. They take the form of:

- Brown or "Tea" colored water;
- Iron deposits in the water;
- Clothing stains in laundry; and
- Build-up of deposits on heating elements and cooling systems.

Brown or "Tea" colored water is common in the Mohave Valley area and is an aesthetic condition that is caused by the increased amount of iron and manganese in the source water. Iron and manganese are two inorganic constituents that are commonly found in drinking water at low concentration levels. In the Mohave Valley area, unique hydrogeologic conditions make the source water susceptible to increased concentration levels of both iron and manganese.

"Brown" or "Tea" colored water can interfere with most cleaning tasks, from laundering and dishwashing to bathing and personal grooming. Clothes laundered in brown water may stain, particularly if additional household bleach or laundry soap with bleach is used. Additionally, pool water may become browner with the addition of chlorine.

**Q. So the addition of chlorine exacerbates the color issue?**

A. Yes. In the presence of an oxidizer such as chlorine, iron and manganese react to produce a higher level of color, and precipitate or produce sediment. Chlorine, however, is a vital component of system safety, ensuring that the water is free from microbiological contaminants. The balance between microbiological contamination and aesthetic quality is often tipped in favor of the protection provided by disinfection.

**Q. Have the customers ever complained about the water aesthetics?**

A. Most certainly. Before Global Water purchased Willow Valley, the utility had assuaged customers in the past through issuing chemicals to customers for laundry use and reducing the residual chlorine levels. They also flushed the system routinely to try to reduce the color by moving the water out of the system.

**Q. How has Global Water differed?**

A. Well, we certainly could not reduce the residual chlorine. In fact, we immediately increased it after the acquisition in response to positive total coliform results in the distribution system. The additional chlorine caused further oxidation and precipitation of the iron and manganese making the water darker. However, the safety benefits of chlorination far outweighed the aesthetic issues.

Once stabilized from a microbiological standpoint, we worked with ADEQ to develop a new treatment system that would effectively reduce iron and manganese, and we held public meetings on the issue and the rectification plan. Customer updates were regularly provided to customers through billing inserts and via our website.

**Q. Have those treatment systems been completed?**

A. Yes. Iron and manganese levels have been drastically reduced and the water quality improved considerably:

| Constituent | Previous levels (mg/L) | New levels after treatment (mg/L) | Secondary Standard[14] (mg/L) |
|---|---|---|---|
| Iron | 1.17 to 1.32 | < 0.05 | 0.3 |
| Manganese | 1.18 to 1.24 | < 0.02 | 0.05 |

**Q. Are there other operational issues related to iron and manganese?**

A. Yes. After years of neglect, the distribution system piping is accreted with scale and deposits. Some of those deposits re-dissolve into the water and re-color the water. In addition, the deposits reduce the cross sectional area of the piping, restricting flow and pressure. Further, the deposits reduce the accuracy of the meters by clogging and interfering with the mechanisms.

**Q. What has Global done in response to these issues?**

A. We continue to flush routinely. Plus we are embarking on a meter replacement program to improve accuracy. We embarked on an aggressive and continuous public outreach campaign. We hosted two town-hall meetings, we created a separate component on our website for customers, we sent special notices in bills, and we made sure that our Willow Valley employees fully understood the issues and served as ambassadors to the community. Copies of our bill inserts, website postings, town hall notice are included as Attachment GSS-2.

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[14] National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects or aesthetic effects in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply.

**Q. What are some of the other unique issues associated with this service area?**

A. The system has been neglected and needs major renovation. Much of the distribution system piping is located in customers' back yards, and was not professionally installed. This means there are a number of different piping materials employed, and in some cases the pipe is not even pressure rated material.

We continue to repair these issues as we get time and resources, or if they result in a system failure. Ultimately a large-scale distribution system replacement plan will be required.

**Q. What improvements have been made to the Willow Valley system since the purchase by Global Water?**

A. Willow Valley completed the following projects:

- Installed new chlorine injection systems that help ensure water is properly disinfected.
- Installed auto-dialer alarm systems that notify our staff in the event there are operational issues at our facilities. This helps prevent service outages.
- Identified all existing water lines and performed Hydraulic Modeling to establish distribution system performance. This assists in planning system improvements to maximize benefits to the system as a whole.
- Installed automatic flushing devices and operate an active flushing program to reduce the built up iron and manganese accretion in the water pipelines.
- Completed the Unit 17 Water Distribution Center (WDC) Improvement Project. The project included a new iron and manganese removal system along with a new water source, and complete electrical/mechanical upgrades. These new facilities have improved water clarity and reliability of service.
- Completed the King Street WDC Improvement Project. The project included general site improvements and upgrades to the existing iron and manganese removal system

and electrical/mechanical systems. The site will be used as support for the Unit 17 WDC in the King Street area and has also improved water clarity and reliability of service.

- Completed the Cimmaron WDC Improvement Project. The project included complete site improvements and upgrades to the existing iron and manganese removal systems and electrical/mechanical systems. These rehabilitated facilities will improve water clarity and service reliability for the Cimmaron Development.
- Installed new control valves in strategic areas as to improve our ability to re-direct water, isolate line breaks, and reduce the number of customers affected by failures.

In addition, Willow Valley will continue ongoing Waterline Distribution System Projects as needed. Willow Valley will continue to install new water mains, water line loops, and install new valves where needed to improve water pressure and service reliability.

**Q. What has been the total cost of these system improvements for Willow Valley?**

A. To date, Global Water has invested $2,102,980 in improving water quality through new treatment systems and infrastructure upgrades.

## VI. <u>Rate Design.</u>

**Q. What rate design are you proposing for Global Water – Santa Cruz Water Company ("Santa Cruz")?**

A. We are proposing what we call "Rebate Threshold Rates". This rate structure incorporates the following elements:

1. A volumetric rebate,
2. Six volumetric rate tiers instead of three, and
3. Revenue decoupling via increased basic monthly service charge.

**Q. Can you please describe the general provisions of the Rebate Threshold Rates?**

A. The Rebate Threshold Rate (RTR) structure is a conservation-incenting rate design that builds off of the three-tiered rate structure commonly approved by the Commission. An RTR structure truly drives conservation into water consumption and rewards customers for conservation. People are motivated to conserve for a number of different reasons, a desire to reduce resource consumption, a desire to conserve for future generations, a desire to be more socially and environmentally conscious, and to save money. While the majority of the reasons to conserve are esoteric, a powerful tangible reason is a desire to reduce costs.

Global Water works to strengthen people's desire to conserve for altruistic reasons. However, we recognize that at the household level, decisions are driven primarily on economic factors. We derived the RTR to reflect these realities.

In order to do that, we include a number of innovative structures:

1. A volumetric rebate;
2. Six volumetric tiers instead of three; and
3. Revenue decoupling via increased minimum charge.

This type of rate design meets the three core goals of revenue neutrality, equity and conservation. With this design, lower use results in lower consumer costs while ensuring the utility's finances remain sound. Further, it places the ultimate control of costs well within the management capabilities of the consumer.

**Q. Can you please explain these elements and the significance of each as it relates to incenting conservation?**

A. Certainly., I will explain them in the following order (1) volumetric rebate; (2) six tiers system; (3) increased minimum charge.

**Q. Please explain the Volumetric Rebate.**

A. The volumetric rebate allows for residential customers who achieve real, immediate reductions in water consumption to realize an immediate reduction in their volumetric charges. This process works by establishing a Rebate Threshold volume. Any time a customer achieves a consumption level below that of the Rebate Threshold, that customer is entitled to receive a reduction in volumetric charges (commodity charges). That reduction is calculated for each utility and ranges from 45% to 65%.

In the design presented in this application, we have established the Rebate Threshold as 90% of the average residential consumption[15] for the period November 2007 to October 2008. We believe that this represents a realistic goal, and indeed many of the residential customers would qualify for this rebate in the Global Utilities service areas.

We anticipate that the Rebate Threshold would remain static between rate applications, and allow people sufficient time to develop personal water management techniques and practices to maximize their benefit. Global Water would also continue to provide positive feedback on a customer's attainment of the Rebate Threshold through information contained in the bill, as well as providing best management practices for customers to employ to attain the Rebate Threshold.

**Q. Please explain the proposed six-tiered rate design.**

A. Complimenting the Volumetric Rebate, the six-tier rate design allows for customers to manipulate their usage, even if they are not below the Rebate Threshold and still achieve meaningful cost reductions.

[15] The Rebate Threshold consumption is the arithmetic average of the residential consumption, rounded to the nearest 100 gallons, plus 1.

While tier design is usually subjective, *the Global six-tired rate design allows for more granularity between tiers. This allows customers to manage their own usage to minimize their costs.*

In a three tier design, tiers are typically established with levels such as:

0 – 3000 gallons

3001 – 10,000 gallons

10,001 and greater

The goal of the inverted tier rate is sound policy. The downside is that in limiting rate design to three tiers, those tiers are by necessity broad, limiting the ability for customers to effect meaningful cost savings. *This in turn means that customers have fewer opportunities to manage themselves to a lower tier. The result is that there are fewer opportunities for customers to realize a true cost saving, and hence the incentive to conserve wanes.*

**Q. How is a six-tier system different?**

A. *With a six-tier system, with the tiers established across what would be effective thresholds, the customer has an opportunity, through active management, to drive his or her consumption into a lower tier, and receive the benefit of the lower rate.* Also with a six-tier system, finer modifications to rates can be achieved, saving a customer money, and reinforcing the conservation message. Under these circumstances *the customer has greater control over his or her billing – they can make small changes and move to a lower tier, and therefore has greater control over his or her costs.*

**Q. Please explain the proposed monthly charge.**

A. The monthly charge allows the utility to effect meaningful, measurable and repeatable resource conservation without the implosion of utility revenue. Historically, support for conservation in the water utility business has been suspect. The utility knows that by incenting its customers to use less, there is a real chance of revenue reduction, and even potentially a conflict with used and useful doctrines as infrastructure may be seen as "unnecessary" in the context of a reduced demand.

Accordingly, to achieve conservation goals, we must break the cycle of selling more water. We already know that water conservation is not inexpensive from an infrastructure standpoint. By allowing for the recovery of fixed costs with a bias toward the monthly minimum, we can achieve both goals. Clearly, if the bias is toward 100% cost recovery via monthly minimum charges and no increasing commodity rate, there is no incentive to conserve. Conversely, biasing rate structures to recover all costs via the commodity rate creates a strong economic disincentive for the utility to promote water conservation. By establishing a reasonable apportionment of costs to the monthly minimum and the commodity costs, both goals are achieved.

**Q. Please explain Santa Cruz's proposed rate structure.**

A.. Santa Cruz proposes the following rate structure[16]:

**Base Rate:**

| Meter Size (inches) | Monthly Fee |
|---|---|
| 5/8 | $32.68 |
| ¾ | $32.68 |
| 1 | $81.70 |
| 1 ½ | $163.40 |
| 2 | $261.44 |
| 3 | $522.88 |
| 4 | $817.00 |
| 6 | $1,634.00 |
| 8 | $3,268.00 |

**Commodity Rates:**

| From | To | Cost per 1000 gallons |
|---|---|---|
| 0 | 1000 | $1.00 |
| 1001 | 5000 | $2.25 |
| 5001 | 10000 | $2.50 |
| 10001 | 18000 | $3.00 |
| 18001 | 25000 | $3.58 |
| 25001 | And greater | $4.57 |

**Rebate Threshold:**

Monthly Usage < 7001 gallons per month[17] results in a 65% reduction in volumetric charges.

This rate structure is calibrated to achieve the revenue requirement of $12,192,353 per year for the utility.

[16] Note that the process described here is similar across all utilities in this application.

[17] This number is determined by taking all consumption by all residential accounts in the period November 2007 to October 2008, removing those accounts with "zero" consumption, and calculating the arithmetic average of that data set. The Rebate Threshold is proposed to remain constant between rate applications in order to ensure that its efficacy can be measured, and that our customers can establish their own water use management techniques and practices to meet and maintain their consumption at or below the Rebate Threshold.

**Q. Can you describe the method employed to determine these rates?**

A. This discussion, although using Santa Cruz as an example, applies to all water utilities included in this docket.

Rate design is a non-trivial exercise. The number of interrelated parameters involved rapidly outpaces the ability to perform these determinations manually. Accordingly, we have developed a model that reviews the historic consumption data by account, and manipulates a number of parameters subject to certain constraints to derive a solution that results in the required revenue.

This model, using the Microsoft Excel Solver function[18], is then run to derive the required revenue from the historic consumption patterns of all customers.

**Q. Can you describe the constraints used in the model?**

A. The model uses the following constraints:

| Parameter | Constraint | Notes |
|---|---|---|
| Base Rate | 5/8" Base Rate >= 0.50 x Revenue Requirement ÷ Number of Accounts | The Base Rate for residential meters is constrained by the requirement to generate 50% of the gross revenue. This number represents the fact that the cost of infrastructure for water and wastewater utilities is very high and the fixed costs of operating the utility (billing, management, administration etc) must also be |

[18] Solver is part of a suite of commands sometimes called what-if analysis tools. With Solver, you can find an optimal value for a formula in one cell — called the target cell — on a worksheet. Solver works with a group of cells that are related, either directly or indirectly, to the formula in the target cell. Solver adjusts the values in the changing cells that you specify — called the adjustable cells — to produce the result that you specify from the target cell formula. You can apply constraints to restrict the values that Solver can use in the model, and the constraints can refer to other cells that affect the target cell formula.

| | | |
|---|---|---|
| | | recovered. |
| | 5/8" Base Rate >= 0 | Minimum value |
| | 5/8" Base Rate < = $75 | Maximum value |
| | ¾" Base Rate = 5/8" Base Rate | |
| | 1" Base Rate = 2.5 x 5/8" Base Rate | From AWWA C700 meter standards defining peak flow capabilities. |
| | 1.5" Base Rate = 2.0 x 1" Base Rate | As above |
| | 2.0" Base Rate = 1.6 x 1.5" Base Rate | As above |
| | 3" Base Rate = 2.0 x 2" Base Rate | As above |
| | 4" Base Rate = 1.5625 x 3" Base Rate | From original Santa Cruz rates |
| | 6" Base Rate = 2.0 x 4" Base Rate | |
| | 8" Base Rate = 2.0 x 6" Base Rate | |
| Commodity Rates | Tier 1 = $1.00 | Tier 1 = 0 to 1000 gallons |
| | Tier 1 < =$2.00 | |
| | Tier 2 >= 1.1 x Tier 1 | Tier 2 = 1001 to 5000 gallons |
| | Tier 2 <=$2.60 | |
| | Tier 3 >= 1.1 x Tier 2 | Tier 3 = 5001 to 10000 gallons |
| | Tier 4 >= 1.2 x Tier 3 | Tier 4 = 10001 to 18000 gallons |
| | Tier 5 > = 1.2 x Tier 4 | Tier 5 = 18001 to 25000 gallons |
| | Tier 6 >= 1.3 x Tier 5 | Tier 6 > 25001 gallons |
| Rebate Threshold | >= 45% | Represents the portion of the commodity consumption rebated to the consumer if they achieve consumption lower than the annual average. |
| | <=65% | |

**Q. Could it be argued that some of those constraints could be different?**

A. Yes, but this is a combination of mathematical simulation and informed judgment that derived those numbers. In fact we used this process to come within a few percentage points of the required revenue. On completion of the simulation, we reviewed each rate and manually corrected by rounding the numbers to achieve the final result consistent with the financial schedule supplied in this application. It should be noted that the data sets used to generate the first order result (ie the Microsoft Solver result) and the result included in the schedules are slightly different. The differences are:

- The Microsoft Solver data set removed those accounts with "zero" consumption. This was done to ensure the arithmetic average represented actual homes consuming water to better approximate actual consumption.

- The time frame for the Microsoft Solver data set is November 2007 to October 2008.
- The schedules are based on standard Commission Bill Count practices.

**Q. How will this affect the customer's costs?**

| | Consumption (gallons per month) | Existing Rates (charges per month)[19] | New Rates (charges per month)[20] |
|---|---|---|---|
| **ALL CLASSES** | | | |
| Avg Monthly | 10,592 | $49.94 | $56.96 |
| Median Monthly | 6,064 | $38.17 | $37.11 |
| **RESIDENTIAL** | | | |
| Avg Monthly | 7,768 | $42.60 | $49.60 |
| Median Monthly | 6,036 | $38.09 | $37.09 |
| Monthly Charge if eligible for rebate | 7,001 (90% of average residential consumption) | N/A | $37.93 |

**Q. What is the impact of the Rate Design on consumers?**

A. During the development of the rate design, we wanted to ensure that the conservation benefits are real and achievable. As a result we decided that a rebate system would be best suited for the application. While revenue requirement of $12,192,353 for Santa Cruz will definitely require rate increases for our consumers, we have attempted to structure those increases such that the impact is lessened for the average consumer.

The average residential consumer in the Santa Cruz service area uses 7,768 gallons per unit per month.[21] This in itself is a very low number and is one of the lowest per capita water

[19] Calculated from existing rates.
[20] Calculated from proposed rate tariff. A detailed calculation is shown later in this testimony.
[21] Data set November 2007 to October 2008, ignoring units with "zero" usage

consumption in the state.[22] When all water use is considered (commercial and irrigation), the average consumption is 10,592 gallons per unit per day.

Under Santa Cruz's existing rates, the average residential customer would be charged:

Monthly Charge = \$25 + (7768 – 1000)÷1000 x \$2.60 = \$42.60

Under the new rate structure, the average residential customer would be charged:

Monthly Charge = \$32.68 + (1000 x \$1.00 + 4000 x \$2.25 + 2768 x \$2.50) ÷1000

= \$49.60

While this is a significant increase, I think it is important to consider how the consumer in this case can benefit from the Rebate Threshold. If this customer was able to reduce his or her consumption by 10% and achieve the Rebate Threshold use of 7001 gallons, his or her costs would be:

Monthly Charge = \$32.68 + (1000 x \$1.00 + 4000 x \$2.25 + 2001 x \$2.50) ÷1000 x 0.35

= \$37.93

This savings occurs when a customer saves 770 gallons of water in a month.

**Q. How easy is it for a customer to save 770 gallons?**

A. First off, we should remind ourselves that 7,768 gallons per dwelling unit per month is 260 gallons per dwelling unit per day and that 770 gallons per month is 27 gallons per dwelling unit per day. These measures are not water restrictions in any sense. One needs only to look at Brisbane in Queensland, Australia to see what water restrictions are. In the depths of an extreme drought, local water authorities limited consumption to 140 L per person per day. That's 37 gallons per person per day, or 100 gallons per dwelling unit per day – 40%

[22] The implementation of recycled water systems and land use guidelines has resulted in dramatic reductions in water consumption for the community.

of our consumption in Santa Cruz (and much less than all other utilities in the state). Under Queensland's Target 140 program, almost all outdoor usage of water is restricted.

In our case, we are not suggesting restrictions, but rather look for ways to incent conservation. 770 gallons can be saved in many ways. This volume can be saved by reducing outside use 10 minutes per day. Or by a number of other activities including[23]:

- Save up to 1,000 gallons per month: Turn off the water while brushing your teeth and shaving.
- Save up to 250 gallons per month: Rinse fruit and veggies in a bowl of water instead of under running water.
- Save up to 1,000 gallons per month: Run your washing machine and dishwasher only when full.
- Repairing a dripping faucet can save up to 30 gallons per day.
- Fix a toilet leak and you can save as much as 100 gallons of water per day.
- Dripping showerheads can waste 75 to several hundred gallons of water a week, depending on the size of the drip.
- Save up to 1,000 gallons per month: Limit showers to five minutes and install water-efficient showerheads.

So there are numerous activities that the homeowner can implement that will save water. Further, it is Global Water's intention to provide feedback, guidance and support to our customers in their conservation efforts. Such support will take the form of:

- Educational materials delivered via our website and monthly invoices;
- Courses on xeriscaping and desert vegetation;
- Instruction on landscape irrigation; and
- Feedback on their personal water use.

Other potential support may be available in the form of leak repair and water efficiency fixture installation services. While this program is in its infancy, it will continue to grow with the needs and desires of our customers.

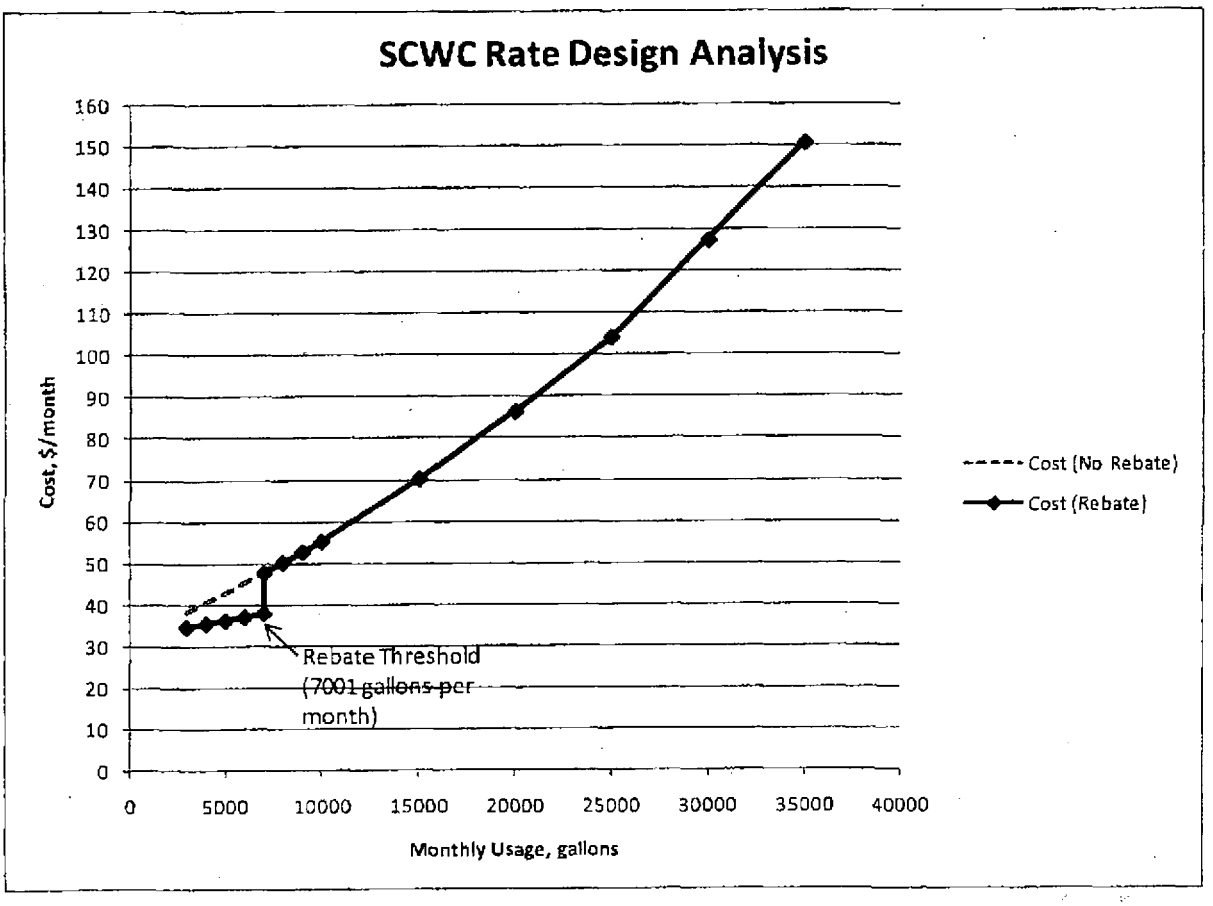
[23] http://www.chnep.org/MoreInfo/water_conservation_facts.htm, accessed 9 December 2008

The idea behind the Rebate Threshold is that by setting the standard, and providing feedback on the attainment of that standard, the homeowner can benefit financially. When people benefit financially they will be more motivated to conserve resources, and the environment can benefit through reduced water withdrawals.

**Q. What is the overall impact of such a rate design?**

A. We believe it is significant from a water conservation perspective. It also offers customers the practical option of being able to manage their usage to achieve real reductions in costs. The implementation of the Rebate Threshold allows for many people to receive reductions in their monthly costs. In fact, we can demonstrate that a customer meeting the Rebate Threshold in Santa Cruz can save $9.75 per month – or $117.04 per year. Further, by doing so, low water users are encouraged. If all consumers could achieve the Rebate Threshold, we could save 400,000,000 gallons of water annually.

The following graph shows the impact of staying below the Rebate Threshold. The graph also shows what the costs would be if no Rebate Threshold was included in the rate design.




**Q. Can people really be expected to benefit from such a design?**

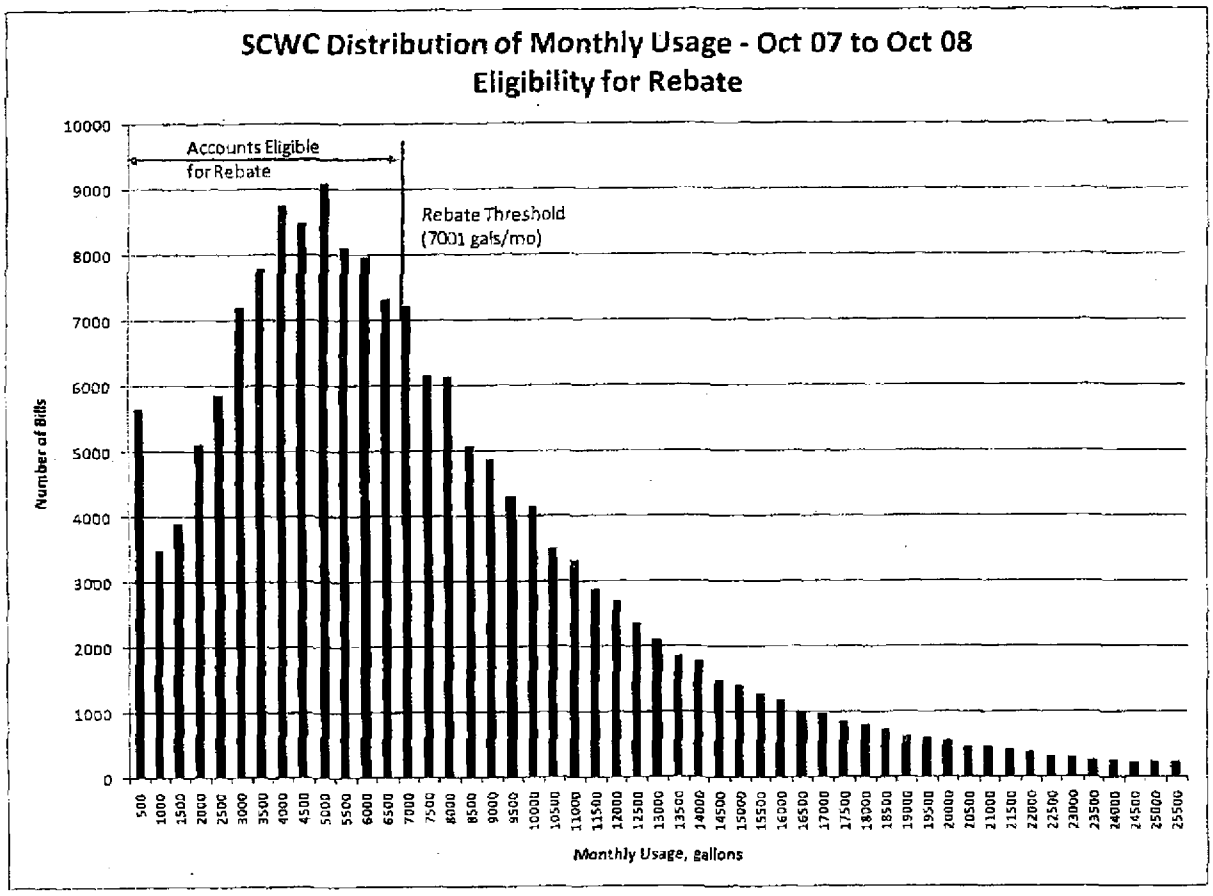
A. Absolutely. The costs of water increase dramatically as use increases. However, *most consumers in the area are already achieving the Rebate Threshold today – and so would receive the immediate benefit of the rebate.*

**Q. How many accounts would receive that benefit?**

A. *Our analysis indicates that for the 13 month period of October 2007 to Oct ober 2008.*[24] *95,855 of the 166,294 invoices prepared by Santa Cruz had consumption below the Rebate Threshold and under the new rate design would be entitled to the volumetric rebate.*[25] *So 57.6% of our accounts would be eligible.*

[24] Note that the applicability analysis was completed over a 13 month period, while the Rebate Threshold was determined over a 12 month period from November 2007 to October 2008.
[25] This analysis ignores connections that reported "zero" consumption during that period.

The following graph demonstrates the distribution of accounts eligible for the Rebate. The graph is a histogram of all residential, commercial, HOA and irrigation use in the Santa Cruz service area for the period October 2007 to October 2008. With the results of the model, the Rebate Threshold is determined as 7001 gallons per month. Those accounts with consumption of less than 7000 gallons per month are eligible for the Rebate.




**Q. But what happens if everyone achieves the Rebate Threshold?**

A. Then we have succeeded. In reality this is not a likely scenario, but it does demonstrate the need for increased revenue decoupling. We have looked at the impact to revenue if all customers achieved the Rebate Threshold. In this case the revenue reverts to the fixed component of the charge plus 35% of the volumetric charge for residential customers. We estimate that would result in a residential revenue reduction of approximately $1,500,000.

**Q. Is that a significant amount?**

A. Yes. But it is not likely that all customers will qualify for the discount. Nonetheless, we are sensitive to the fact that our customers are impacted by today's extraordinary economic situation, and we believe it is important to provide ways to reduce the impact of the rate increase on our customers' bills. Moreover, if all customers qualify for the rebate, consumption levels would be lower, lowering pumping, treatment and other costs to some extent. If all customers achieve the rebate level, it would represent an annual reduction[26] of almost 400,000,000 gallons of water pumped from the ground, chlorinated, and distributed to consumers:

| Residential Consumption (gallons) as Modeled (Nov 07 to Oct 08) | Residential Consumption (gallons) if the demand is capped at Rebate Threshold | Delta (gallons) |
|---|---|---|
| 1,189,756,484 | 790,177,097 | 399,579,387 |

**Q. How about expenses?**

A. With the reduction of 400,000,000 gallons of consumption we expect that expense levels would also reduce.

**Q. Will the RTR apply to Commercial and industrial customers as well as to residential customers?**

A. The RTR is primarily designed to provide a residential benefit. The Rebate Threshold is determined on the basis of the average residential consumption. Indeed 72% of the water that we sold in Santa Cruz for the period of November 2007 to October 2008 was residential. However, commercial and industrial accounts that also reduce their consumption below the Rebate Threshold would be eligible to receive the rebate.

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[26] This is based on the following assumptions from the data set November 2007 to October 2008, ignoring units with "zero" consumption:

The maximum residential usage is capped at 7001 gallons per month.

If the actual usage was less than 7001 gallons per month, then the actual usage was used.

**Q. It appears that the costs of funding the Rebate are skewed to the large water consumers.**

A. Yes this is true. The heavier users of water indeed pay more for that service. Fundamentally I am opposed to subsidizing large water usage through smaller volumetric charges, or with different rates. If water is water, and its production and service costs are known, then each entity should pay for their consumption. Indeed, I believe that in many cases, large water users actually define a system's necessary capacity (and thus the cost of the system's infrastructure.) If you consider that a large industrial consumer may demand short periods of say 2000 gallons per minute, the water and infrastructure needs to be there for that service. This is the equivalent of a peak hour flow from 3400 single family dwellings.[27] Notwithstanding that the flow may be intermittent, the infrastructure needs to be there, this is similar to how I understand Arizona's electric system operates, the peak demand defines the system's capacity.

**Q. But what about those users that cannot reduce their consumption?**

A. The incentive needs to be there for the options to exist. Internally re-using water or switching to recycled water each allows for a reduction in costs. For those heavy irrigation users, switching to more efficient irrigation practices, or more xeriscape will also allow for a cost savings. The six tier rate design allows consumers to manage water to their best economic advantage.

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[27] If the average annual demand from a single family dwelling is 250 gallons per day, the peak hour flow can be calculated as follows:

1. Average Day Flow = 250 gallons per unit per day
2. Maximum Day Flow = 495 gallons per unit per day (250 x 1.8 + 10% for potential line losses)
3. Peak Hour Flow = 0.58 GPM per unit (1.7 x Max Day Flow)

For residential users (and for commercial and industrial users), the Six-Tiered System allows for users to avoid reaching the higher cost water and it means that they are not impossibly far away from the next lowest tier.

**Q. In summary, can you describe the effects and benefits of the rate design as proposed?**

A. All of the water rates in this application use the same process for determination. The particulars for each utility are shown below. The details of these rates are also shown in the attached schedules to this application.

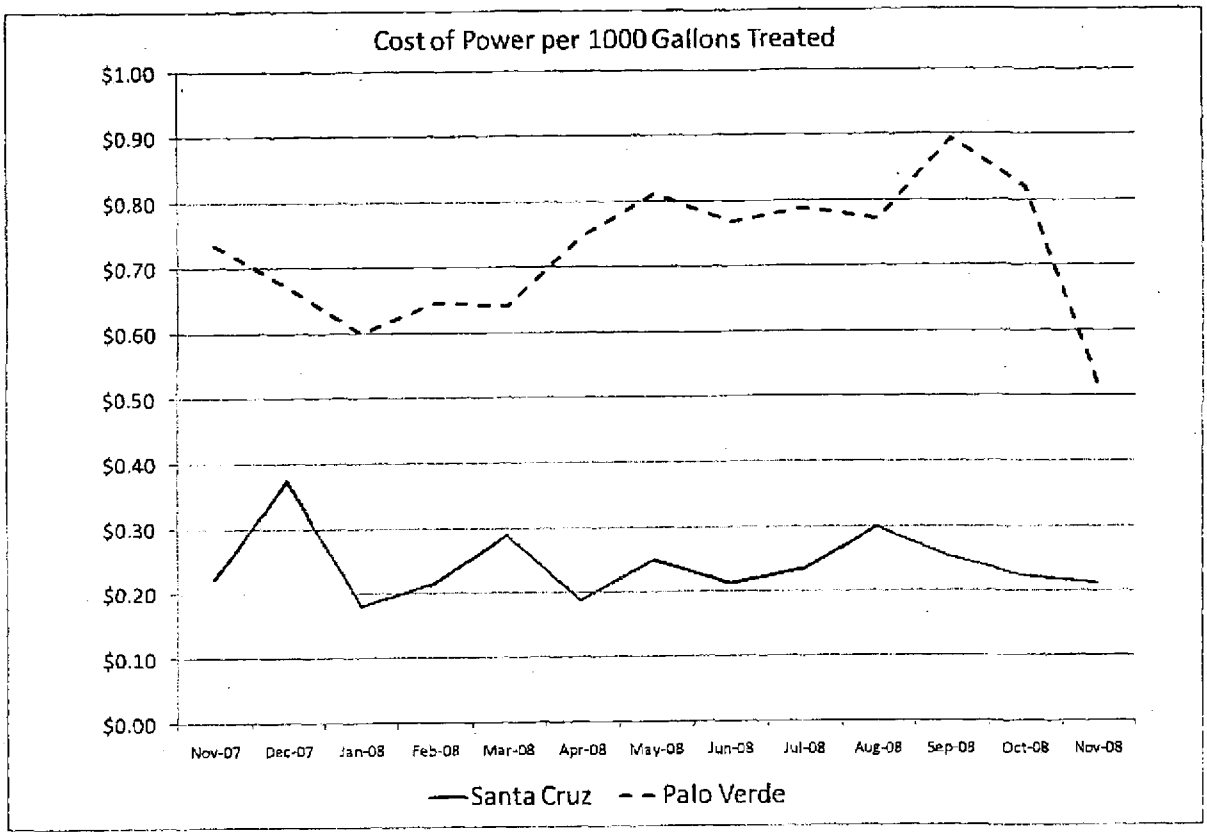
| Utility | | SCWC | VWC - Town Division | VWC - Greater Buckeye Division | WUGT | WVWC | Consolidated West Valley | PVUC Total | Year 0 | Year 1 | Year 2 | Year 3 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenue Requirement | | $ 12,192,353 | $ 4,552,445 | $ 492,668 | $ 936,587 | $ 972,911 | $ 6,003,767 | $ 15,012,249 | | | | | |
| Base Rate | Meter Size | | | | | | | | | | | | |
| | 5/8 | $ 32.68 | $ 36.75 | $ 37.25 | $ 75.00 | $ 31.15 | $ 41.50 | $ 71.11 | $ 33.00 | $ 45.70 | $ 58.41 | $ 71.11 | |
| | 3/4 | $ 32.68 | $ 36.75 | $ 37.25 | $ 75.00 | $ 31.15 | $ 41.50 | $ 71.11 | | | | | |
| | 1 | $ 81.70 | $ 91.89 | $ 93.13 | $ 187.50 | $ 77.88 | $ 103.75 | $ 178.00 | | | | | |
| | 1 1/2 | $ 163.40 | $ 183.75 | $ 186.25 | $ 375.00 | $ 155.75 | $ 207.50 | $ 355.55 | | | | | |
| | 2 | $ 261.44 | $ 294.00 | $ 298.00 | $ 600.00 | $ 249.20 | $ 332.00 | $ 568.88 | | | | | |
| | 3 | $ 522.88 | $ 588.00 | $ 596.00 | $ 1,200.00 | $ 498.40 | $ 664.00 | $ 1,137.76 | | | | | |
| | 4 | $ 817.00 | $ 918.75 | $ 931.25 | $ 1,875.00 | $ 778.75 | $ 1,037.50 | $ 1,777.75 | | | | | |
| | 6 | $ 1,634.00 | $ 1,837.50 | $ 1,862.50 | $ 3,750.00 | $ 1,557.50 | $ 2,075.00 | $ 3,555.50 | | | | | |
| | 8 | $ 3,268.00 | $ 3,675.00 | $ 3,725.00 | $ 7,500.00 | $ 3,115.00 | $ 4,150.00 | $ 7,111.00 | | | | | |
| Consumptive Fees | Gallons From to | | | | | | | Recycled Water (& Raw Water for SCWC) | | | | | |
| | 0 1000 | $ 1.00 | $ 1.00 | $ 1.00 | $ 1.00 | $ 1.00 | $ 1.00 | $ 651.70 | $ 100.00 | $ 651.70 | $ 651.70 | $ 651.70 | Recycled Water Rate |
| | 1001 5000 | $ 2.25 | $ 2.10 | $ 2.60 | $ 5.01 | $ 2.60 | $ 2.45 | $ - | | | | | |
| | 5001 10000 | $ 2.50 | $ 2.30 | $ 2.85 | $ 16.32 | $ 2.85 | $ 2.70 | $ - | | | | | |
| | 10001 18000 | $ 3.00 | $ 2.75 | $ 3.40 | $ 19.58 | $ 3.50 | $ 3.25 | $ - | | | | | |
| | 18001 25000 | $ 3.58 | $ 3.50 | $ 4.00 | $ 23.50 | $ 4.50 | $ 3.93 | $ - | | | | | |
| | > 25000 | $ 4.57 | $ 4.28 | $ 4.84 | $ 29.94 | $ 5.45 | $ 4.88 | $ - | | | | | |
| Overall Average Use | | 10,592 | 11,878 | 9,962 | 10,322 | 7,511 | 11,585 | | | | | | |
| Residential Average | | 7,768 | 7,435 | 9,877 | 8,173 | 6,962 | 7,757 | | | | | | |
| Rebate Threshold | | 7,001 | 6,701 | 9,001 | 7,401 | 6,401 | 7,001 | | | | | | |
| Rebate if below | | 65% | 59% | 45% | 45% | 45% | 49% | | | | | | |
| Monthly Cost @ Rebate Threshold | | $ 37.93 | $ 42.23 | $ 49.79 | $ 108.13 | $ 39.62 | $ 49.69 | $ 71.11 | | | | | |
| Monthly Cost at 1 Gallon above Rebate Threshold | | $ 47.69 | $ 50.07 | $ 60.06 | $ 135.24 | $ 46.55 | $ 57.71 | $ 71.11 | | | | | |
| Monthly Savings for Achieveing Conservation Goal | | $ 9.75 | $ 7.84 | $ 10.26 | $ 27.11 | $ 6.93 | $ 8.01 | $ - | | | | | |
| Note | No construction water included | | | | | | | | | | | | |

**Q. Judging by the chart, Palo Verde is increasing rates more than the water utilities. Can you explain this?**

A. Yes. The rates for Palo Verde were designed using a standard methodology. In general it can be shown that the costs of operating a wastewater utility typically exceed those of a water utility. This fact is derived from several key elements:

1. The collection system, notionally analogous to the distribution system in a water utility, is transporting solids and not liquids. The maintenance activities associated with collections systems (cleaning, flushing, jetting etc) exceed water distribution systems.
2. Wastewater infrastructure typically uses gravity to assist in transport requiring the infrastructure to be buried deeper and harder to access.
3. Wastewater is biologically active. That means that its constituents change over time and distance, and as a result it has the potential to generate corrosive and toxic gases that cause deterioration of infrastructure.
4. Wastewater requires extensive treatment to make Class A+ recycled water – screening, grit removal, biological reduction, filtration and disinfection.
5. Wastewater produces residuals which must be dewatered and environmentally disposed of.
6. Wastewater monitoring from a permit perspective is more intense.

As a result, we see that the operating costs associated with a wastewater utility (Palo Verde) are greater than water utilities (Santa Cruz).


Cost of Power per 1000 Gallons Treated
$1.00
$0.90
$0.80
$0.70
$0.60
$0.50
$0.40
$0.30
$0.20
$0.10
$0.00
Nov-07
Dec-07
Jan-08
Feb-08
Mar-08
Apr-08
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Jun-08
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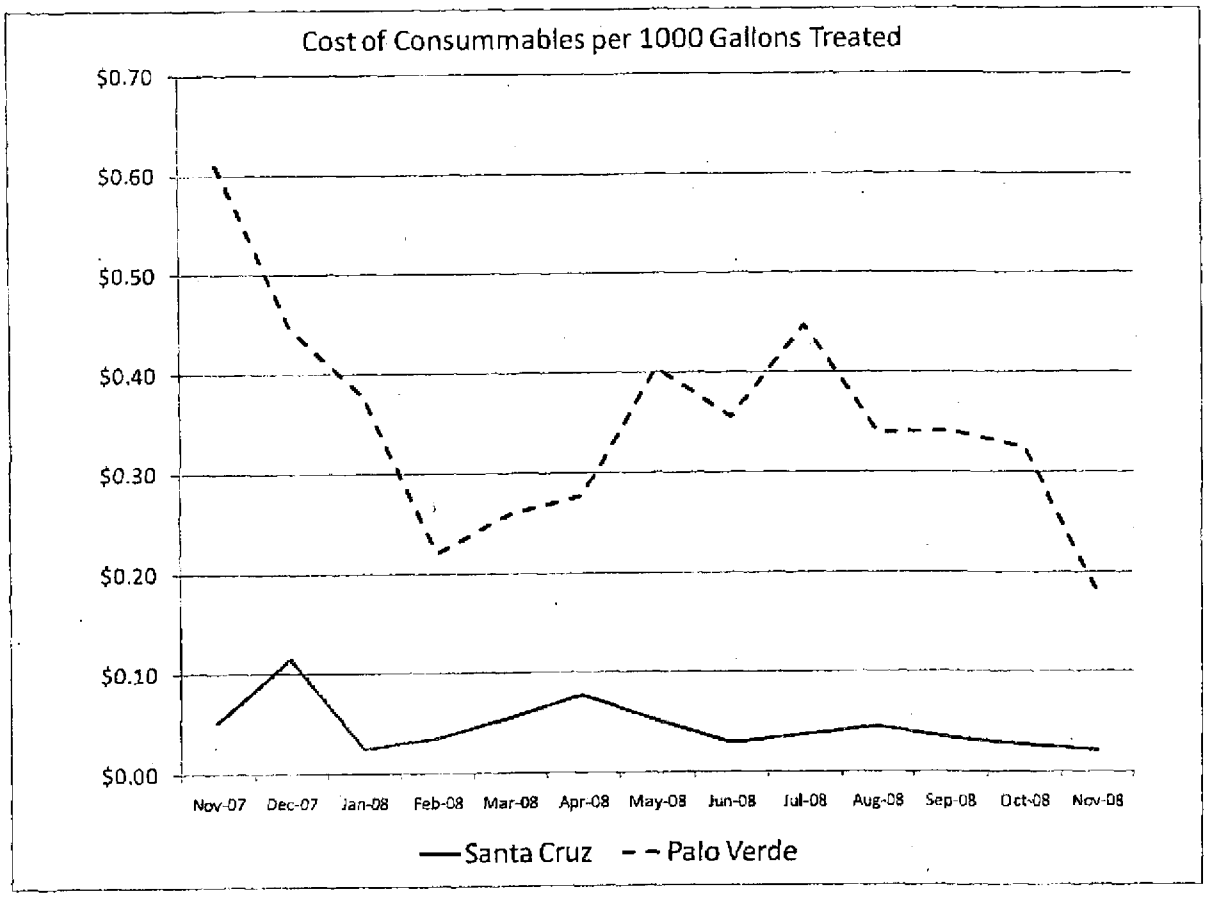
Nov-08
Santa Cruz
Palo Verde


Cost of Consummables per 1000 Gallons Treated
$0.70
$0.60
$0.50
$0.40
$0.30
$0.20
$0.10
$0.00
Nov-07
Dec-07
Jan-08
Feb-08
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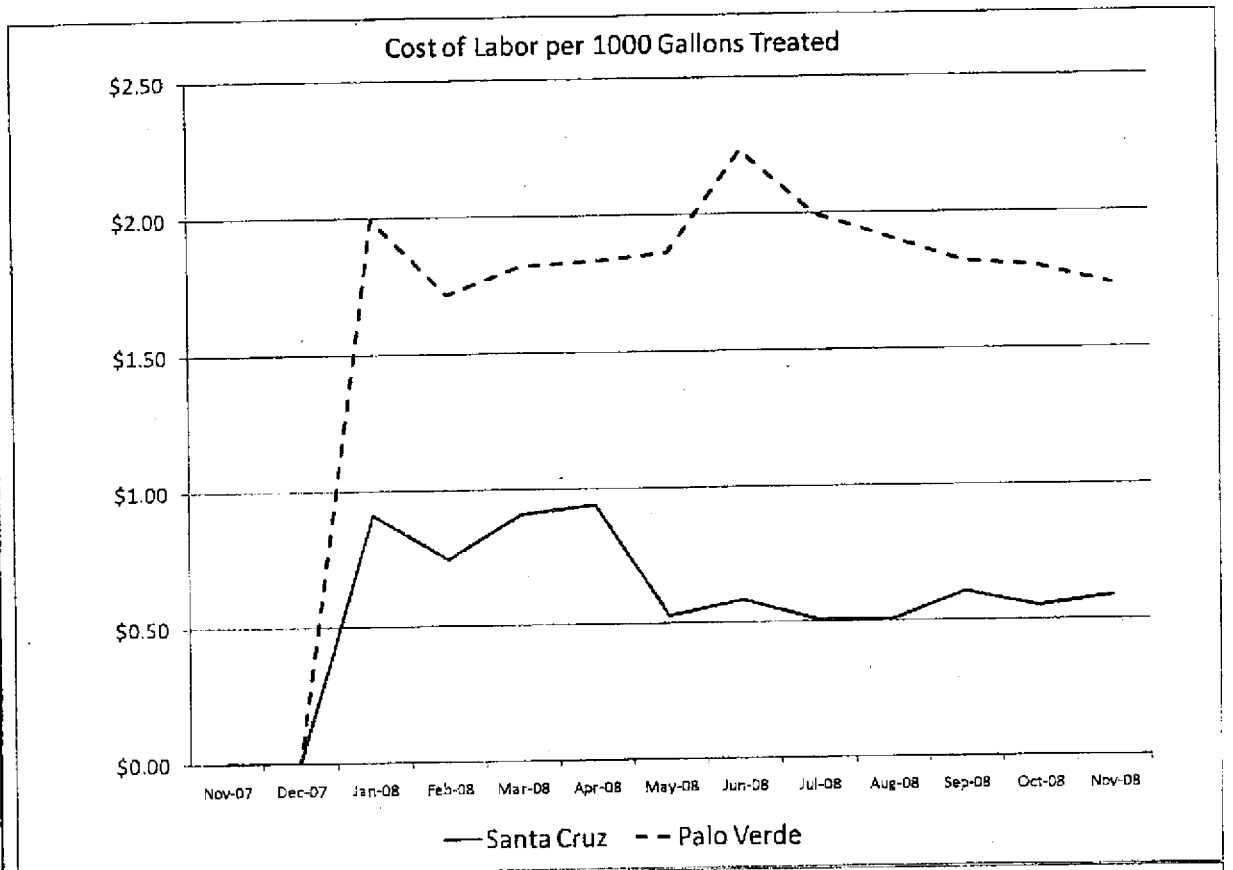
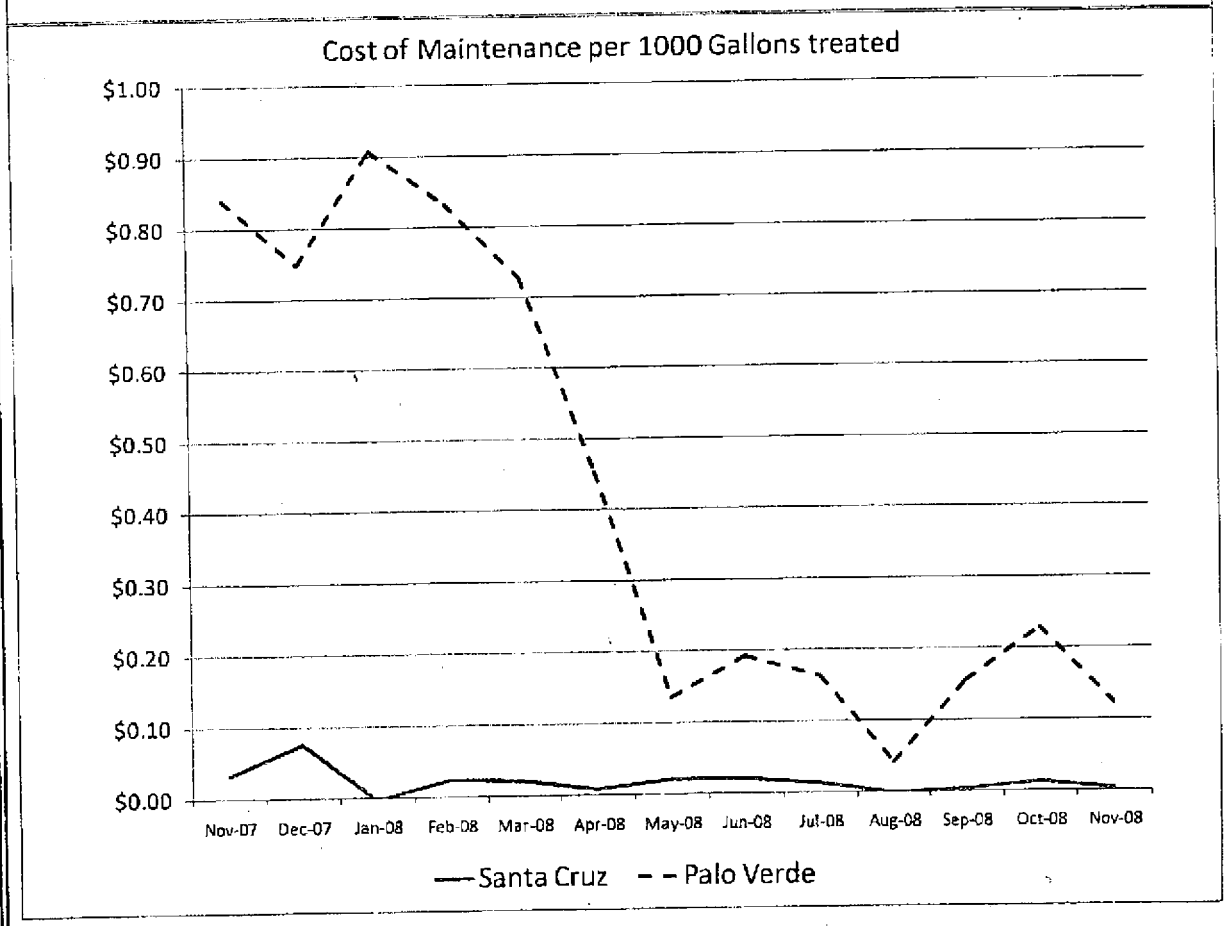
Oct-08
Nov-08
Santa Cruz
Palo Verde


Cost of Labor per 1000 Gallons Treated
$2.50
$2.00
$1.50
$1.00
$0.50
$0.00
Nov-07
Dec-07
Jan-08
Feb-08
Mar-08
Apr-08
May-08
Jun-08
Jul-08
Aug-08
Sep-08
Oct-08
Nov-08
Santa Cruz
Palo Verde


Cost of Maintenance per 1000 Gallons treated
$1.00
$0.90
$0.80
$0.70
$0.60
$0.50
$0.40
$0.30
$0.20
$0.10
$0.00
Nov-07
Dec-07
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Sep-08
Oct-08
Nov-08
Santa Cruz
Palo Verde

## VII. Changes to service and miscellaneous charges and tariffs.

**Q. Please discuss the Global Utilities proposed changes to service and miscellaneous charges and tariffs.**

A. There are some significant operating costs associated with running a utility that are not addressed in the Commission's rules. The result is that the utility, lacking Commission authority to address these issues, must absorb the costs. Further, there are some basic charges that exist in standard tariffs that do not reflect current costs associated with providing those services. This testimony describes those conditions, and proposes changes for inclusion in the Global Utilities' tariffs.

### *A. Meter Exchange Fee.*

**Q. Please explain the proposed Meter Exchange Fee.**

A. Meter size is determined by the home builder based on the requirements of flow and pressure as determined by fixture counts, home size, fire suppression systems, local and state building codes, plumbing codes and fire codes. At the time of initial installation, the home builder requests a meter of sufficient size to ensure acceptable flow and pressure throughout the operational envelope.

A home owner may request that a meter be changed to a different size. Under these conditions, we believe that the homeowner must take responsibility for the selection of that meter and be charged an appropriate fee to allow the utility to recover costs. Accordingly, we recommend a **Meter Exchange Tariff** that explains that the homeowner is responsible for:

1. Determining the appropriate size of meter. Further, the home owner agrees to hold harmless and release Global Water, its affiliated companies together with the

employees, agents and assigns of such companies from any responsibility for direct or collateral damage, losses or operational impacts associated with the meter size change or the size of the meter being inadequate or insufficient for the needs of the home owner.

2. Reimbursement of utility costs associated with that change, including cost of new meter and installation costs in accordance with AAC R14-2-405.B.5.

***B. Water Theft charge.***

**Q. Please explain the proposed Water Theft charge.**

A. Water is an inexpensive commodity. That is a problem from an enforcement perspective. The theft of 10,000 gallons is barely worth the law enforcement time to prosecute.[28] Further, tracking down water theft and eliminating the potential is labor intensive. With very little support from the law enforcement community, there are few disincentives to prevent people from stealing water.

While theft from a utility is a class 6 felony (ARS 13-3724.D), the costs associated with prosecuting such theft is disproportionate to the "value" of the water.

This problem is typically restricted to theft from hydrants, although we have seen the issue where homeowners have "jumpered", or bypassed their meters to receive service. Both of these instances result in lost revenue for the utility, but more importantly require that the remaining customers compensate for that activity.

[28] Buckeye law enforcement officials have told us water theft is not considered a priority and will no longer immediately report to scene. These officials indicate that the response time will be 1 – 5 days.

Further, there is a real possibility that these activities can introduce contamination into the distribution system as the individuals stealing water rarely, if ever, would follow back flow prevention procedures or sanitizing activities prior to connection.

We recommend that a **Water Theft Tariff** be created that allows the utility, on proper collection of photographic evidence and reporting, to charge a fee of $500. In the case of a homeowner, this fee would be added to their account. In the case of water trucks stealing from utility hydrants, this fee would be presented in the form of an invoice to the responsible party.

*C. Hydrant Meter Deposit Charge.*

**Q. Please explain the Hydrant Meter Deposit Charge.**

A. Hydrant meters are large expensive pieces of equipment, and include certified back flow prevention and Automated Meter Reading devices attached. While we require that the hydrant meters be moved only by Global personnel, and that they be locked to the hydrant supplying service, we have experienced a loss of some of these assemblies. We recommend that the customer pay a refundable deposit under a **Hydrant Meter Tariff** reflecting the replacement cost of these assemblies, $1,750.

*D. Lock/Security Tab Cutting Charge.*

**Q. Please explain the proposed fee for cutting a Lock/Security Tab from a disconnected meter.**

A. There is no doubt that managing disconnected accounts is a constant headache for utilities. Disconnection activities are not the most pleasant customer interactions and often tensions run high. The Global Water practice is to notify customers in accordance with ACC rules

and physically disconnect water service only when it becomes absolutely necessary. Once a service technician has visited the service address to disconnect, he or she closes the utility's valve upstream of the meter (the curb stop), and locks that valve with a keyed lock or a security tab. In the normal course, these security mechanisms are removed when the account is brought current.

There are certain times, however, when the customer takes it upon themselves to remove these security devices to gain unauthorized access to water. In the case of a final disconnect, the meter is not read and therefore there is no mechanism to review water usage for that account. It is only during audits of disconnected accounts that these meters are checked. During that time the disconnected service address may have received a substantial amount of water.

As a disincentive to engage in this behavior, we recommend that the unauthorized removal of a lock or secure tab be subjected to a $500 charge under a **Lock/Security Tab Tampering Tariff**. This charge would be placed on the delinquent account and would be required to be paid before water service is restored. In the event that a disconnected customer felt that this charge was not warranted, we would hold the amount pending complaint resolution. Notice of this new charge will be provided to customers when they are notified of an impending disconnect.

*E. Source Control tariff and charges.*

**Q. Please explain Global Water's source control program.**

A. Under 40 CFR Ch 1 Section 403, the EPA established the requirement for pretreatment[29]: § 403.2 Objectives of general pretreatment regulations. By establishing the responsibilities of government and industry to implement National Pretreatment Standards this regulation fulfills three objectives:

(a) To prevent the introduction of pollutants into Publicly Owned Treatment Works (POTWs) which will interfere with the operation of a POTW, including interference with its use or disposal of municipal sludge;

(b) To prevent the introduction of pollutants into POTWs which will pass through the treatment works or otherwise be incompatible with such works; and

(c) To improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges.

The National Pretreatment Program provides the necessary regulatory tools and authority to local pretreatment programs for controlling interference problems. Under the provisions of Part 403.5(c)(1) & (2), a POTW must establish specific local limits for industrial users to guard against interference with the operation of the municipal treatment works. See 46 FR 9406 (28 January 1981).

The EPA's General Pretreatment Regulations establish responsibilities of federal, state and local government, industry and the public to implement Pretreatment Standards to control

[29] The term Pretreatment means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW (40CFR Ch 1 403.3)

pollutants from the industrial users which may pass through or interfere with POTW treatment processes or which may contaminate sewage sludge.

**Q. But Palo Verde is not specifically a POTW.**

A. By definition, Palo Verde receives its authority to design, install, commission, operate and maintain wastewater collection and treatment systems from the Commission through the approval of a Certificate of Convenience & Necessity (CC&N). As such Palo Verde is charged with the responsibility for effective management of the sewer system. It is therefore subject to the obligations and rights of the Federal Industrial Pretreatment Program (IPP) when it reaches a certain size or connects a Significant Industrial User.

The federal rules requiring pretreatment of industrial wastewater are incorporated by reference in the AzPDES program rules. As a holder of an AzPDES permit, Palo Verde must follow the requirements of the program.

Further, under the AzPDES rules, if Publicly Owned Treatment Works (POTWs) take "indirect discharges" from industrial users and then route the treated effluent into jurisdictional surface waters, then the POTW's AzPDES permit must include measures implemented by the POTW itself to pre-treat the wastewater so as to protect the POTW system.

Thus, ADEQ has authority to enforce the pretreatment rules against the POTW.

Further, a "POTW" is defined to include a municipality of Arizona. A "Municipality" is defined to include a designated management agency approved under Section 208 of the Clean Water Act, 33 U.S.C. § 1288. 33 U.S.C. § 1362(4). The federal Section 208 rules define "designated management agency" or "DMA" as an agency "identified by a WQM

plan and designated by the Governor to implement specific control recommendations." ADEQ's Section 208 rules similarly define "DMAs" as "those entities designated in a Certified Areawide Water Quality Management Plan to manage sewage treatment facilities and sewage collection systems in their respective areas."

Therefore, in the context of Section 208, POTWs are municipalities, which are DMAs, which are any managers of sewage collection and treatment systems identified in an approved WQM plan.

The above definitions and the usage of the term "DMA" indicate quite plainly that a private, non-governmental entity such as a CC&N-certificated sewage treatment service provider like Palo Verde can be a DMA, provided the entity is identified by a certified Section 208 amendment to be the service provider in a particular service area located within the designated planning agency's jurisdiction, in this case CAAG's.

As a result, Palo Verde, which is designated as the DMA under its existing 208 amendment, is considered a POTW for purposes of the pretreatment rules' enforceability.

**Q. Do Palo Verde's operations trigger the implementation of the Federal IPP at this moment?**

A. At the present time, Palo Verde is below the trigger for application of the Federal IPP (design flows less than 5.0 MGD, no Significant Industrial User connections). Nonetheless, good operational practices require that Palo Verde maintain an enforceable pretreatment program. In order to provide this Program the leverage of enforceability, it is important to have the Commission adopt this Program as a tariff. This would allow termination of service for customers not complying with the terms of the Program.

Under Arizona Administrative Code R14-2-609 (B) and (C), Palo Verde may terminate service to safeguard health, or if the user violates the contract established between Palo Verde and the consumer, which would includes violation of Palo Verde's Source Control Program.

**Q. What is the purpose of Palo Verde's Source Control Program?**

A. The Source Control Program is designed to achieve a number of objectives:

1. To protect the collection systems from blockages and damage.
2. To protect the treatment system from process upsets.
3. To protect the quality of recycled water.
4. To protect the quality of biosolids (sludge).
5. To protect human health and the environment from damage.

**Q. What are the components of the Program?**

A. The Program requires adherence to wastewater quality standards, or discharge limitations, and provides specific guidance and operation practices for specific industries known to have wastewater constituent levels that can cause problems. At present, we have developed Codes of Practice for the following industries:

1. RV Park Operations;
2. Food Service Operations;
3. Dental Operations;
4. Photographic Imaging Operations;
5. Automobile Repair Operations; and
6. Dry Cleaning Operations.

More Codes of Practice will be developed as requires by specific users connecting to the collection system.

**Q. How does Palo Verde plan to implement the program?**

A. The specifics of each program are detailed in the attached Source Control Tariff (Attachment GSS-3).

Palo Verde already manages the technical requirements of the program by ensuring that specific industries are provided with the infrastructure requirements of pre-treatment/source control prior to connection. These installations are inspected by Global Water staff prior to acceptance for commissioning.

By implementing this Program as a tariff, specific enforcement actions can be taken against non-compliant operators.

**Q. Please explain the proposed charge for failure to maintain grease trap/Exceeding source control limits.**

A. Source control is a vital component of the maintenance of a wastewater collection system and the recycled water quality. Our systems are designed to handle residential and light commercial activities that meet our source control requirements. Those industries that have the potential to impact the collection or treatment systems are required to install pre-treatment. The most common form of this pre-treatment is grease traps and grease interceptors.

Failure to maintain those pre-treatment devices puts at risk the collection system and the treatment process. It is not uncommon for an unmaintained grease trap to cause blockages in sewer mains that result in sewer overflows. As a result, the failure to maintain a pre-treatment device can seriously jeopardize human health. Further, if the failure to maintain the pre-treatment system results in a process upset at the treatment facility, recycled water quality can be affected.

As part of our source control program, Global Water technicians inspect pre-treatment devices on a monthly to quarterly basis (the frequency is determined by past performance of these systems). While the majority of commercial customers comply with our source control requirements, those who do not can cause serious issues.

If the customer is not complying, Global technicians are required to re-inspect the facility routinely, significantly increasing the operational costs associated with this program. To defray those costs, we are recommending that a charge of $250 be assessed on commercial customers found to be violating our source control requirements. This will allow for the cost recovery of those increased costs and will discourage the practice of not maintaining grease traps.

*F. Unauthorized discharge fee.*

**Q. Please explain the proposed charge for unauthorized discharge into sewer.**

A. For the same reasons it is vital that our source control program is adhered to and that no unauthorized discharges to sewers are made. One of the most difficult aspects of capacity management and maintenance is ensuring that the sewers are not used illegally by septic tank haulers, or grease trap haulers. These industries charge a fee for removal services and then pay a fee to locations like Waste Management's Butterfield landfill for environmentally sound disposal. Rather than paying these fees, some haulers choose to simply dump their loads into a sewer system. Some of the materials that the haulers carry have the potential to seriously disrupt our treatment processes – in some cases for many days or even weeks. We are recommending the establishment of a $5,000 charge under an **Unauthorized Sewer Discharges Tariff**. Further, we recommend the violator be financially responsible for all costs of collection and remediation.

*G. Deposit Interest.*

**Q. Why do the Global Utilities wish to amend the interest paid on deposits?**

A. The deposit interest rule requires that utilities provide a 6% return on deposits made to secure utility service. R14-2-403.B.3 states:

> 3. Interest on deposits shall be calculated annually at an interest rate filed by the utility and approved by the Commission in a tariff proceeding. In the absence of such, the interest rate shall be 6%.

While the benefits of deposits for current or would-be delinquent accounts is undeniable, the fact remains that in most cases, the customer pays the deposit, and is refunded that deposit after a year of on-time payments. For each deposit taken and refunded, there is a significant amount of administrative work. The work required to administer these deposits is a significant burden on the utility.

**Q. What do the Global Utilities do with deposits?**

A. We maintain the deposits as current liabilities in separate accounts. As such, this is not money that is "put to work" within the utility nor can the utility earn any interest on the money. The money must simply sit idle until called upon by delinquency of service or until returned to the customer.

Accordingly, the Global Utilities do not benefit financially from the requirement for customers to establish deposits for service.

**Q. What do the Global Utilities propose?**

A. The administration of deposits is a significant process.

1. The deposit must be collected.
2. The cash must be deposited.

3. Separate accounting entries must be coordinated to ensure the cash hits the correct account.
4. Monthly, an analysis must be performed to establish which accounts are due for deposit refunds.
5. Checks must be cut for some of these amounts; others are applied manually to the accounts.
6. If the customer is delinquent twice in a twelve month period, the process must be repeated.

All of this costs the utility real money – on top of the interest requirement of AAC R14-2-403.B.3. And the utility expends significant resources to return this money with interest.

Accordingly, we recommend that the deposit interest be set at 0%. The costs associated with collecting and returning deposits are great enough without having to pay additional amounts to the depositors.

***H. Other miscellaneous fees.***

**Q. Are the Global Utilities proposing modifications to other fees?**

A. Yes. Our proposals are shown below.

## Miscellaneous Fee Changes:

Global Utilities requests the following changes to the standard charges included in utility tariffs:

| Item | Current Fee | Recommended Fee | Notes |
|---|---|---|---|
| Establishment | $25 - $35 | $50 | The costs associated with the set up of an account have increased since the original establishment of these charges. |
| Establishment (After Hours) | $40 - $50 | $100 | The costs associated with reconnecting a service after hours are substantially higher than during normal working hours as an on-call person is required to perform the work. |
| Reestablishment (Within 12 Months) | * | No change | |
| Reconnection (Delinquent) | $30 - $35 | $75 | The process of re-connection requires that a customer service representative take and validate a payment, update the customer information system, generate a work order, deploy a service technician, physically perform the re-connect, close the work order and update the account. |
| Meter Move at Customer Request | ** | As per AAC R14-2-405.B.5 | |
| After Hours Service Charge, Per Hour | $0 - $50 | $50 | |
| Deposit | *** | 0% | As noted in testimony above. |
| Meter Re-Read(If Correct) | $15 - $25 | $30 | To reflect the costs of manually dispatching a technician to the site. |
| Meter Test Fee (If correct) | $0 - $35 | $50 | To reflect actual costs of the test and to cover the cost of removal, installation and transport of a meter. |
| NSF Check | $10 - $15 | $30 | To reflect actual costs charged to Global ($15), and the administration of those accounts (annotating customer accounts and generating follow-up activity such as disconnect notices) |
| Late Payment Charge (Per | $3.00 - 1.50% - Greater of | Greater of 1.5% or $5.00 | |

| | | |
|---|---|---|
| Month) | 1.5% or $5.00 | |
| Deferred Payment (Per Month) | 1.50% - Greater of 1.5% or $3.50 | Greater of 1.5% or $5.00. |

*** Number of Months off System times the monthly minimum per A.A.C. R14-2-403(D).**

**** Cost to include parts, labor, overhead and all applicable taxes.**

***** Per A.A.C. R14-2-403(B).**

## VIII. Engineering Data.

**Q. Have you attached relevant engineering data concerning the Global Utilities?**

A. Yes. Compliance Status Reports for each of the Global Utilities are included as Attachment GSS-4, Plant Summaries for each of the Global Utilities are included as Attachment GSS-5, Water Use Data Sheets are included as Attachment GSS-6, and MAP invoices are included as Attachment GSS-7.

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

A. Yes it does.

# Symmonds Exhibits

# GSS 1

# THE ENERGY AND WATER EFFICIENCY BENEFITS OF DISTRIBUTED RECYCLED WATER PRODUCTION FACILITIES[1]

**Graham Symmonds[2], P.Eng.**
**Trevor T. Hill, P.Eng.**

**Abstract.** Water and energy are inextricably linked. Moving water, heating water, treating water are each enormously energy intensive. Further, the very production of power consumes vast quantities of water. In an ironic twist, as the world reaches deeper into the ground for water supplies, and moves farther afield to access water, getting that water to where it is needed requires more power, which in turn requires more water.

Water scarcity and the energy intensity of water are placing extreme pressure on natural resources and power systems throughout the world. That water/energy nexus – the link between power and water – demands that the most power efficient systems be deployed first, and then augmented by power intensive technologies for only the minimum volumes associated with potable water production.

That most efficient water resource is recycled water. When deployed as an element of a regional planning initiative, using recycled water can consume 25% to 50% less power than single plumbed, all potable, systems. For a 70,000 unit development, the resultant cumulative energy savings are in the order to 11% of the entire energy budget for the community. This reinforces the water savings of water recycling which can reduce the community water consumption by as much as 60%.

Additional Key Words: Water efficiency; water/energy nexus; water recycling; water reuse.

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[1] Paper was presented at the 2008 Meeting of the American Institute of Professional Geologists, Arizona Hydrological Society, and 3rd International Professional Geology Conference, Flagstaff, Arizona, USA, September 20-24, 2008. Published by the American Institute of Professional Geologists.

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## INTRODUCTION

*Tlaloc[3] is hydrology, I thought. The deity is a metaphor for the full hydrological cycle of moisture, ice, rain, snow, dew, and fog; pooling, draining, and evaporating. It is the movement of water, the lifeblood of the Southwest, a meter that any civilization here must obey (Childs, 2007).*

Water and energy are inextricably linked. Moving water, heating water, treating water are each enormously energy intensive. Further, the very production of power consumes vast quantities of water. In an ironic twist, as the world reaches deeper into the ground and farther afield to access water supplies, getting that water to where it is needed consumes more power, which in turn requires more water.

Water efficiency then, is power efficiency. And vice versa. If the amount of water required can be reduced, power requirements will be dramatically decreased. This reduction has the benefit of reducing greenhouse gas emissions, their contribution to global climate change, and the impact on water availability.

Regional planning – allowing for the distributed production of recycled water – is key to minimizing water resource consumption, and by extension, reducing power consumption. Planning on a large, distributed scale allows for a significant reduction in potable water consumption via water reuse, leading directly to a concomitant reduction in power production and distribution costs. Producing water where it is needed reduces water transmission costs, driving efficiencies into the systems.

## THE FINITE NATURE OF WATER

Water, in its pure form, is a simple compound of two hydrogen atoms and one oxygen atom (Figure 1). All the hydrogen nuclei in the universe were formed within the first three minutes of the Big Bang. One to three minutes after the formation of the universe, protons and neutrons began to react with each other to form deuterium, an isotope of hydrogen. Deuterium, or heavy hydrogen, soon collected another neutron to form tritium. Rapidly following this reaction was the addition of another proton which produced a helium nucleus. After further cooling, these excess protons were able to capture an electron to create common hydrogen. (LaRocca and Rothstein). After a further 300,000 years of cooling, the universe became cool enough for electrons to be captured, and the first stable atoms of hydrogen appear (Figure 2).

[3] Tlaloc, He Who Makes Things Sprout. Tlaloc is the Mesoamerican god of rain, lightning and thunder. Among the modern Maya and the more northerly Nahua, Tlaloc lives in what is called the House of Rain, an underground realm full of water.

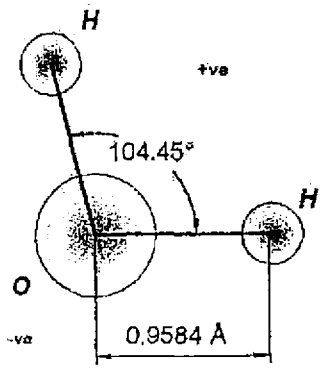


**FIGURE 1.** Water molecule, $H_2O$.

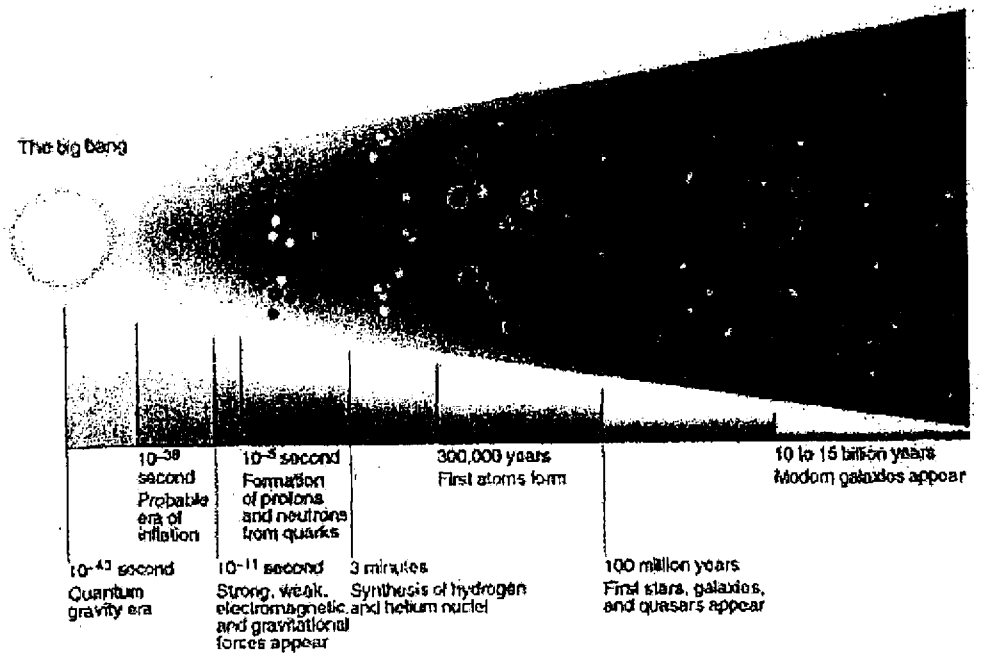


**FIGURE 2.** Big Bang matter timeline and formation of hydrogen and helium (Anninos, 2003).

Over the course of eons, hydrogen gases gravitationally contracted to form the first stars in a process that continues today. Within the thermonuclear furnaces of stars, hydrogen and helium were synthesized by nucleosynthesis into neon, carbon, oxygen, and iron. As stars reach the end of their lives, they shed these elements in nova and supernova dispersing these heavier elements to the universe. Hydrogen and oxygen mix in star-forming clouds where temperatures soar to several thousand degrees, setting off chemical reactions favoring production of water (Figure 3).

In the primordial solar system, this water vapor coalesced on particles and ultimately was delivered to planetary systems like Earth through accretion or by collision with intraplanetary bodies such as comets. Earth's supply of water, then, is fixed and was established 3.8 to 4.5 billion years ago during its very formation.

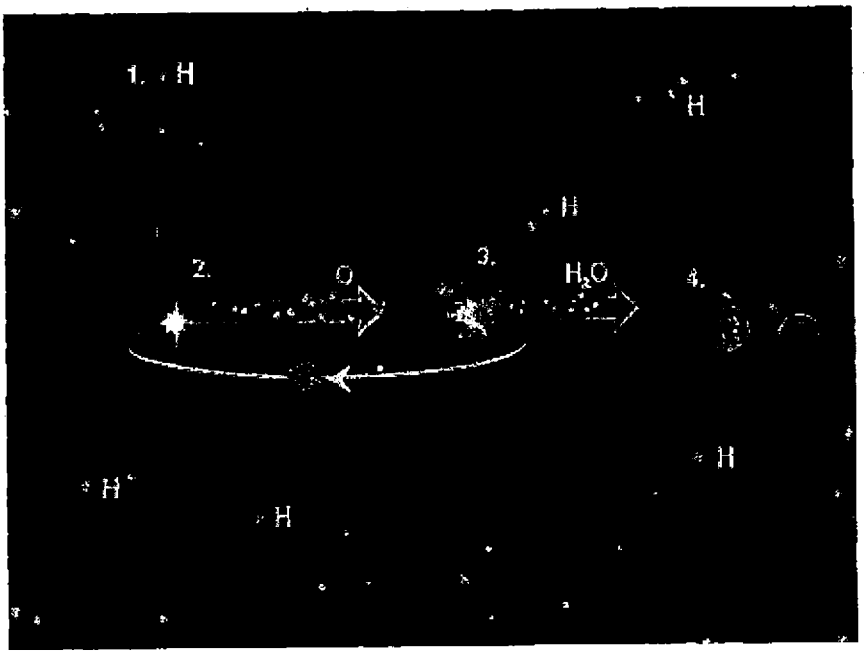


**FIGURE 3.** How water is made in space (European Space Agency). Hydrogen (1) was originally produced in the Big Bang and is found everywhere in the universe. Oxygen (2) is made in stars and dispersed out into the universe in events such as supernova explosions. The two elements mix in star-forming clouds (3) and form large amounts of water. The molecules of water leave the clouds and end up in many different places (4) - comets, planets, the centers of galaxies etc.

The earth has constantly recycled this water through countless turns of the continuous hydrologic cycle. Within this cycle 363,000,000,000,000,000,000 gallons (363 million trillion gallons) of water can be found (Table 1). This water evaporates from the ocean, travels through the air, rains down on the land and then flows back to the ocean. While this water source is vast, the overwhelming majority of water is either unsuitable for human consumption, or remains in locations or states that are not accessible. In fact, only 0.8% of this water is available for use by humans.

TABLE 1. Global water inventory (Gleick, 1996)

| Water source | Water volume, in cubic miles | Water volume, in cubic kilometers | Percent of freshwater | Percent of total water |
|---|---|---|---|---|
| Oceans, Seas, & Bays | 321,000,000 | 1,338,000,000 | -- | 96.5 |
| Ice caps, Glaciers, & Permanent Snow | 5,773,000 | 24,064,000 | 68.7 | 1.74 |
| Ground water | 5,614,000 | 23,400,000 | -- | 1.7 |
| Fresh | 2,526,000 | 10,530,000 | 30.1 | 0.76 |
| Saline | 3,088,000 | 12,870,000 | -- | 0.94 |
| Soil Moisture | 3,959 | 16,500 | 0.05 | 0.001 |
| Ground Ice & Permafrost | 71,970 | 300,000 | 0.86 | 0.022 |
| Lakes | 42,320 | 176,400 | -- | 0.013 |
| Fresh | 21,830 | 91,000 | 0.26 | 0.007 |
| Saline | 20,490 | 85,400 | -- | 0.006 |
| Atmosphere | 3,095 | 12,900 | 0.04 | 0.001 |
| Swamp Water | 2,752 | 11,470 | 0.03 | 0.0008 |
| Rivers | 509 | 2,120 | 0.006 | 0.0002 |
| Biological Water | 269 | 1,120 | 0.003 | 0.0001 |

## WATER MANAGEMENT STRATEGIES IN THE ABSENCE OF NEW WATER

### WATER SCARCITY IN THE SOUTHWEST

The American Southwest remains in the grips of a drought. Notwithstanding the increased precipitation received by the Phoenix area in winter 2007/08, water conditions remain dire. Recent tree-ring research has indicated that long term droughts are not unusual in this region. As a result, water resource planning in the Southwest must anticipate, expect, and plan for, extended periods of drought. This is particularly true in light of climate change and its affect on weather patterns.

Figure 4 compares the time period known as "the medieval climate anomaly"[4] (Meko et al, 2007) to the most recent flow data for the Colorado River. While a simple shape-driven fit, it demonstrates the drought patterns may be repeatable – and that both low and high frequency patterns exist.

[4] The Medieval Climate Anomaly describes a period of epic droughts that are hypothesized from paleoclimatic evidence to have affected various parts of western North America in the mid 1100's. This is hydrologic drought is characterized by a decrease of more than 15% in mean annual flow averaged over 25 years, and by the absence of high annual flows over a longer period of about six decades.

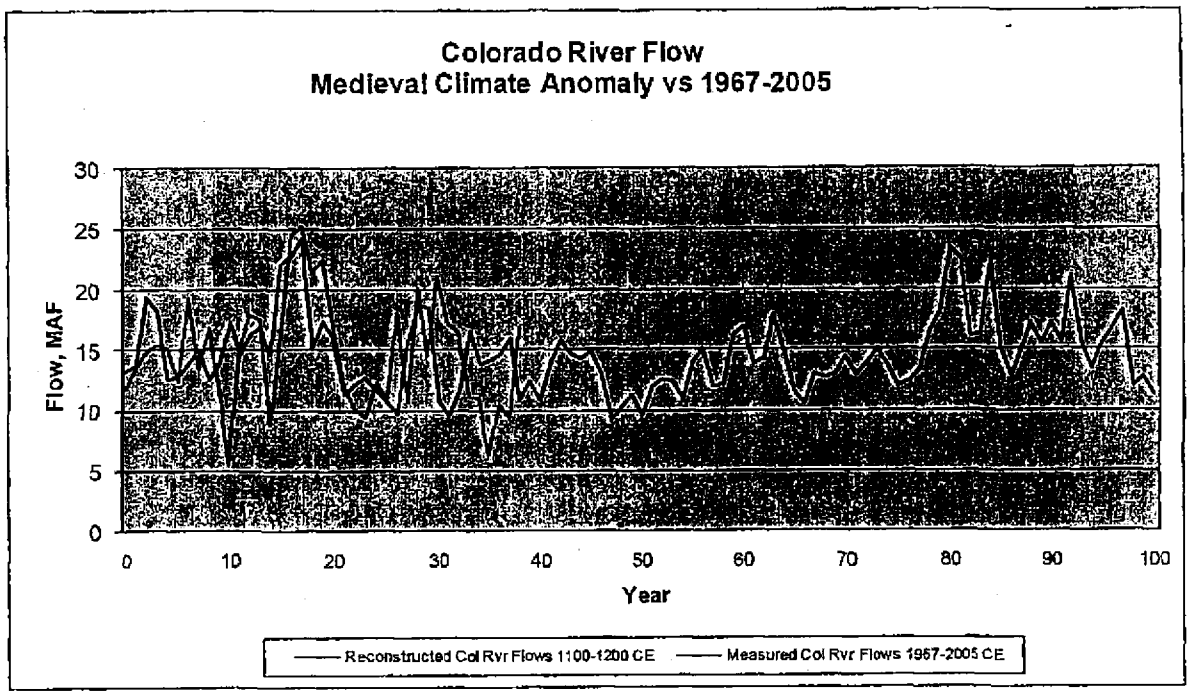


**FIGURE 4.** Comparison of measured Colorado River Flows (at Lee's Ferry) from 1967 to 2005 against the tree-ring derived Medieval Climate Anomaly (adapted from Meko et al, 2007).

If the last 35 to 40 years are, as suggested in the graph above, foretelling the entry into a similar hydrologic drought as described by the medieval climate anomaly, the effect will be more profound as a result of population (orders of magnitude above that extant in the year 1150) and the accompanying additive – or potentially geometric – impacts of increased greenhouse gas concentration in the atmosphere, including larger amplitude and frequency fluctuations within the hydrologic cycle. These effects can already be seen in the changes in snowpack arrival/melt times as well as volumes. Those changes will drive continued water shortages in the Southwest.

## POPULATION GROWTH IN THE SOUTHWEST

Superimposed upon water scarcity in the Southwest is the continued population growth, and the concomitant changes in the fabric of the landscape – that is conversion of desert areas to urban, suburban and commercial living spaces. This trend continues despite the current economic turndown. Table 2 provides U.S. Census data comparing Arizona's current and projected population growth demonstrating that Arizona will continue to see extreme growth pressures.

**TABLE 2.** Population projections for Arizona (U.S. Census Bureau)

| Arizona Population Projections | |
|---|---|
| 2007 Estimated Population | 6.3 million |
| Projected Population Growth 2030 | 10.7 million |
| Total Percentage Growth 2007-2030 | 67.2% |

Arizona's growing population will require an increasing supply of water. The convergence of water demand, population growth, climate change and landscape change results in two inexorably linked effects: increasing water scarcity; and increasing power demand. To address these issues, the most efficient source of water must be selected for future uses. Minimizing the power intensity of water, minimizing potable water requirements, distributed treatment and delivery systems each can have dramatic impacts on the power and water resources.

## WATER REUSE CONFIGURATIONS

Water reuse involves both direct reuse and aquifer recharge. Direct reuse of recycled water is relatively straightforward. Wastewater is treated to a high level at a water reclamation facility for reuse and, rather than discharging the product unused into the environment, recycled water is distributed for a variety of secondary uses.

**Direct Reuse.** There are a number of different water delivery mechanism and strategies for providing recycled water for a variety of end uses. These can be divided into three broad categories: No Recycling (Figure 5), Basic Recycling (Figure 6) and Advanced Recycling (Figure 7).

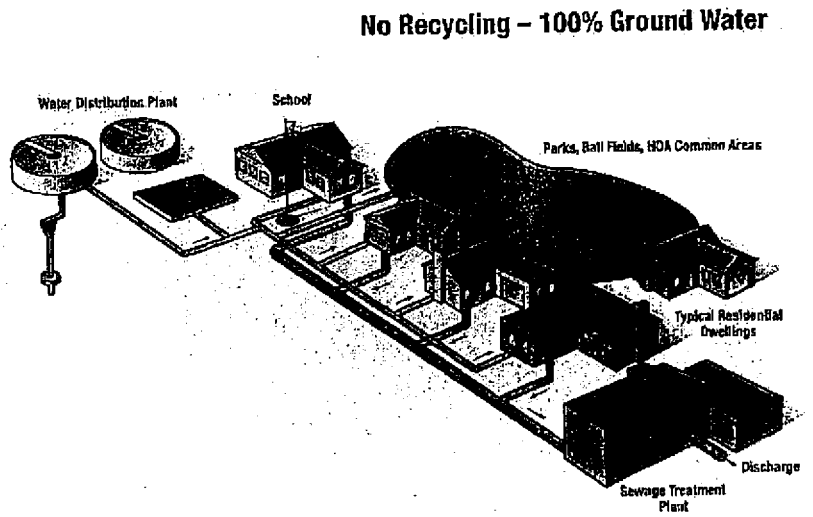


**FIGURE 5.** No Recycling Configuration. This is the standard water delivery methodology and employs potable water for all uses in a single-plumbed community.

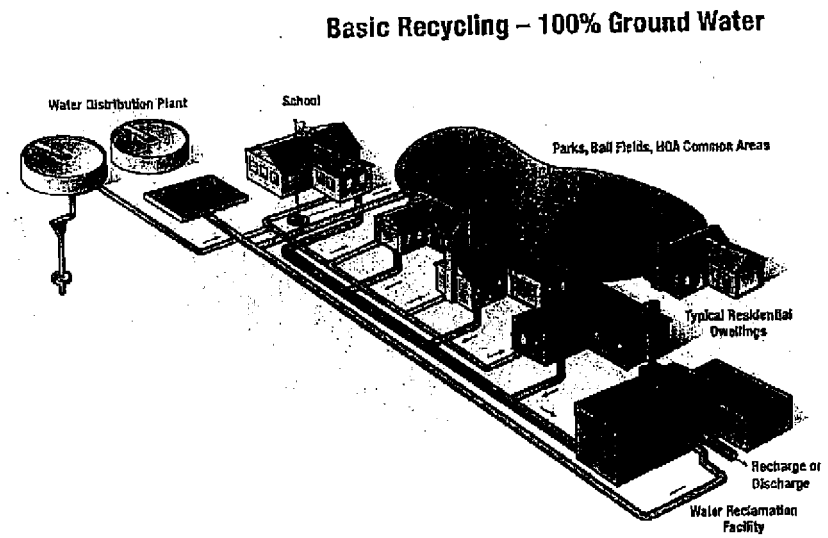


**FIGURE 6.** Basic Recycling Configuration. Basic recycling represents the deployment of recycled water for irrigation purposes. It is limited to using recycled water for irrigation of common areas, Homeowners Association open spaces, community amenities and schoolyards.

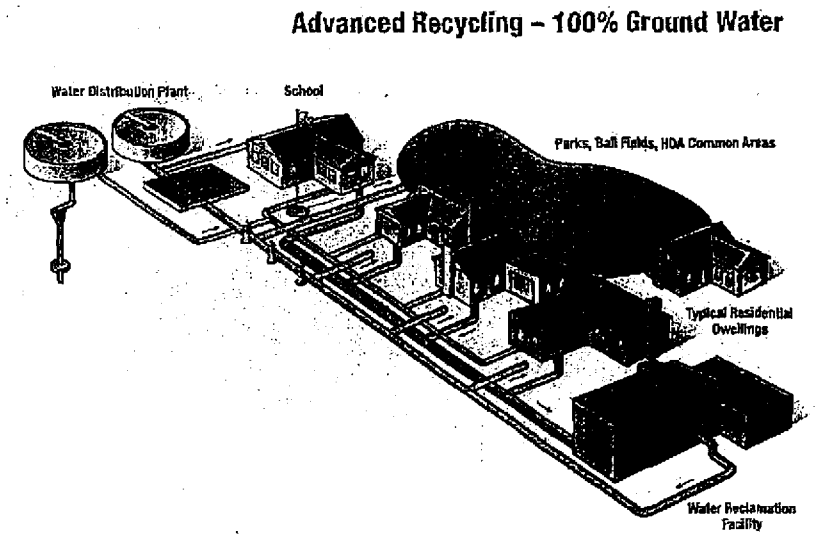


**FIGURE 7.** Advanced Recycling Configuration. In this case, recycled water is deployed through a dual-plumbed, highly distributed network allowing for the delivery of recycled water for the best and highest uses possible.

**Aquifer Recharge.** Recharging recycled water into the underlying aquifer is an important aspect of resource management. However, from an efficiency perspective (power and water) it is inferior to direct reuse. Recharge is a method of achieving seasonal resource equalization (i.e., storing recycled water in winter months for withdrawal and use in summer months), but it falls short in the "highest-and-best-use" category. There are a number of benefits that direct reuse has over recharge:

- Recharge requires power to put the water back into the aquifer and additional power to withdraw for use.
- Recharge facilities are complicated by local geology, wildlife and cultural concerns.
- Recharge has the potential to increase salinity in the aquifer.
- Recharge has the potential to inject contaminants of emerging concern to aquifers.
- Recharge is often disconnected from water withdrawal leading to localized aquifer drawdown.

## THE WATER-EFFICIENCY OF REUSE

In Arizona, a typical suburban dwelling unit consumes an aggregate of approximately 130,000 gallons (0.4 acre-feet) of water per year. As shown in Figure 8, in areas without consideration of water recycling, all of this water must be supplied by the potable water system. By applying the principles of regional planning, and ensuring that recycled water infrastructure is available, the potable water demand can be significantly reduced by using recycled water.

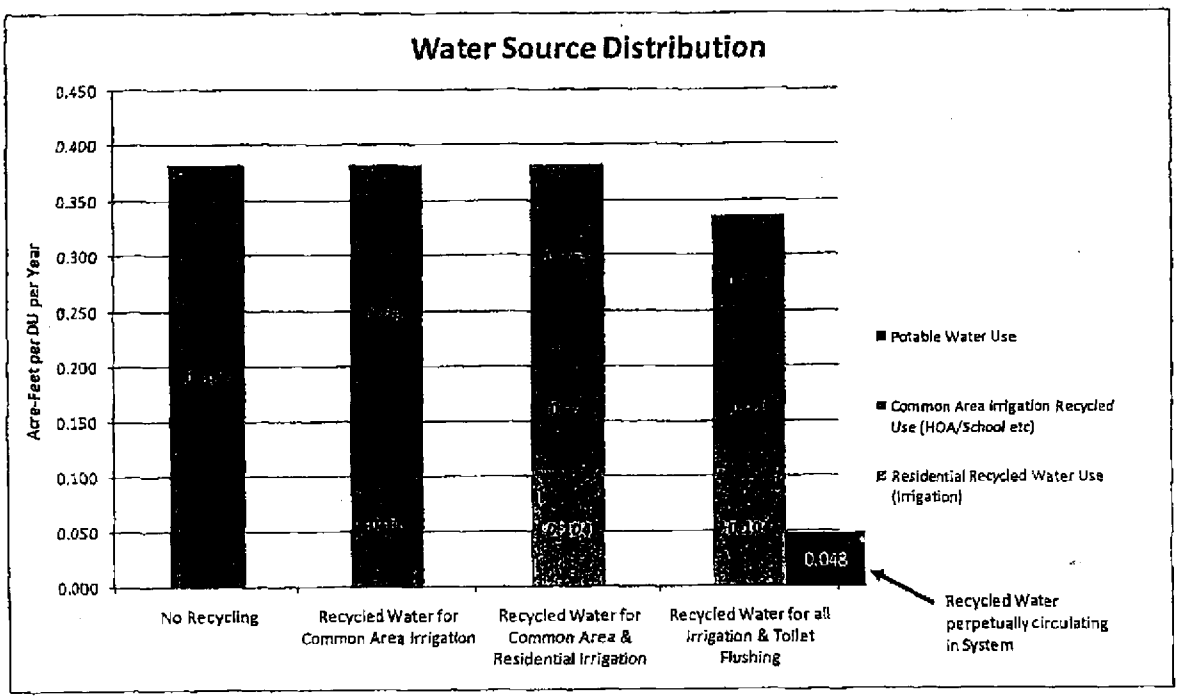


**FIGURE 8.** Comparison of water use under different water supply configurations.

Indeed these theoretical numbers are those being achieved at Global Water–Santa Cruz Water Company. In 2005, prior to the implementation of a recycled water plan, Global Water–Santa Cruz's overall consumption of potable water per connection customer was 12,286 gallons per month or 0.45 acre-feet per year (AFY). In 2007, as recycled water infrastructure advanced, Global Water–Santa Cruz connections used 0.24 AFY of potable water and 0.13 AFY of recycled water (Global Water–Santa Cruz Water Company, 2007).

## WATER MANAGEMENT STRATEGIES IN THE FACE OF REDUCED POWER AVAILABILITY

The local impacts of water scarcity are forcing that water be imported from further afield, either from deeper in the aquifer, or from other geographic locations. That water – an extremely bulky and heavy commodity – must be transported from that new location to the point of use.

The result is an ever increasing demand for power to move water. In California, the California Energy Commission has estimated that 20% of the electrical power, and 30% of natural gas consumption is associated with water transportation and use (Larson et al, 2007).

Further, drought and environmental impacts have heightened concern about hydropower availability, particularly with respect to the climate-change-induced disruption of snow pack and rain fall patterns (Barnett and Pierce, 2008).[5]

While new alternatives such as wind, solar and new nuclear power generation exist to supplant this loss in hydroelectric power availability, they have significant technical and regulatory challenges to overcome. Clearly, then, the most efficient water delivery system is one that reduces the amount of energy per unit volume delivered.

## THE POWER-EFFICIENCY OF WATER REUSE

Water's power intensity is directly related to its source, the required treatment to bring it to potable standards, and its use. Figure 9 provides empirical and estimated power intensity data for various water sources. As expected, seawater desalination processes are extremely power intensive, and as the quality and local availability of the source water improves, the power cost of production decreases.

It is interesting to note that recycled water is the most power efficient water source available. This is due to the following:

1. The water is already on the surface;
2. The water does not need to be treated for consumption[6]; and
3. The use of recycled water often supplants other, more energy intensive, sources.

[5] The Scripps Institution of Oceanography has speculated that "minimum power pool levels" (that is, the level at which hydroelectric power can no longer be produced from Hoover Dam) in both Lakes Mead and Powell could be reached under current conditions as early as 2017. (Barnett and Pierce, 2008)

[6] While the water is not "potable", Class A+ recycled water in Arizona is required to meet the state's Aquifer Water Quality Standards at the Point of Compliance. In California, recycled water for unrestricted reuse is required to meet Title 22 requirements.

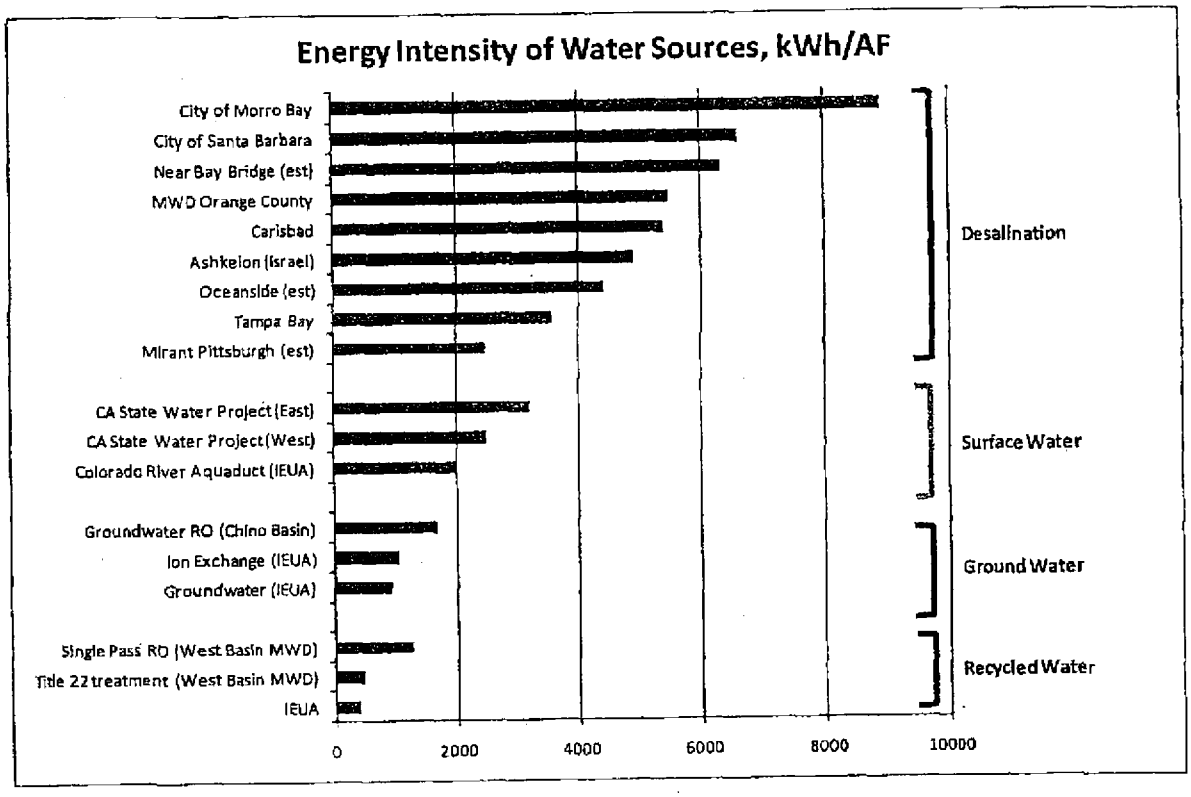


**FIGURE 9.** Energy intensity of Water Sources in kWh per Acre-Foot (R.C. Wilkinson, 2007)

The most efficient water delivery system is one that reduces the amount of energy per unit volume delivered. By employing advanced water recycling techniques, the specific energy consumption (kilowatt-hours per dwelling unit per day, kWh/DU/d) can be reduced by 25 to 50% depending on the source and treatment requirements.

In order to demonstrate this and evaluate more closely the impact of applying different water sources and delivery methods on the energy requirements, a model was developed to map the power intensity of various unit processes in the system: source water transport; source water treatment; potable water distribution; wastewater collection, wastewater treatment; recycled water delivery.

This model is based on empirical specific power consumption data from operating utilities and power consumption information derived from engineering calculations from model inputs.

**Case 1: Groundwater Source.** In this case (Table 3), water is withdrawn from an aquifer at 300 feet below land surface (BLS). The water quality is assumed to meet the requirements of the Safe Drinking Water Act without treatment. Water is distributed (at a pressure of 72 psi) to end-users for consumption and use. A portion of this water is returned as wastewater -- 145 gallons

per dwelling unit per day (Global Water – Palo Verde Utilities Company, 2007). Some of this wastewater (35%) is assumed to require pumping to return to the water reclamation facility. The recycled water distribution system is operated at 10 psi less than the potable water system. Wastewater is treated to become recycled water (Arizona Department of Environmental Quality Class A+) and is either:

1. Discharged (in the case of the No Recycling model);
2. Employed to offset common area irrigation (in the case of the Basic Recycling model); or
3. Employed for common area irrigation and household irrigation/toilet flushing use (in the case of the Advanced Recycling model).

**TABLE 3.** Cumulative Specific Power Consumption (kWh/DU/d) for the case of groundwater requiring no treatment.

| | **Groundwater + No Treatment + No Recycling** | **Groundwater + No Treatment + Basic Recycling** | **Groundwater + No Treatment + Advanced Recycling** |
|---|---|---|---|
| Water Table @ 300 ft BLS | 3.4 | 2.7 | 2.2 |

The result of employing water recycling is an overall reduction in power consumption of 21 to 35% by employing recycling schemes. This is driven primarily by a reduction in the amount of potable water required to be pumped from the ground. Figure 10 shows the cumulative specific power consumption at each stage in the process.

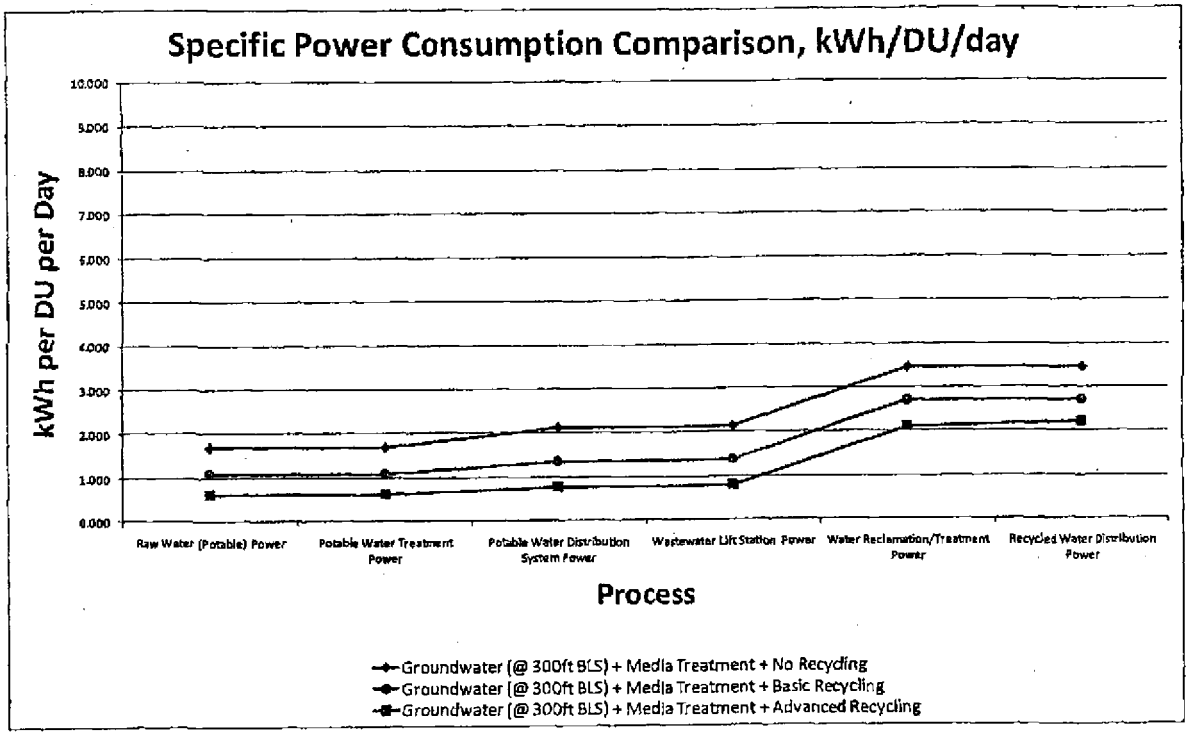


**FIGURE 10.** Case 1 Specific Power Consumption (Groundwater requiring no treatment)

**Case 2: Seawater Reverse Osmosis (SWRO).** In this case, the facility is assumed to be located with direct access to feed water (ocean) and a direct discharge of any brine. SWRO power consumption data is estimated as an average from those shown in Figure 9. The RO recovery is estimated at 43%. The distribution, collection and wastewater treatment parameters remain the same as in the previous case.

**TABLE 4.** Cumulative Specific Power Consumption (kWh/DU/d) for the case of sea water reverse osmosis treatment.

| | **Seawater Desalination + No Recycling + No Brine Treatment** | **Seawater Desalination + Basic Recycling + No Brine Treatment** | **Seawater Desalination + Advanced Recycling + No Brine Treatment** |
|---|---|---|---|
| Sea Water RO Process | 8.0 | 5.7 | 3.9 |

The impacts of applying recycling in this case are dramatic. A savings of 29 to 52% of the specific power consumption is achieved (Table 4). This is a direct result of having to treat

less water for potable purposes. The power intensity of the SWRO process is clearly evident in Figure 11.

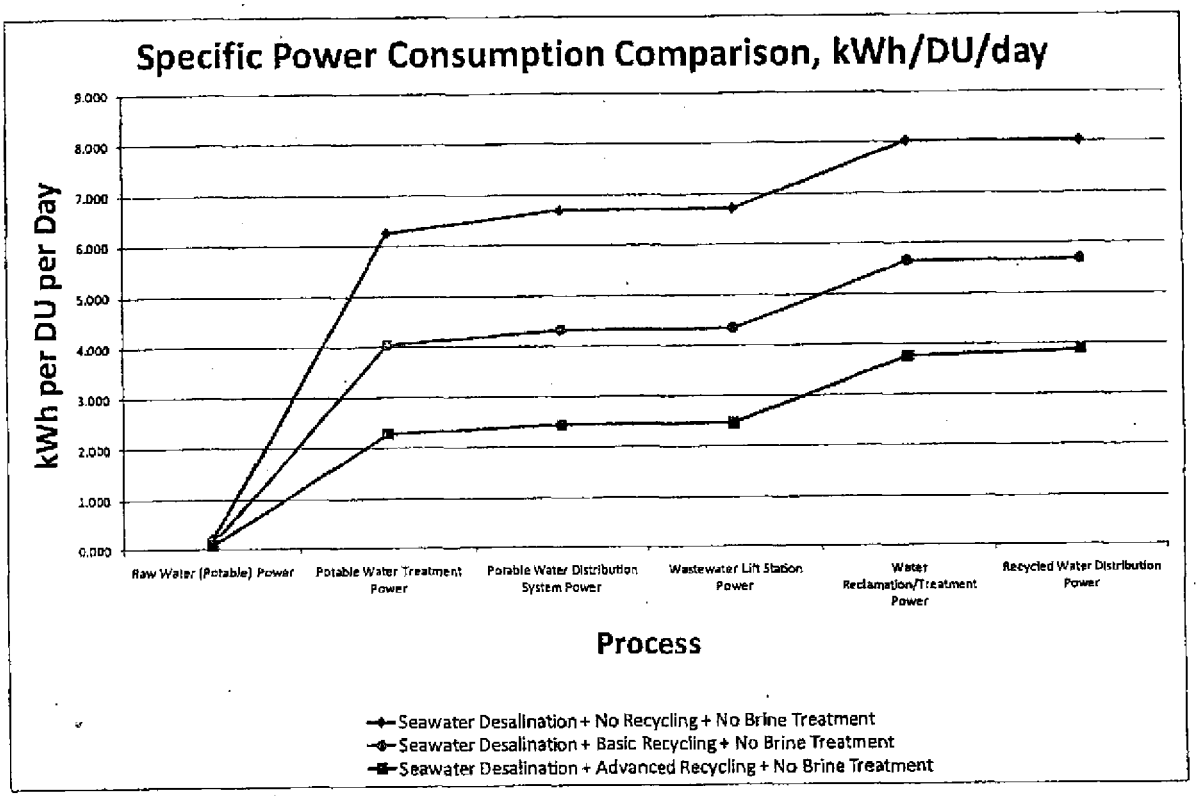


**FIGURE 11.** Case 2 Cumulative Specific Power Consumption (kWh/DU/d) for the case of sea water reverse osmosis treatment.

## SENSITIVITY ANALYSIS

**Well Depth.** The model is very sensitive to the depth from which water is required to be brought to the surface. In the original analysis, a 300 ft BLS value was employed. In the Phoenix Active Management Area, assured water supplies are provided on the basis of an aquifer drawdown to 1100 feet BLS over a one hundred year period. Employing this value in the model (that is, assessing the impact of water level decline in the aquifer), the specific power consumption increases by 160 to 206% as shown in Table 5. Recycling continues to offer significant power savings.

**TABLE 5.** Effect of water table depth on specific power consumption (kWh/DU/d).

| | Groundwater + No Treatment + No Recycling | Groundwater + No Treatment + Basic Recycling | Groundwater + No Treatment + Advanced Recycling |
|---|---|---|---|
| Water Table @ 300 ft BLS | 3.4 | 2.7 | 2.2 |
| Water Table @ 1100 ft BLS | 7.0 | 5.0 | 3.5 |
| Increase in specific power consumption | 106% | 85% | 59% |

**Energy Recovery Systems Employed in RO Applications.** A new development in the application of reverse osmosis systems is the implementation of energy recovery systems, allowing energy from the high pressure brine feed to be transferred to the low pressure feedwater side. These systems directly reduce the power consumption. Published data suggests these systems can reduce energy consumption by as much as 60 to 62% (Jamaluddin et al, 2002).

Applying these devices to the model (Table 6), the overall specific power consumption decreases (by 35 to 47%) when compared to the non-energy recovery case (Case 2 above). Advanced recycling still represents a 42% reduction in specific power consumption:

**TABLE 6.** Effect of employing energy recovery systems on sea water reverse osmosis specific power consumption (kWh/DU/d).

| | Seawater Desalination + No Recycling + No Brine Treatment | Seawater Desalination + Basic Recycling + No Brine Treatment | Seawater Desalination + Advanced Recycling + No Brine Treatment |
|---|---|---|---|
| Sea Water RO Process | 8.0 | 5.7 | 3.9 |
| Sea Water RO Process with Energy Recovery | 4.3 | 3.3 | 2.5 |
| Decrease in specific power consumption | 47% | 43% | 35% |

## DISTRIBUTED ENERGY/WATER SITES

The opportunity for mega-scale water treatment and power generation facilities is rapidly evaporating. These facilities, located far from the ultimate use become increasingly inefficient and more costly to operate as that distance increases. The raw materials must be transported to these facilities, and then the finished product returned for consumption.

Decentralized treatment, production and delivery maximizes the efficiency of these processes, generates the products where they are needed/used, where the raw materials exist, and allows for the production of a distributed network of power generation facilities.

The Global Water Decentralized Energy/Water (DEW) sites are designed around the service requirements of a standard township (six by six miles, 36 square miles). At a build-out capacity in the order of 70,000 dwelling units (including commercial and light industrial), and operating with groundwater at a depth of 300 feet BLS, each of these facilities employed in an Advanced Recycling configuration can save in the order of 10 million gallons per day (MGD) of water, and 83,000 kWh per day of power (the equivalent of 3.5 MW of production capacity).

When advanced potable water treatment is required (for example seawater desalination) or that source water is required to be transported any appreciable distance, the power savings increase to 290,000 kWh per day – or 12 MW of production capacity. This represents 11% of the total power consumption within the 70,000 unit community[7].

Wastewater units, with their have significant land holdings set aside as setback areas for odor, noise and aesthetic controls, can deploy significant power generation capacities. The Arizona Department of Environmental Quality require that treatment systems provide a minimum of 350 feet of setback[8]. A nominal DEW site parcel, 1100 ft by 1300 ft, provides approximately 20 acres of available land for power production such as photovoltaic solar power, stirling engine solar power and/or biogas cogeneration. In the case of photovoltaic solar generation, this provides an area for 4 to 5 MW of generation. These distributed facilities can become net producers of power during the day as shown in Figure 14, and producing 28% of the required power at build-out (10 MGD).

[7] The average household power consumption in Arizona is 1,104 kWh/month (U.S. DOE EIA, 2006). For a community of 70,000 dwelling units, the average daily consumption would be 2,576,000 kWh.

[8] Arizona Administrative Code R18-9-B201.I.

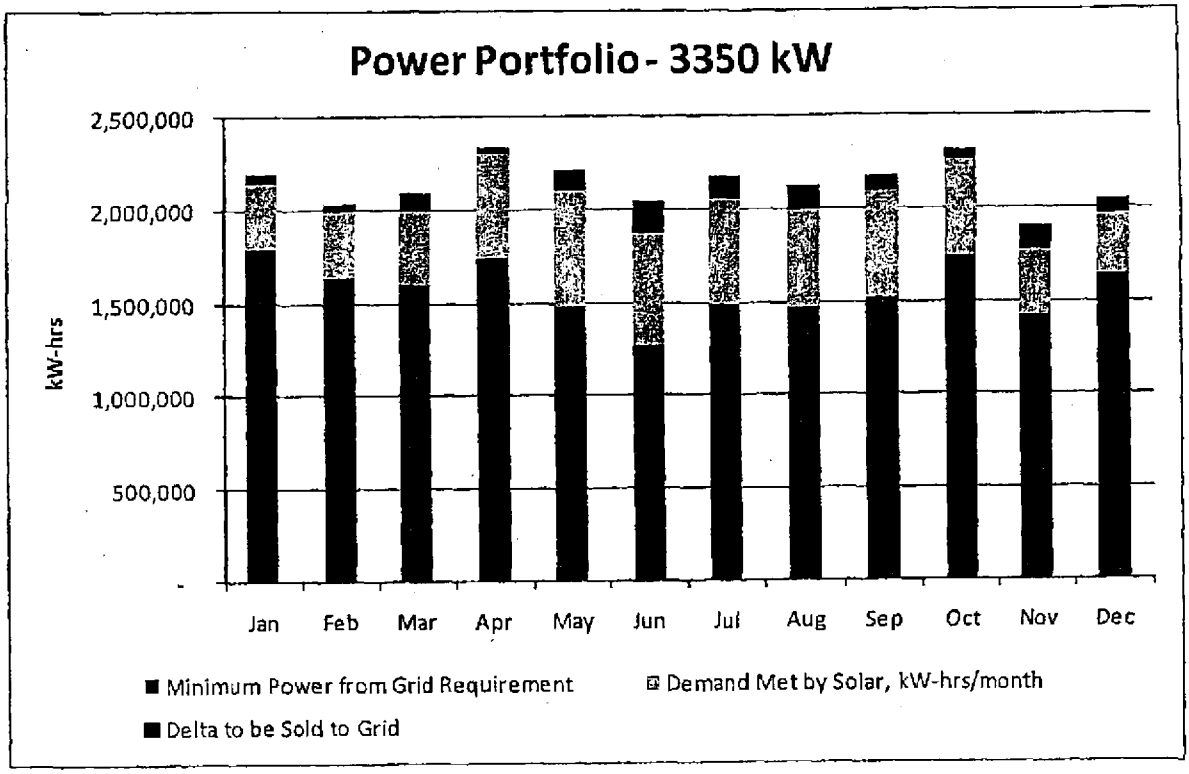


**FIGURE 12.** Potential solar energy production from distributed water reclamation facilities.

Further, the integration of water reclamation and power generation facilities can serve to shave the peaks off the power demand. The diurnal demand for water generally follows the sun: water demand is highest during the day. By deploying solar power systems at water reclamation facilities that are producing power during these high demand periods, the instantaneous power consumption can be provided by the solar system, greatly reducing the amount of "spooling" power required to be available (that is, the power production capacity required to be instantaneously available for use).

The deployment of water recycling then, means substantially less power production capacity will be needed, and the availability of land around distributed water reclamation facilities allows for substantial power generation. Water recycling significantly reduces water consumption, reduces capital expenditures for power production and transmission facilities, and substantially reduces the production of greenhouse gases. The elimination of greenhouse gas release to the atmosphere will increase the stability of our environment, and decrease variability in water availability.

## COST OF POWER

In 2005, Arizona Public Service (APS) increased service rates by 9.21%. In 2006, the Arizona Corporation Commission approved an emergency rate application of 9% as temporary relief during the consideration of a 2007 rate increase application. That 2007 proceeding resulted in a further 6.8% increase. In 2008, APS filed for an additional 20.7% increase (Arizona Public Service, 2005-2008)

Compounded, these increases, unrecoverable by regulated water and wastewater utilities outside a general rate proceeding, represent an increase of 53% in the past four years.

The trend for higher power costs will continue unabated. Increasing demand for worldwide for fossil fuels, decreasing availability of hydroelectric capacity, and the significant regulatory hurdles to construct new facilities will conspire to ensure that power costs continue to rise. Future rate increases are expected to increase power costs an additional 50% over 2008 levels over the next five year period.

Employing power efficient water throughout a service area provides a hedge against these higher costs.

## CONCLUSIONS

Water scarcity and the energy intensity of water place extreme pressure on natural resources and power systems. While meeting water treatment objectives through advanced technologies can be achieved, in some cases these technologies exact a substantial power penalty. The water/energy nexus, that link between power and water, demands that the most power efficient systems be deployed first, and then augmented by power intensive technologies for only the minimum volumes associated with potable water production.

That most efficient water resource is recycled water:

1. Water re-use is the most power-efficient water source available. Keeping the water on the surface, and using it locally decreases the specific power consumption (kWh/DU/d) by 25% to 50%, resulting in a community-level power consumption reduction of 11%.

2. Regional water recycling planning efforts focus on maximizing reuse. Water reuse is the most water-efficient source available, offering a 40% to 60% reduction in the water consumption over conventional distribution plans

3. Regional water recycling planning deploys water reclamation facilities throughout the community, allowing water to be manufactured and used locally further reducing water transportation energy consumption.

4. A regional water recycling plan allows for deployment of irrigation systems and the establishment of greenspace in communities, which also reduce the overall power demand by encouraging the temperature moderating effects of these spaces[9].

5. Regional Water Reclamation Facilities can be configured into Distributed Energy/Water sites to generate a significant amount of energy from renewable technologies. In a photovoltaic solar application, power can be generated on-site to reduce power consumption by 28%.

Going deeper and farther for water means higher power consumption. Using water most efficiently reduces this impact. A recycled water efficiency plan is, therefore, a *de facto* energy conservation plan.

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[9] Rapid urbanization of United States cities during the past 50 years has been associated with a steady increase in downtown temperatures (ranging from 0.1 to 1°C per decade). Because demand for electricity in United States cities increases by 3 to 4 percent per degree (C) of temperature increase, approximately 3 to 8 percent of current electric demand for cooling is used to compensate for this urban heat island effect. (Nowak and McPherson, 1993)

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# GSS 2

GLOBAL WATER

# Willow Valley Water Company

Global Water – Willow Valley Water Company (WVWC) held a Public Meeting to discuss Water Color and Quality on August 29th, 2007. At this meeting, Global Water presented a System Improvement Plan including general information on completed, active, and planned projects.

As promised, in our efforts to keep the customers informed, we will include a progress report with your monthly billing statements. Global Water will also keep a to-date progress report on our website @ www.gwresources.com. The link for this report is currently under construction and we will notify you upon its completion.

In the reports, I will continue to address the main concerns brought forth in the Public Meeting:

- Brown or Tea colored water
- Solids in the water
- Service outages
- Low pressure
- Water Safety

On the opposite side of this mailer, we have attached more information related to your concerns and the System Improvement Plan.

Global Water looks forward to working with our Willow Valley Customers as we improve the WVWC water system.

Respectfully,

*Ron Fleming*

Ron Fleming
General Manager
Global Water – West Valley Region

GLOBAL WATER

# Water Quality

All Global Water utilities produce and distribute water that meets all federal and state water quality criteria. Our waters are monitored for all regulated contaminants in accordance with the ***Safe Drinking Water Act*** (SDWA). In Mohave County, the SDWA is administered by the Arizona Department of Environmental Quality (ADEQ). In order to assure protection of your drinking water and to distribute safe potable water in accordance with the SDWA, we add sodium hypochlorite (chlorine) for disinfection. Sodium Hypochlorite is a disinfectant and an oxidant. The addition of sodium hypochlorite causes a chemical reaction with the iron and manganese, making them return to a solid state. When iron and manganese become solid, they cause the water to turn brown. Unfortunately, the more disinfectant we add to provide safe drinking water, the darker the water becomes.

Brown or "Tea" colored water is a problem in the Mohave Valley area but it is not a safety issue, it is an appearance issue. Iron and manganese are naturally occurring minerals that humans can safely consume. However, due to the water color problems associated with these two minerals, Willow Valley Water Company is working to minimize the coloration effect.

Global Water is committed to serving the highest quality water and are working closely with the Arizona Department of Environmental Quality on the progress of our efforts. Your continued patience and understanding is *greatly appreciated.*

# System Improvement Plan

**Completed Projects:**

- WVWC has installed new chlorine injection systems that help ensure water is properly disinfected.
- WVWC has installed auto-dialer alarm systems that notify our staff in the event there are operational issues at our facilities. This helps prevent and shorten service outages.
- WVWC has identified all existing water lines and has performed a Hydraulic Model to establish distribution system performance. This model will assist in planning system improvements so that we maximize projects that will benefit the entire system and all customers.
- WVWC has installed automatic flushing devices and has an active flushing procedure.
- WVWC has pilot tested new Iron & Manganese Removal Systems. These tests were very successful, virtually removing 100% of these minerals.

**Active Projects:**

- WVWC will install a new removal system at our Unit 17 Water Distribution Center (WDC) along with a new water source and electrical upgrades. Unit 17 WDC provides water to the entire system except for the Cimmaron Development. This project will improve water clarity, and will improve reliability of service.
    - **This projected is scheduled for completion February 2008**
- WVWC will perform complete site improvements, including upgrades to existing removal systems, electrical and mechanical systems, at the other Water Distribution Centers including Cimmaron and King Street. These ongoing projects will improve water clarity and service reliability.
    - **Projects are ongoing but scheduled for completion First Quarter 2008**
- WVWC will install new water mains, water line loops, and install new valves where needed as determined by the Hydraulic Model. These additions will allow us to improve water pressure and service reliability while allowing us to isolate fewer customers during line breaks and repairs.
    - **Projects are ongoing but scheduled for completion First Quarter 2008**

**Planned Projects:**

- Existing pipeline infrastructure is approaching the end of its useful life. In addition to line failures, these underground pipelines have substantial Iron & Manganese build-up. This build-up will continue to convey color and solids to residences even after the completion of the active projects. Eventually, WVWC will need to begin a waterline replacement program for the entire water system. This will require a significant TEAM effort between WVWC and our customers.

GLOBAL WATER

# Willow Valley Water Company

Global Water – Willow Valley Water Company (WVWC) is actively deploying a System Improvement Plan. Global Water will include a progress report with your monthly billing statements that will outline important information on completed, active, and planned Projects. In addition, Global Water will keep a to-date progress report on our website. The link for this report is complete and can be found on the WVWC page at www.gwresources.com

On the opposite side of this mailer, we have included information related to the System Improvement Plan. Global Water is committed to serving the highest quality water and we are working closely with the Arizona Department of Environmental Quality (ADEQ) on the progress of our efforts. Your continued patience and understanding is greatly appreciated as we work together to improve the WVWC water system.

Respectfully,

*Ron Fleming*

Ron Fleming
General Manager
Global Water – West Valley Region

GLOBAL WATER

# System Improvement Plan

*(New Updates are highlighted)*

**Completed Projects:**

- WVWC has installed new chlorine injection systems that help ensure water is properly disinfected.
- WVWC has installed auto-dialer alarm systems that notify our staff in the event there are operational issues at our facilities. This helps prevent and shorten service outages.
- WVWC has identified all existing water lines and has performed a Hydraulic Model to establish distribution system performance. This model will assist in planning system improvements so that we maximize projects that will benefit the entire system and all customers.
- WVWC has installed automatic flushing devices and has an active flushing procedure.
- WVWC has pilot tested new Iron & Manganese Removal Systems. These tests were very successful, virtually removing 100% of these minerals.

**Active Projects:**

- **Unit 17 Water Distribution Center (WDC) Improvement Project is scheduled for completion February 2008:** WVWC will install a new removal system at our Unit 17 WDC along with a new water source, electrical and mechanical upgrades. Unit 17 WDC provides water to the entire system except for the Cimarron Development. This project will improve water clarity and reliability of service.
  - *WVWC has submitted complete design documents to ADEQ for permitting.*
  - *WVWC has issued a Purchase Contract with supplier of new Removal System.*
- **King Street WDC Improvement Projects are ongoing but scheduled for completion First Quarter 2008:** WVWC will perform complete site improvements, including upgrades to existing removal systems, electrical and mechanical systems. These ongoing projects will improve water clarity and service reliability for the King Street area. The site will be used as support for the Unit 17 WDC.
  - *WVWC has performed electrical upgrades at distribution center improving reliability.*
- **Cimmaron WDC Improvement Project are ongoing but scheduled for completion First Quarter 2008:** WVWC will perform complete site improvements, including upgrades to existing removal systems, electrical and mechanical systems. These ongoing projects will improve water clarity and service reliability for the Cimmaron Development.
  - *WVWC has performed electrical upgrades at distribution center improving reliability.*
- **Waterline Distribution System Projects will be ongoing:** WVWC will install new water mains, water line loops, and install new valves where needed as determined by the Hydraulic Model. These additions will allow us to improve water pressure and service reliability while allowing us to isolate fewer customers during line breaks and repairs.
  - *WVWC has installed new control valves in strategic areas as to minimize the number of customers affected by outages.*
  - *WVWC has installed a new waterline loop in the Commercial Street area.*

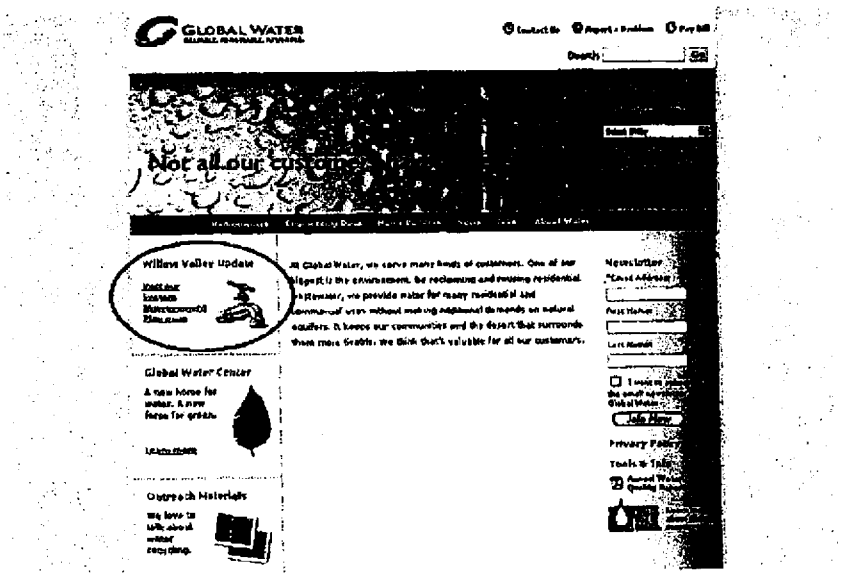
**Planned Projects:**

- Existing pipeline infrastructure is approaching the end of its useful life. In addition to line failures, these underground pipelines have substantial Iron & Manganese build-up. This build-up will continue to convey color and solids to residences even after the completion of the active projects. Eventually, WVWC will need to begin a waterline replacement program for the entire water system. This will require a significant TEAM effort between WVWC and our customers.

GLOBAL WATER

# Global Water is Working Hard to Improve Our Willow Valley Water Company

**The Willow Valley Water Company (WVWC) continues to advance system-wide improvements increasing the reliability of equipment and improving iron and manganese removal. Details of progress on our various projects is included on the reverse of this insert. In addition, Global Water maintains an up-to-date progress report on our website, and it can be accessed at http://www.gwresources.com/system-improvement-plan.php**




**While the water provided by WVWC meets all National Primary Drinking Water Standards, Global Water is working closely and directly with the Arizona Department of Environmental Quality (ADEQ) to improve the aesthetic qualities of the water associated with iron and manganese. Your continued patience and understanding is greatly appreciated as we work together to improve the WVWC water system.**

**Respectfully,**

*Ron Fleming*

**Ron Fleming**
**General Manager**
**Global Water – West Valley Region**

GLOBAL WATER

# System Improvement Plan
## (PROGRESS IS HIGHLIGHTED BELOW)

**Completed Projects:**

- WVWC has installed new chlorine injection systems that help ensure water is properly disinfected.
- WVWC has installed auto-dialer alarm systems that notify our staff in the event there are operational issues at our facilities. This helps prevent service outages.
- WVWC has identified all existing water lines and has performed a Hydraulic Model to establish distribution system performance. This model assists in planning system improvements to maximize benefits to the system as a whole.
- WVWC has installed automatic flushing devices and operates an active flushing program to reduce the build up of iron and manganese in the water pipelines.
- WVWC has selected and issued Notice to Proceed for the installation of new iron and manganese removal systems.
- **Global Water has assigned our West Valley Region Water Treatment Supervisor to the area. He will work closely with local staff while overseeing all technical improvements to the WVWC system.**

**Active Projects:**

- **Unit 17 Water Distribution Center (WDC) Improvement Project is scheduled for completion February 2008:** WVWC will install a new iron and manganese removal system at our Unit 17 WDC along with a new water source, and electrical/mechanical upgrades. This project will improve water clarity and reliability of service.
  - WVWC has submitted complete design documents to ADEQ for permitting.
  - WVWC has issued a Purchase Contract with the supplier of the new Removal System.
  - **WVWC has selected Felix Construction Company (FCC) as General Contractor for all planned Facility Improvements. FCC will mobilize to Willow Valley and begin preparatory work in December 2007.**
- **King Street WDC Improvement Projects are ongoing and scheduled for completion First Quarter 2008:** WVWC will perform complete site improvements, including upgrades to the existing iron and manganese removal systems, and electrical/mechanical systems. These ongoing projects will improve water clarity and service reliability for the King Street area. The site will be used as support for the Unit 17 WDC.
  - WVWC has performed electrical upgrades at distribution center improving reliability.
  - **FCC is contracted to complete additional improvements on this site while in Willow Valley**
- **Cimmaron WDC Improvement Projects are ongoing and scheduled for completion First Quarter 2008:** WVWC will perform complete site improvements, including upgrades to the existing iron and manganese removal systems, and electrical/mechanical systems. These ongoing projects will improve water clarity and service reliability for the Cimmaron Development.
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  - WVWC has installed new control valves in strategic areas as to improve our ability to re-direct water, isolate line breaks, and reduce the number of customers affected by failures.
  - WVWC has installed a new waterline loop in the Commercial Street area.

**Planned Projects:**

- Much of the existing pipeline infrastructure is approaching the end of its useful life. A long-term pipeline replacement project will be instituted to allow for the rehabilitation of this network. Following inferior installation, the distribution system was ignored for many years. Because of this, the pipelines currently suffer from occlusion (build up of iron and manganese deposits). The rectification of these issues will require a significant effort.

GLOBAL WATER

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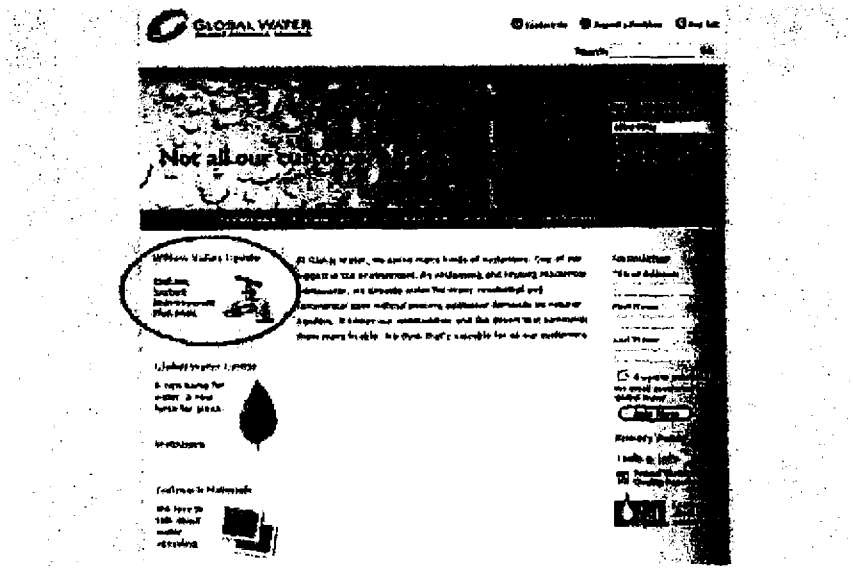


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**General Manager**
**Global Water – West Valley Region**

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## (PROGRESS IS HIGHLIGHTED BELOW)

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**Active Projects:**

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    - WVWC has submitted complete design documents to ADEQ for permitting.
    - **WVWC has received the equipment for the new removal system.**
    - **Felix Construction Company (FCC) is nearing completion of this project.**
- **King Street WDC Improvement Projects are ongoing and scheduled for completion First Quarter 2008:** WVWC will perform complete site improvements, including upgrades to the existing iron and manganese removal systems, and electrical/mechanical systems. These ongoing projects will improve water clarity and service reliability for the King Street area. The site will be used as support for the Unit 17 WDC.
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**Planned Projects:**

- Much of the existing pipeline infrastructure is approaching the end of its useful life. A long-term pipeline replacement project will be instituted to allow for the rehabilitation of this network. Following inferior installation, the distribution system was ignored for many years. Because of this, the pipelines currently suffer from occlusion (build up of iron and manganese deposits). The rectification of these issues will require a significant effort.

GLOBAL WATER

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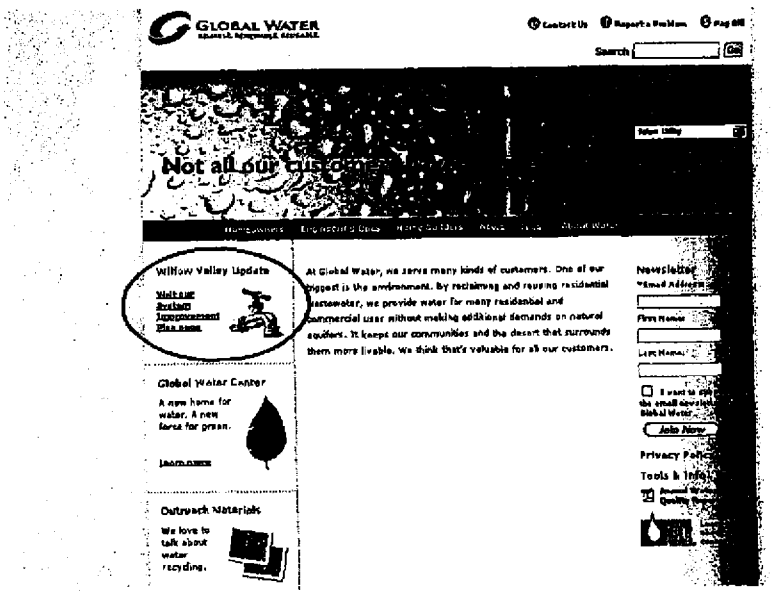


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**Respectfully,**

Ron Fleming

**Ron Fleming**
**General Manager**
**Global Water – West Valley Region**

GLOBAL WATER

# System Improvement Plan
## (UPDATES ARE HIGHLIGHTED BELOW)

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**Active Projects:**

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GLOBAL WATER

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Respectfully,

*Ron Fleming*

Ron Fleming
General Manager
Global Water – West Valley Region

GLOBAL WATER

# System Improvement Plan

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**Planned Projects:**

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GLOBAL WATER

# Willow Valley Water Company

**invites you to attend a**

# Public Meeting

**to discuss**

# Water Color & Quality

**August 29th, 2007, 6:00 – 7:00 pm**

**Mohave Valley Elementary Cafeteria**
**1419 Willow Avenue**
**Mohave Valley AZ, 86440**

**Directions: Highway 95 to Willow Ave/West on Willow Ave to Mohave Valley Elementary**

Agenda:

- Introduction of Global Water – Willow Valley Water Company Staff
- Water Quality in Mohave Valley
- Health, Safety & Regulatory Compliance of Willow Valley's water
- Planned system improvements - including timelines
- Review of progress to-date on system improvements
- Open Question & Answer session

On the opposite side of this invitation, we have attached general information about water quality. Global Water technical staff will be present to answer your questions.

Respectfully,

Ron Fleming

Ron Fleming
General Manager
Global Water – West Valley Region

GLOBAL WATER

# Water Quality Information

**General customer complaints:**

- Brown or "Tea" colored water
- Iron in the water
- Clothing stains

**General information:**
Brown or "Tea" colored water is a problem in the Mohave Valley area but it is not a safety issue, it is an appearance issue. The color is caused by a chemical reaction between chlorine which we add to ensure its safety, and the high levels of iron and manganese found in Mohave Valley water.

Low levels of iron and manganese are commonly found in drinking water. In Mohave Valley, unique water and geological conditions increase the levels of iron and manganese in our water. Iron and manganese are not considered regulated contaminants, they are naturally occurring minerals that humans can safely consume. However, due to the water color problems associated with these two minerals, Willow Valley Water Company is working to minimize the coloration effect.

**Water Chemistry Problem:**
In order to assure protection of your drinking water and to distribute safe potable water in accordance with the Safe Drinking Water Act, we add sodium hypochlorite (chlorine) for disinfection. Sodium Hypochlorite is a disinfectant and an oxidant. The addition of sodium hypochlorite causes a chemical reaction with the iron and manganese, making them return to a solid state. When iron and manganese become solid, they cause the water to turn brown. Unfortunately, the more disinfectant we add to provide safe drinking water, the darker the water becomes. If we don't disinfect the water, we would violate the Safe Drinking Water Act and endanger public health.

**Health Effects:**
"Brown" or "Tea" colored water is NOT a health concern. As mentioned previously, Iron and Manganese are not regulated by the Safe Drinking Water Act, the same Act that requires us to disinfect the water.

**Indications:**
"Brown" or "Tea" colored water interferes with almost every cleaning task, from laundry and dishwashing to bathing and personal grooming. Clothes washed in brown water may stain especially if household bleach or laundry soap with bleach is used. Additionally, pool water may become browner with the addition of more chlorine.

**What we plan to do abut this:**
WVWC is currently in the planning, engineering, and permitting phase of a System Improvement Project. This project will include additional water sources, new iron and manganese removal systems, improvements to existing distribution facilities and infrastructure.

**More information:**
WVWC is committed to serving the highest quality water and are working closely with the Arizona Department of Environmental Quality on the progress of our efforts. Your continued patience and understanding is greatly appreciated. The drinking water produced and distributed by Global utilities is monitored at frequencies determined by the SDWA. More information can be found by visiting the Global Water website and viewing the data in the annual water quality reports (Consumer Confidence Reports). We are required to produce these reports annually and have them available to each customer we serve either by direct mail or another form of advertisement.

All Global Water utilities produce and distribute water that meets all federal and state water quality criteria. Our waters are monitored for all regulated contaminants in accordance with the ***Safe Drinking Water Act*** (SDWA). In Arizona, the SDWA is administered by the Arizona Department of Environmental Quality (ADEQ). In some cases, e.g. Maricopa County, ADEQ has delegated the authority for administering the SDWA to other agencies. In Maricopa County, the Maricopa County Environmental Services Department (MCESD) regulates water quality.

GLOBAL WATER

## Willow Valley Water Company

invites you to attend a

# Public Meeting

to discuss ongoing

# Water System Improvements

**July 17th, 2008, 6:00 – 7:00 pm**

**Willow Valley Club House**
**549 Gordon Street**
**Mohave Valley AZ, 86440**

**Highway 95 to King St/West on King St/Right at Dike Rd/Right on Kingsley/Left on Gordon to Club House**

Agenda:

- Review of topics from 1st Public Meeting including
  - Global Water
  - Water Quality in Mohave Valley
  - Health, Safety & Regulatory Compliance of Willow Valley's water
- Review of completed projects
- Additional planned system improvements
- Open Question & Answer session

On the reverse side of this invitation, we have attached more information about our System Improvement Plan. In addition, you can find more information about WVWC's water color & quality on our website @ www.gwresources.com

Respectfully,

Ron Fleming

Ron Fleming
General Manager – West Valley Region

GLOBAL WATER

# System Improvement Plan

**Completed Projects:**

- WVWC has installed new chlorine injection systems that help ensure water is properly disinfected.
- WVWC has installed auto-dialer alarm systems that notify our staff in the event there are operational issues at our facilities. This helps prevent service outages.
- WVWC has identified all existing water lines and has performed a Hydraulic Model to establish distribution system performance. The model assists in planning system improvements to maximize benefits to the system as a whole.
- WVWC has installed automatic flushing devices and operates an active flushing program to reduce the buildup of iron and manganese in the water pipelines.
- **Unit 17 Water Distribution Center (WDC) Improvement Project:** WVWC has installed a new iron and manganese removal system at our Unit 17 WDC along with a new water source, and electrical/mechanical upgrades. This project has improved water clarity and reliability of service.
- **King Street WDC Improvement Project:** WVWC has performed miscellaneous site improvements, including upgrades to the existing iron and manganese removal systems, and electrical/mechanical systems. This has improved water clarity and service reliability for the King Street area. The site will be used as support for the new Unit 17 WDC.

**Active Projects:**

- **Cimmaron WDC Improvement Projects is scheduled for completion June 2008:** WVWC will perform complete site improvements, including upgrades to the existing iron and manganese removal systems, and electrical/mechanical systems. These ongoing projects will improve water clarity and service reliability for the Cimmaron Development.
- **Waterline Distribution System Projects will be ongoing as needed:** WVWC will install new water mains, water line loops, and install new valves where needed as determined by the Hydraulic Model. These additions will allow us to improve water pressure and service reliability.
    - WVWC has installed new control valves in strategic areas as to improve our ability to re-direct water, isolate line breaks, and reduce the number of customers affected by failures.

**Planned Projects:**

- Much of the existing pipeline infrastructure is approaching the end of its useful life. A long-term pipeline replacement project will be instituted to allow for the rehabilitation of this network. Following substandard installation, the system was ignored for many years. Because of this, the pipelines currently suffer from occlusion (build up of iron and manganese deposits). The rectification of these issues will require a significant effort.

GLOBAL WATER

# Willow Valley Water Company

Willow Valley Water Company (WVWC) has successfully commissioned the new iron and manganese removal system at the Unit 17 Water Distribution Center (WDC). This WDC provides service to all residents except customers that live in the Lake Cimmaron Development. Lake Cimmaron is supplied by a separate WDC which is currently being improved under a separate project. As discussed in the Public Meeting on Aug 29th, 2007, in the first stage of aesthetic improvements it is imperative to remove these minerals at the source well when the water is pumped out of the ground. ***Testing of the new removal system has confirmed greater than 95% removal of these inorganic contaminants.***

This newly treated water will continue to be distributed through existing pipelines that have significant scale accumulation. It can be expected that this scale will continue to cause discoloration and some debris as the scale loosens in the presence of the treated water. WVWC will continue to flush pipelines to address this. Although it is hard to predict how long this condition will last, the distribution system will begin to clear up and you will see an improvement.

While the scale and color are not health issues, we remain committed to improving the aesthetic qualities of the water. Please refer to the WVWC Consumer Confidence Report, monthly informational mailers (copied on reverse side of this notification), and our website www.gwresources.com for more information about the cause and safety of "tea" colored water.

Global Water has begun the engineering activities required to improve the distribution network; this project is in planning and will take a significant team effort between WVWC and our customers. Further updates will continue in the standard monthly mailer and Global Water plans to hold a second Public Meeting in the near future. As soon as we have selected a date, we will distribute an invitation.

We appreciate your continued patience and cooperation as we continue to improve our Willow Valley Water Company.

**Respectfully,**

Ron Fleming

**Ron Fleming**
**General Manager**
**Global Water – West Valley Region**

GLOBAL WATER

# Water Quality

All Global Water utilities produce and distribute water that meets all federal and state water quality criteria. Our waters are monitored for all regulated contaminants in accordance with the ***Safe Drinking Water Act*** (SDWA). In Mohave County, the SDWA is administered by the Arizona Department of Environmental Quality (ADEQ). In order to assure protection of your drinking water and to distribute safe potable water in accordance with the SDWA, we add sodium hypochlorite (chlorine) for disinfection. Sodium Hypochlorite is a disinfectant and an oxidant. The addition of sodium hypochlorite causes a chemical reaction with the iron and manganese, making them return to a solid state. When iron and manganese become solid, they cause the water to turn brown. Unfortunately, the more disinfectant we add to provide safe drinking water, the darker the water becomes.

Brown or "Tea" colored water is a problem in the Mohave Valley area but it is not a safety issue, it is an appearance issue. Iron and manganese are naturally occurring minerals that humans can safely consume. However, due to the water color problems associated with these two minerals, Willow Valley Water Company is working to minimize the coloration effect.

Global Water is committed to serving the highest quality water and we are working closely with the Arizona Department of Environmental Quality on the progress of our efforts.

# GSS 3

GLOBAL WATER RESOURCES (GWR)

CODE OF PRACTICE

GWR-CP-EX-DEF

# DEFINITIONS

## PROHIBITED WASTE

Prohibited Waste means material or wastestreams that shall not be discharged to collection systems operated by GWR. Specifically, this includes:

### Air Contaminant Waste

Any waste other than sanitary waste which, by itself or in combination with another substance, is capable of creating, causing or introducing an air contaminant outside any sewer or sewage facility or is capable of creating, causing or introducing an air contaminant within any sewer or sewage facility which would prevent safe entry by authorized personnel.

### Flammable or Explosive Waste

Any waste which, by itself or in combination with another substance, is capable of causing or contributing to an explosion or supporting combustion in any sewer or sewage facility including, but not limited to gasoline, naphtha, propane, diesel, fuel oil, kerosene or alcohol.

### Reactive Waste

Any waste which, by itself or in combination with another substance, is capable of causing or contributing to an undesirable physical or chemical reaction when introduced to sanitary sewer systems, including: endothermic reactions, exothermic reactions, precipitation etc.

### Obstructive Waste

Any waste which, by itself or in combination with another substance, is capable of obstructing the flow of, or interfering with, the operation or performance of any sewer or sewage facility *including, but not limited to:* earth, sand, sweepings, gardening or agricultural waste, ash, chemicals, paint, metal, glass, sharps, rags, cloth, tar, asphalt, cement-based products, plastic, wood, waste portions of animals, fish or fowl, and solidified fat.

### Corrosive Waste

Any waste with corrosive properties which, by itself or in combination with any other substance, may cause damage to any sewer or sewage facility or which may prevent safe entry by authorized personnel.

### High Temperature Waste

A high temperature waste is:

a. Any waste which, by itself or in combination with another substance, will create heat in amounts which will interfere with the operation and maintenance of a sewer or sewage facility or with the treatment of waste in a sewage facility;
b. Any waste which will raise the temperature of waste entering any sewage facility to 40 degrees Celsius (104 degrees Fahrenheit) or more;
c. Any non-domestic waste with a temperature of 65 degrees Celsius (150 degrees Fahrenheit) or more.

Biomedical Waste

Any of the following categories of biomedical waste: human anatomical waste, animal waste, untreated microbiological waste, waste sharps and untreated human blood and body fluids.

Miscellaneous Prohibited Wastes

Any waste, other than sanitary waste, which by itself or in combination with another substance:

a. constitutes or may constitute a significant health or safety hazard to any person;
b. may interfere with any sewer or sewage treatment process;
c. may cause a discharge from a sewage facility to contravene any requirements by or under any ADEQ APP or AzPDES discharge permit or any other act, or any other law or regulation governing the quality of the discharge, or may cause the discharge to result in a hazard to people, animals, property or vegetation; or
d. may cause biosolids to fail criteria for beneficial land application.

RESTRICTED WASTE

Restricted waste means wastes that may be permitted to be discharged to collection systems operated by GWR, but have specific criteria which must be met prior to that discharge. These include:

Food Waste

Any non-domestic waste from cooking and handling of food that, at the point of discharge into a sewer, contains particles larger than 0.5 centimeters in any dimension.

Radioactive Waste

Any waste containing radioactive materials that, at the point of discharge into a sewer, exceeds radioactivity limitations as established by regulatory agencies.

pH Waste

Any non-domestic waste which, at the point of discharge into a sewer, has a pH lower than 6 or higher than 9.0, as determined by either a grab or a composite sample.

Dyes and Coloring Material

Dyes or coloring materials which may pass through a sewage facility and discolor the effluent from a sewage facility except where the dye is used by GWR, or one or more of its agents, as a tracer.

Miscellaneous Restricted Wastes

Any of the following wastes:

a. seawater
b. PCBs
c. chlorinated phenols[1]
d. pesticides
e. *tetrachloroethylene*

Specified Waste

Any waste which, at the point of discharge into a sewer, contains any contaminant at a concentration in excess of the limits set out AAC R18-4 *et seq.* or as more specifically defined in the tables below. All concentrations are expressed as total concentrations which includes all forms of the contaminant, whether dissolved or undissolved. The concentration limits apply to both grab and composite samples. Contaminant definitions and methods of analysis are outlined in standard methods.

| RESTRICTED WASTE – DEFINITION OF LIMITS<br>CONVENTIONAL CONTAMINANTS [mg/L] | |
|---|---|
| Biochemical Oxygen Demand (BOD) | 350 |
| Chemical Oxygen Demand (COD) | 700 |
| Oil and Grease[2] | 100 |
| Suspended Solids | 350 |

| RESTRICTED WASTE – DEFINITION OF LIMITS<br>ORGANIC CONTAMINANTS [mg/L] | |
|---|---|
| Benzene | 0.004 |

[1] Chlorinated phenols include:
- chlorophenol (ortho, meta, para)
- dichlorophenol (2,3, 2,4-, 2,5-, 2,6-, 3,4-, 3,5-)
- trichlorophenol (2,3,4-, 2,3,5-, 2,3,6-, 2,4,5-, 2,4,6-, 3,4,5-)
- tetrachlorophenol (2,3,4,5-, 2,3,4,6-, 2,3,5,6-)
- pentachlorophenol

[2] Total oil and grease includes oil and grease (hydrocarbons) (see Organic Contaminants Table)

| RESTRICTED WASTE – DEFINITION OF LIMITS<br>ORGANIC CONTAMINANTS [mg/L] | |
|---|---|
| Ethyl Benzene | 0.56 |
| Toluene | 0.8 |
| Xylenes | 8 |
| Polynuclear Aromatic Hydrocarbons (PAH)[3] | 0.0002 |
| Phenols | 0.001 |
| Oil and Grease (hydrocarbons) | 15 |

| RESTRICTED WASTE – DEFINITION OF LIMITS<br>INORGANIC CONTAMINANTS [mg/L] | |
|---|---|
| Antimony (Sb) | 0.0048 |
| Arsenic (As) | 0.010 |
| Barium (Ba) | 1.6 |
| Beryllium (Be) | 0.0032 |
| Cadmium (Cd) | 0.004 |

[3] Note: Polynuclear Aromatic Hydrocarbons (PAH) include:

a. naphthalene benzo(a)anthracene
b. acenaphthylene chrysene
c. acenapthene benzo(b)fluoranthene
d. fluorene benzo(k)fluoranthene
e. phenanthrene benzo(a)pyrene
f. anthracene dibenzo(a,h)anthracene
g. fluoranthene indeno(1,2,3-cd)pyrene
h. pyrene benzo(g,h,i)perylene

| RESTRICTED WASTE – DEFINITION OF LIMITS<br>INORGANIC CONTAMINANTS [mg/L] | |
|---|---|
| Chloride (Cl) | 1500 |
| Chromium (Cr) | 0.08 |
| Cobalt (Co) | 5 |
| Copper (Cu) | 0.0175 |
| Cyanide (Cn) | 0.0079 |
| Fluoride (F) | 3.2 |
| Iron (Fe) | 50 |
| Lead (Pb) | 0.006 |
| Manganese (Mn) | 5 |
| Mercury (Hg) | 0.0002 |
| Molybdenum (Mo) | 5 |
| Nickel (Ni) | 0.08 |
| Selenium (Se) | 0.002 |
| Silver (Ag) | 0.0992 |
| Sulfate ($SO_4$) | 1500 |
| Sulfide (S) | 0.05 |
| Thallium (Tl) | 0.0016 |
| Zinc (Zn) | 0.138 |

REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| | ORIGINAL (000) | | GSS |
| 25-Mar-04 | 001 | Added revisions page | GSS |
| 13-Nov-06 | 002 | Renumbered consistent with Internal/External division. Amended limits of contaminants to be consistent with AzPDES requirements. | GSS |
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GLOBAL WATER RESOURCES

CODE OF PRACTICE

GWR-CP-EX-001

# RV PARK OPERATIONS

## APPLICATION

This code of practice for RV park operations defines the requirements for managing waste discharged directly or indirectly into a sewer connected to a sewage facility from RVs, mobile homes, trailers, watercraft and other sources which employ storage, chemical disinfection/stabilization and discharge as a waste disposal mechanism.

This code of practice applies to all RV park operations. Definitions are included in GWR-CP-EX-DEF.

## DISCHARGE REGULATIONS

An operator of an RV park operation must not discharge waste, which at the point of discharge into a sewer, contains:

a. oil and grease in a concentration that is in excess of 100 milligrams per litre as analyzed in a grab sample;
b. suspended solids in a concentration that is in excess of 350 milligrams per litre as analyzed in a grab sample;
c. 5-day biochemical oxygen demand ($BOD_5$) in a concentration that is in excess of 350 milligrams per liter in a grab sample; or
d. exceeds the limits established in GWR-CP-EX-DEF for restricted wastes; or
e. includes prohibited waste, special waste, stormwater, or uncontaminated water.

If the RV park operation accepts RV customers with the intention of providing sewerage hook-ups, that practice is only acceptable if one of the following conditions is met:

a. If the RV park operation has a dedicated pre-treatment facility, that facility must be used for the disposal of the first discharge of wastewater from any entering RVs. The facility must be maintained in accordance with the manufacturer's or engineer's operating instructions. Discharge from that facility which is directed to a GWR operated collection system shall be metered such that large slugs of waste are not introduced to the sewer instantaneously. Discharges from such facilities to sewers are limited to 10% of the ADWF (in USGPM) of the receiving treatment facility.
b. In the absence of a dedicated pre-treatment facility, the RV park operation shall require incoming RVs to certify that, prior to connection to a sewer, that the holding tanks of the RV have been previously discharged at an approved facility and are presently empty.

## RECORD KEEPING AND RETENTION

An operator of an RV park operation must keep a record at the RV park operation of:

a. all disposals of RV waste into a dedicated pre-treatment facility;
b. Pre-treatment facility inspection and maintenance activities including:
   I. the date of inspection or maintenance;
   II. the maintenance conducted; and
   III. the type and quantity of material removed from the facility;
c. Certifications of waste disposal prior to hook up of RVs to sewer services.

The records shall be retained for a period of two years, and shall be available on request to GWR Staff.

Failure to comply with this Code of Practice could result in termination of service, requirement of a Industrial Discharger Service Agreement and/or required monthly cleaning manifest, inspections, and monitoring.

REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| | ORIGINAL (000) | | GSS |
| 25-Mar-04 | 001 | Added revisions table | GSS |
| 13-Nov-06 | 002 | Renumbered consistent with Internal/External division. | GSS |
| 26-Nov-07 | 003 | Failure to comply verbiage added | MH |
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GLOBAL WATER RESOURCES (GWR)

CODE OF PRACTICE

GWR-CP-EX-002

# FOOD SERVICE OPERATIONS

## APPLICATION

This code of practice for Food Service operations defines the requirements for managing waste discharged directly or indirectly into a sewer connected to a sewage facility from restaurants, or other facilities employing food service as a primary or secondary business operation.

This code of practice applies to:

a. operators of a food services operation that adds kitchen equipment that has the potential to discharge oil and grease;
b. operators of a food services operation that discharges non-domestic waste to sewer that exceeds any of the restricted waste criteria specified in GWR-CP-EX-DEF; or
c. any food service operation, as determined by the GWR.

Definitions are included in GWR-CP-EX-DEF.

## DISCHARGE REGULATIONS

An operator of a Food Service Operation must not discharge waste, which at the point of discharge into a sewer, contains:

a. oil and grease in a concentration that is in excess of 100 milligrams per liter as analyzed in a grab sample;
b. suspended solids in a concentration that is in excess of 350 milligrams per liter as analyzed in a grab sample;
c. 5-day biochemical oxygen demand (BOD5) in a concentration that is in excess of 350 milligrams per liter in a grab sample;
d. exceeds the limits established in GWR-CP-EX-DEF for restricted wastes;
e. includes prohibited waste, special waste, stormwater, or uncontaminated water; or
f. Sanitary wastes are not allowed to be connected to sewer lines intended for grease interceptor service.

## GREASE INTERCEPTORS/GREASE TRAPS

Grease interceptors/grease traps are required to be installed and maintained by the Owner/Operator of food service operations within the collection system of GWR facilities. Grease interceptor installations and grease traps shall conform to the requirements of this Code of Practice.

### Design

The rated flow capacity of each grease interceptor and/or grease trap installed in food services establishments shall not be less than the maximum discharge flow from all plumbing fixtures connected to the grease interceptor/grease trap that will discharge simultaneously.

The rated flow capacity of each grease interceptor/grease trap must be established using the *Plumbing and Drainage Institute standard PDI-G101* or equivalent test as approved by GWR's engineer.

Each grease interceptor/grease trap must have either:

a. an internal flow control fitting, or
b. a flow control fitting installed on the inlet line[1].

All grease interceptors/grease traps must be labeled with information containing the rated flow capacity of the unit. The label shall be permanently affixed and visible following installation. Where a permanently affixed and visible label is not possible or practical, manufacturer and installation drawings of the grease interceptor/grease trap shall be maintained at the site and shall be available for inspection by GWR staff on request.

Access manholes, with a minimum diameter of 24 inches, shall be provided over each grease interceptor chamber and sanitary tee. The access manholes shall extend to finished grade and be designed and maintained to prevent water inflow or infiltration. The manholes shall also have readily removable covers to facilitate inspection, grease removal, and wastewater sampling activities. Design Flow Rates

The operator of a food services operation must calculate the maximum discharge flowrate to a grease interceptor by adding together the flowrates from each fixture that will discharge simultaneously using the following method to estimate the flowrate from each fixture:

a. for sinks, calculate the total volume of each sink and assign a drain time of one minute;
b. for exhaust hoods with an automatic cleaning cycle, measure the discharge flowrate or use the manufacturers estimate of peak discharge flowrate during the automatic wash cycle;
c. for floor drains, estimate the flowrate using the following table:

GREASE INTERCPTOR SIZING

| Floor Drain Diameter (Inches) | Drain Rate (GPM) |
|---|---|
| 2 | 22 |
| 3 | 37.5 |
| 4 | 45 |

d. for drains on other equipment, use the table in Section (c) or if the drain size is less than 2 inches in diameter either:
    I. measure the discharge flowrate, or
    II. refer to manufacturers estimated peak discharge flowrate, or
    III. use a minimum of 22 GPM; and

[1] The flow control fitting must be sized to limit the flow to a rate that is no more than the rated flow capacity of the grease interceptor.

GREASE TRAP SIZING (INTERNAL)

| Fixture Outlet or Trap Size (Inch) | Drainage Fixture | GPM | PDI Size grease Trap |
|---|---|---|---|
| 1 ¼ | 1 | 7.5 | 10 |
| 1 ½ | 2 | 15 | 15 |
| 2 | 3 | 22 | 25 |
| 2 ½ | 4 | 30 | 35 |
| 3 | 5 | 37.5 | 50 |
| 4 | 6 | 45 | 50 |

Where the rated flow capacity of a grease interceptor/grease trap is exceeded by the maximum discharge flow rate from all plumbing fixtures that will be discharged simultaneously to the grease interceptor/grease trap, the operator of a food services operation must:

a. install a grease interceptor/grease trap that has a rated flow capacity equal to or greater than the maximum discharge flowrate from all plumbing fixtures connected to the grease interceptor/grease trap that will discharge simultaneously; or
b. install additional grease interceptors/grease traps so that the maximum discharge flowrate from fixtures connected to each grease interceptor/grease trap that will discharge simultaneously does not exceed the rated flow capacity of the grease interceptor; or
c. have a plan approved by GWR's engineer showing how the discharge of waste will be managed.

Installation

GREASE INTERCEPTORS

A grease interceptor must be located so that it is readily and easily accessible for inspection and maintenance. A sampling point shall be installed as follows:

a. a sampling tee shall be located either at the outlet of the grease interceptor or downstream of the grease interceptor at a location upstream of any discharge of other waste;
b. the sampling tee shall be not less than 4 inches in diameter, and shall be installed so that it opens in a direction at right angles to and vertically above the flow of the sewer pipe; and
c. the sampling tee shall be readily and easily accessible at all times for inspection.

GREASE TRAPS

A grease trap must be installed as close as possible to the FOG laden water. It must be installed so maintenance can be easily performed. The cover must be removed periodically to remove the FOG, so the grease trap must be installed to provide this access.

**Automatic Grease Recovery Units (AGRU)**

This equipment automatically separate and remove grease, fat, and oil from drain water flow. The device allows incidental food solids and other debris found in the entering water to be separated from the grease and pumped out of the solids retention area to the drain. The entire process is controlled automatically by a timer.

a. Enough clearance should be available to be able to remove and service the internal baffling.
b. The Flow Control Fitting furnished with a PDI Certified Interceptor must be installed in the waste line ahead of the interceptor.
c. It should be located beyond the last connection from the fixture and as close as possible to the underside of the lowest fixture to minimize the effects of head pressure.
d. All installation recommendations are subject to the approval of the local plumbing code authority

Maintenance

An operator of a food services operation shall maintain all grease interceptors/grease trap installed in connection with the food services operation in accordance with the manufacturer's recommendations so that the grease interceptors function properly.

An operator of a food services operation must not permit oil and grease to accumulate in a grease interceptor/grease trap in excess of the lesser of six inches or 25% of the wetted height of the grease interceptor/grease trap.

An operator of a food services operation shall not dispose of oil and grease from a grease interceptor/grease trap to a sewer. All cleaning or grease removal shall be accomplished by employing vactor trucks or other means to preclude any grease from entering the collection system.

An operator of a food services operation must not use or permit the use of chemical agents, enzymes, bacteria, solvents, hot water or other agents to facilitate the passage of oil and grease through a grease interceptor without the express written consent of GWR.

Connections to Grease Interceptors/Grease trap

An operator of a food services operation shall have the following fixtures connected to the grease intercept/trap system:

a. sinks used for washing pots, pans, dishes, cutlery and kitchen utensils;
b. drains serving self-cleaning exhaust hoods installed over commercial cooking equipment;
c. drains serving commercial cooking equipment that discharges oil and grease;
d. drains serving a garbage compactor used to compact waste that may contain, or be contaminated with, food waste; or
e. other fixtures that discharge wastewater containing oil and grease.

The following fixtures shall not be connected to a grease interceptor/grease trap:

a. garburators, potato peelers and similar equipment discharging solids;
b. toilets, urinals and hand sinks;
c. automatic dishwashers[2]

[2] An automatic dishwasher may be connected to a grease interceptor/grease trap provided that there are no other fixtures connected to the grease interceptor/grease trap and the grease interceptor/grease trap is sized to accept the maximum discharge flowrate specified by the dishwasher manufacturer.

Outdoor Garbage Compactors An owner of an outdoor garbage compactor installation connected to a sewer must install works as necessary to prevent rainwater from entering the drain connected to the sewer.

## SAMPLING

At the request of GWR, the operator of a food services operation shall confirm the operation of any grease interceptor/grease trap via analytical testing. This testing shall be performed by an accredited laboratory, and paid for by the owner of the grease interceptor/grease trap.

## RECORD KEEPING AND RETENTION

An operator of a food services operation must keep a record at the food services operation of all grease interceptor/grease trap inspection and maintenance activities including:

a. the date of inspection or maintenance;
b. the maintenance conducted;
c. the type and quantity of material removed from the grease interceptor;
d. the vac truck/hauler information; and
e. the location of disposal of the material removed from the grease interceptor

The records shall be retained for a period of two years, and shall be available on request to GWR Staff.

## REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| | ORIGINAL (000) | | GSS |
| 25-Mar-04 | 001 | Added revisions table | GSS |
| 13-Nov-06 | 002 | Renumbered consistent with Internal/External division. | GSS |
| 5-Mar-08 | 003 | Record keeping – added hauler information | SA |
| 27 Jan 09 | 004 | Grease trap specs – information added | SA |
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GLOBAL WATER RESOURCES

CODE OF PRACTICE

GWR-CP-EX-003

# DRY CLEANING OPERATIONS

## APPLICATION

This code of practice for Dry Cleaning operations defines the requirements for managing waste discharged directly or indirectly into a sewer connected to a sewage facility from dry cleaning businesses, or other facilities employing solvent or chemical cleaning routines.

Definitions are included in GWR-CP-EX-DEF.

## DISCHARGE REGULATIONS

An operator of a dry cleaning operation shall not discharge waste, which at the point of discharge into a sewer contains:

a. Tetrachloroethylene;
b. petroleum solvents;
c. Lint
d. exceeds the limits established in GWR-CP-EX-DEF for restricted wastes; or
e. includes prohibited waste, special waste, stormwater, or uncontaminated water.

An operator of a dry cleaning operation that generates wastewater containing tetrachloroethylene or petroleum solvent shall either:

a. Collect and transport the wastewater from the dry cleaning operation for off-site waste management; or
b. Install and maintain a solvent/water separator and holding tank in accordance with this Code of Practice.

Solvent/Water Separators and Holding Tanks

Solvent/water separator and holding tank installations must conform to the requirements of this Code of Practice.

An operator of a dry cleaning operation shall not directly discharge wastewater from the solvent/water separator to a GWR operated sewage facility

An operator of a dry cleaning operation must:

a. Collect the wastewater discharged from a solvent/water separator into a transparent, solvent-compatible, holding tank with a containment capacity 25% larger than the total volume of the solvent/water separator; and
b. Allow the wastewater to stand undisturbed for a period of not less than 12 hours following each operating date.

An operator of a dry cleaning operation must check the contents of the holding tank after the specified period of time has elapsed to determine whether the wastewater contains any visible residual solvent. If there is no visible residual solvent in the holding tank, the contents may be discharged to the sewer.

If the holding tank contains any visible tetrachloroethylene or petroleum solvent after the specified period of time, then the tetrachloroethylene or petroleum solvent must be separated and returned to the solvent recovery system. After the removal of all visible solvent, the wastewater may be discharged to the sanitary sewer.

Visual Inspections

An operator of a dry cleaning operation must:

a. Visually inspect the solvent/water separator on a daily basis; and
b. Clean the solvent/water separator at least once every seven (7) days to manufacturer's standards.

Spills and Leaks

An operator of a dry cleaning operation shall:

a. install spill containment facilities in all chemical storage areas and around all dry cleaning machines;
b. block off all sewer drains within the containment area for chemical storage and dry cleaning equipment to prevent any accidental discharge of solvent to a sewer;
c. inspect all dry cleaning equipment for liquid leaks at least once per day.
d. keep all equipment clean to ensure that leaks are visible.

The following areas and items are to be checked for leaks:

a. hose connections, unions, couplings and valves
b. machine door gasket and seating
c. filter head gasket and seating
d. pumps
e. base tanks and storage
f. solvent/water separators
g. filter sludge recovery
h. distillation unit
i. diverter valves
j. saturated lint in lint baskets
k. holding tanks
l. cartridge filters

An operator of a dry cleaning operation who detects any liquid leak from dry cleaning equipment or chemical storage must repair the leak within 72 hours and must immediately prevent any discharge of contaminants to a sewer.

## RECORD KEEPING AND RETENTION

The following information shall be recorded in the record book:

a. record of all inspections done by the operator, employees or other hired personnel;
b. record of any liquid leaks detected and remedial action taken;

c. record of solvent/water separator cleaning;
d. record of holding tank cleaning and solvent transfer; and
e. record of all other equipment maintenance and repair.

Every dry cleaning operation must keep a record book on site for inspection with records from the previous two years and must be available to GWR Staff upon request.

REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| | ORIGINAL (000) | | GSS |
| 25-Mar-04 | 001 | Added revisions table | GSS |
| 13-Nov-06 | 002 | General review and re-number | GSS |
| 10-Dec-07 | 003 | Amended verbiage to reflect records book availability for inspection. | MH |
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GLOBAL WATER RESOURCES

CODE OF PRACTICE

GWR-CP-EX-004

# PHOTOGRAPHIC IMAGING OPERATIONS

## APPLICATION

This code of practice for photographic imaging operations defines mandatory requirements for managing non-domestic waste discharged directly or indirectly into a sewer connected to a sewage facility.

This code of practice applies to photographic imaging operations. Definitions are included in GWR-CP-EX-DEF.

## DISCHARGE REGULATIONS

An operator of a photographic imaging operation must not discharge waste which, at the point of discharge into a sewer, contains:

a. silver in a concentration that is in excess of 5 milligrams per litre (mg/L) as analyzed in a grab sample;
b. exceeds the limits established in GWR-CP-EX-DEF for restricted wastes; or
c. includes prohibited waste, special waste, stormwater, or uncontaminated water.

An operator of a photographic imaging operation that produces liquid waste containing silver must either:

a. collect and transport the waste from the photographic imaging operation for off-site waste management; or
b. treat the waste at the photographic imaging operation site prior to discharge to the sewer using one of the following silver recovery technologies:
   I. two chemical recovery cartridges connected in a series;
   II. an electrolytic recovery unit followed by two chemical recovery cartridges connected in series; or
   III. any other silver recovery technology, or combination of technologies, capable of reducing the concentration of silver in the waste to 5 mg/L or less where valid analytical test data has been submitted to, and accepted by, the Engineer.

## OPERATION

An operator of a photographic imaging operation shall:

a. install and maintain silver recovery technology according to the manufacturer's or supplier's recommendations.
b. collect all liquid waste containing silver in a holding tank and must deliver this waste to the chemical recovery cartridges using a metering pump.
c. calibrate the metering pump at least once per year.

Spill/Leak Prevention

An operator of a photographic imaging operation must locate the silver recovery system in such a manner that an accidental spill, leak or container failure will not result in liquid waste containing silver in concentrations greater than 5 mg/L entering any sewer.

If a location referred to above is not available, an operator of a photographic imaging operation must do one of the following:

a. install spill containment to contain spills or leaks from the silver recovery system; or
b. cap all floor drains into which liquid spilled from the silver recovery system would normally flow.

Testing

When using two separate chemical recovery cartridges, an operator of a photographic imaging operation must test the discharge from the first cartridge for silver content at least once per month using either silver test paper or a portable silver test kit.

When the discharge from the first chemical recovery cartridge referred to above cannot be sampled, an operator of a photographic imaging operation must:

a. install a cumulative flow meter on the silver recovery system; and
b. test the discharge from the second chemical recovery cartridge once per week using silver test paper or a silver test kit.

Cartridge Replacement

An operator of a photographic imaging operation must replace the chemical recovery cartridges when any one of the following occurs[1] [2] [3]:

a. the manufacturer's or supplier's recommended expiry date, as shown on each cartridge, has been reached;
b. eighty percent (80%) of the manufacturer's or supplier's maximum recommended capacity, or total cumulative flow, for each cartridge has been reached;

[1] If treatment of liquid waste with two chemical recovery cartridges connected in series is the only silver recovery technology being used, then the owner of the photographic imaging operation must replace both chemical recovery cartridges when one of the events referred to occurs.

[2] If treatment of liquid waste with two chemical recovery cartridges connected in series is used following treatment by an electrolytic recovery unit, the second cartridge may replace the used first cartridge and a new second cartridge may be installed when one of the events referred to occurs.

[3] Both chemical recovery cartridges used following an electrolytic recovery unit must be replaced by the operator of the photographic imaging operation when one of the events referred to above occurs if this is recommended by the manufacturer or supplier of the cartridges.

c. test data, using silver test paper or a silver test kit, indicates that the discharge from the first cartridge is greater than 1000 mg/L; or
d. analytical data using a method of analysis outlined in standard methods, or an alternative method of analysis approved by the manager, having a method detection limit of 0.5 mg/L silver or lower, indicates that the concentration of silver in the discharge from the silver recovery system is greater than, or equal to, 5 mg/L.

## RECORD KEEPING AND RETENTION

An operator of a photographic imaging operation that uses a silver recovery system must keep, at the photographic imaging operation site, an operation and maintenance manual pertaining to all equipment used in the silver recovery system.

An operator of a photographic imaging operation that uses two chemical recovery cartridges connected in series must keep a record book at the photographic imaging operation site which includes the following information recorded for the previous two years:

a. serial number of each chemical recovery cartridge used;
b. installation date of each chemical recovery cartridge used;
c. expiry date of each chemical recovery cartridge used (where provided by manufacturers or suppliers);
d. maximum recommended capacity, or total cumulative flow, of each chemical recovery cartridge used;
e. dates of all metering pump calibrations;
f. monthly silver test results on the discharge from the first chemical recovery cartridge; or where the discharge from the first cartridge cannot be sampled, weekly silver test results on the discharge from the second chemical recovery cartridge and weekly cumulative flows through the silver recovery system; and
g. dates and descriptions of all operational problems associated with the chemical recovery cartridges and remedial actions taken.

An operator of a photographic imaging operation that uses an electrolytic recovery unit in addition to two chemical recovery cartridges connected in series must keep a record book at the photographic imaging operation site which includes the following information recorded for the previous two years:

a. all information specified above;
b. date of each removal of silver from the electrolytic recovery unit;
c. date of each maintenance check on the electrolytic recovery unit;
d. dates and descriptions of all operational problems associated with the electrolytic recovery unit and remedial actions taken.

Records are required to be available to a GWR inspector on request.

REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| | ORIGINAL (000) | | GSS |
| 25-Mar-04 | 001 | Added revisions table | GSS |
| 13-Nov-06 | 002 | General review and re-number | GSS |
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GLOBAL WATER RESOURCES

CODE OF PRACTICE

GWR-CP-EX-005

# DENTAL OPERATIONS

## APPLICATION

This code of practice for dental operations defines mandatory requirements for managing non-domestic waste discharged directly or indirectly into a sewer connected to a sewage facility.

This code of practice applies to dental operations.

## DISCHARGE REGULATIONS

An operator of a dental operation must not discharge waste which, at the point of discharge into a sewer, contains:

a. prohibited waste, special waste, or stormwater ; or
b. exceeds the limits established in GWR-CP-EX-DEF for restricted wastes.

An operator of a dental operation that produces liquid waste from photographic imaging containing silver shall also comply with the requirements of GWR-CP-EX-004.

An operator of a dental operation that produces wastewater containing dental amalgam must either:

a. collect and transport the wastewater from the dental operation for off-site waste management; or
b. treat the wastewater at the dental operation site prior to discharge to the sewer using a certified amalgam separator.

An operator of a dental operation must install and maintain the amalgam separator according to the manufacturer's or supplier's recommendations in order that the amalgam separator functions correctly. Such separator must be certified for use by the manufacturer under the provisions of ISO 11143.

An operator of a dental operation who installs an amalgam separator must ensure that:

a. all dental operation wastewater that contains dental amalgam is treated using the amalgam separator;
b. a monitoring point is installed at the outlet of the amalgam separator or downstream of the amalgam separator at a location upstream of any discharge of other waste;
c. the monitoring point must be installed in such a manner that the total flow from the amalgam separator may be intercepted and sampled; and
d. the monitoring point shall be readily and easily accessible at all times for inspection.

If the amalgam separator is located downstream of a wet vacuum system, an operator of a dental operation must ensure that:

a. the wet vacuum system is fitted with an internal flow control fitting; or

b. a flow control fitting is installed on the water supply line to the wet vacuum system.

The flow control fitting must be sized to limit the flow to a rate that is no more than the maximum inlet flow rate of the amalgam separator as stated by the manufacturer of the amalgam separator.

An operator of a dental operation must locate an amalgam separator in such a manner that an accidental spill, leak or collecting container failure will not result in waste containing amalgam entering any sewer. If a location is not available, an operator of a dental operation must do one of the following:

a. install spill containment to contain spills or leaks from the amalgam separator; or
b. cap all floor drains into which liquid spilled from the amalgam separator would normally flow.

An operator of a dental operation must replace the amalgam separator's collecting container when any one of the following occurs:

a. the manufacturer's or supplier's recommended expiry date, as shown on the amalgam separator, has been reached; or
b. the warning level specified in the ISO 11143 has been reached; or
c. analytical data obtained using a method of analysis outlined in standard methods, or an alternative method of analysis approved by the manager, having a method detection limit of 0.1 mg/L or lower, indicates that the total concentration of mercury in the discharge from the amalgam separator is greater than, or equal to, 2 mg/L.

An operator of a dental operation shall not dispose of dental amalgam collected in an amalgam separator, a collecting container, or any other device, into the sewer collection system.

## RECORD KEEPING AND RETENTION

An operator of a dental operation that uses an amalgam separator must keep, at the site of installation of the amalgam separator, an operation and maintenance manual containing instructions for installation, operation and maintenance of the amalgam separator installed.

An operator of a dental operation that uses an amalgam separator must post, at the site of installation of the amalgam separator, a copy of the ISO Standard test report pertaining to the amalgam separator installed.

An operator of a dental operation that uses an amalgam separator must keep a record book at the dental operation site that includes the following information pertaining to the amalgam separator installed:

a. date of installation of the amalgam separator and name of the installation service provider;
b. serial number and expiry date of the amalgam separator and/or its components;
c. maximum recommended flow rate through the amalgam separator, where applicable;
d. dates of inspection, maintenance, cleaning and replacement of any amalgam separation equipment or components;
e. dates and descriptions of all operational problems, spills, leaks or collecting container failures associated with the amalgam separator and remedial actions taken;
f. name, address and telephone number of any person or company who performs any maintenance or disposal services related to the operation of the amalgam separator; and
g. dates of pick-up of the collecting container for off-site disposal, volume of waste disposed and the location of disposal.

The records must be retained for a period of two years and must be available to GWR Staff upon request.

REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| | ORIGINAL (000) | | GSS |
| 25-Mar-04 | 001 | Added Revisions Table | GSS |
| 13-Nov-06 | 002 | General review and re-number | GSS |
| 10-Dec-07 | 003 | Amend verbiage with regard to record keeping | MH |
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GLOBAL WATER RESOURCES (GWR)

CODE OF PRACTICE

GWR-CP-EX-035

# AUTOMOBILE WASH AND REPAIR OPERATIONS

## PURPOSE

This Code of Practice defines the requirements for managing waste discharged directly or indirectly into a sewer connected to a wastewater facility from automobile wash and repair or facilities employing automobile wash and repair as a primary or secondary business operation.

This code of practice applies to:

a. Operators of automobile washes with floor drains that collect oil, grease and sand.

b. Operators of automotive repair shops with floor drains that collect oil, grease and sand as a secondary influent.

## DISCHARGE REGULATIONS

An operator of an auto wash and/or repair must not discharge waste, which at the point of discharge into a sewer, contains:

a. Oil and grease concentrations that are in excess of 100 milligrams per liter as analyzed into a grab sample;

b. Sand, rocks or dirt which could interfere with the collection system.

c. Additives used to break down surfactant loads shall comply with GWR Definitions Code of Practice – GWR-CP-EX-DEF.

d. At no time shall rain water be allowed to enter the collection system via floor drains.

## SAND AND OIL INTERCEPTORS

Sand and oil interceptors are required to be installed and maintained by the Owner of the automobile wash or repair operations within the collection system of GWR facilities. Sand and oil interceptors shall conform to the requirements of this Code of Practice.

### Design

Sand and oil interceptors shall be designed by using the 2000 International Plumbing Code (IPC) IPC 1003.3.4.2

Sand and oil interceptors shall have a minimum capacity of six (6) cubic feet for the first 100 square feet of area to be drained, plus 1 square foot for each additional 100 square feet of area to be drained.

### Installation

A sand and oil interceptor must be located so that it is readily and easily accessible for inspection and maintenance. A sampling point shall be installed as follows:

a. A sampling tee shall be located at the outlet of the sand and oil interceptor or downstream of the interceptor at a location upstream of any discharge of other waste;

b. The sampling tee shall be not less than 10.2 cm (4 inches) in diameter, and shall be installed so that it opens in a direction at right angles to and vertically above the flow of the sewer pipe; and

c. The sampling tee shall be readily and easily accessible at all times for inspection.

Maintenance

An operator of an automobile wash or repair operation shall maintain all sand and oil interceptors in accordance with the manufacturer's recommendations so that the sand and oil interceptor functions properly.

An operator of an automobile wash or repair operation must not permit sand and oil to accumulate in a sand and oil interceptor in excess of the lesser of six (6) inches or 25% of the wetted height of the interceptor.

An operator of an automobile wash or repair operation shall not dispose of oil and grease from a interceptor to a sewer. All cleaning shall be accomplished by employing vactor trucks or other means to preclude any sand or oil from entering the collection system.

An operator of an automobile wash or repair operation must not use or permit the use of chemical agents, enzymes, bacteria, solvents, hot water or other agents to facilitate the passage of sand or oil through a sand and oil interceptor.

Connections to Sand and Oil Interceptors

An operator of an automobile wash or repair operation shall have the following fixtures connected to the sand and oil interceptor system:

a. All floor drains, wash sinks and washing machines.

The following fixtures shall not be connected to a sand and oil interceptor:

a. Toilets, urinals and hand sinks

b. Storm drains

## SAMPLING

At the request of GWR, the operator of an automobile wash or repair operation shall confirm the operation of any sand and oil interceptor via analytical testing. This testing shall be performed by an accredited laboratory, and paid for by the owner of the sand and oil interceptor.

## RECORDKEEPING AND RETENTION

An operator of an automobile wash or repair operation must keep a record at the auto wash or repair operation of all sand and oil interceptor inspection and maintenance activities including:

a. The date of inspection or maintenance;

b. The maintenance conducted;

c. The type and quantity of the material removed from the sand and oil interceptor; and

d. The location of disposal of the material removed from the sand and oil interceptor.

The records shall be retained for a period of two years, and shall be available on request to GWR Staff.

REVISIONS

| Date | Revision Number | Revisions | OPI |
|---|---|---|---|
| 2 June 2008 | ORIGINAL (000) | | SA |
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# GSS 4

Maricopa County
Environmental Services Department

## PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name: 07-179**
**PWS ID#: Granite Mountain Ranch**

Type of System: Community Number of POE's: 1 Surface Water: No
Number of Service Connections: 50 Population Served: 155

Assigned Monitoring Dates - Initial: 1/1/2003 Phase II: 1/1/2003 Phase V: 1/1/2003

Does the water system have a Certified Operator? yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: 11/28/2006

Does the system have major O & M deficiencies? No
Please describe:

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **1/24/07** By: **Laura Moorhead** Initials: _____
Phone: **(602) 506-6631**

Requested By: ACC Fax Number/ Contact: _____ Tracking Number: 1235
Supervisor Initials: GY Date: 1/24/07

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

# Maricopa County

Environmental Services

Water and Waste Management Division
1001 N. Central Avenue #250
Phoenix, Arizona 85004
Phone: (602) 506-6666
Fax: (602) 372-0866
TDD 602 372-0622

## Sanitary Survey Deficiencies Corrected.

December 22, 2008

Global Water.
Attn: Susan Armijo
21410 N. 19th Ave Suite 201
Phoenix, AZ 85027

Re: PWS 07-733

Dear Ms. Armijo:

On October 14, 2008 I performed a sanitary survey of the West Phoenix Estates #6 water system, which included a list of deficiencies that needed to be corrected. This department has received your documentation of deficiencies corrected. Based on the information available, we currently show the water system is in **Compliance** with the Safe Drinking Water Rule for this date.

If this department is made aware of new or different information, the compliance status may change. If you have any questions or need additional information on the requirements for a public water system operating in Maricopa County, please feel free to contact me at (602) 506-5173.

Sincerely,

Duncan Wright
Environmental Specialist, Drinking Water Program

cc ADEQ (with enclosures)
PWS File
Michael Mallette

Maricopa County
Environmental Services Department

## PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name: Valencia Water Company**
**PWS ID#: 07-078**

Type of System: Community Number of POE's: 3 Surface Water: N/A
Number of Service Connections: 3735 Population Served: 11578

Assigned Monitoring Dates - Initial: 1/1/94 Phase II: 1/1/94 Phase V: 1/1/94

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: February 9, 2006

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe:

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **2/14/07** By: **Duncan Wright** Initials: _____
Phone: **(602) 506-5173**

Requested By: ACC Fax Number/ Contact: _____ Tracking Number: 1246
Supervisor Initials: GY Date: 2/21/07

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Maricopa County
Environmental Services Department

# PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name:** Sweet Water II
**PWS ID#:** 07-129

Type of System: Community Number of POE's: 1 Surface Water: no
Number of Service Connections: 94 Population Served: 291

Assigned Monitoring Dates - Initial: 1/1/95 Phase II: 1/1/95 Phase V: 1/1/98

Does the water system have a Certified Operator? yes

Does the system have major treatment plant deficiencies? no
Please describe: _____

Date of last inspection: June 1, 2007

Does the system have major O & M deficiencies? no
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? no
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: May 7, 2008 By: **Laura Moorhead** Initials: _____
Phone: **(602) 506-6631**

Requested By: Susan Armijo Fax Number/ Contact: _____ Tracking Number: 1496
Supervisor Initials: GY Date: 5/12/08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 250 Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 372-0866

# Maricopa County

Environmental Services

Water and Waste Management Division
1001 N. Central Avenue #250
Phoenix, Arizona 85004
Phone: (602) 506-6666
Fax: (602) 372-0866
TDD 602 372-0622

## Sanitary Survey Deficiencies Corrected.

December 22, 2008

Global Water.
Attn: Susan Armijo
21410 N. 19th Ave Suite 201
Phoenix, AZ 85027

Re: PWS 07-071

Dear Ms. Armijo:

On October 14, 2008 I performed a sanitary survey of the Sunshine water system, which included a list of deficiencies that needed to be corrected. This department has received your documentation of deficiencies corrected. Based on the information available, we currently show the water system is in **Compliance** with the Safe Drinking Water Rule for this date.

If this department is made aware of new or different information, the compliance status may change. If you have any questions or need additional information on the requirements for a public water system operating in Maricopa County, please feel free to contact me at (602) 506-5173.

Sincerely,

Duncan Wright
Environmental Specialist, Drinking Water Program

cc ADEQ (with enclosures)
PWS File
Michael Mallette

Maricopa County
Environmental Services Department

## PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name: Sun Valley Ranch**
**PWS ID#: 07-195**

Type of System: Community Number of POE's: 1 Surface Water: n/a
Number of Service Connections: 383 Population Served: 1156

Assigned Monitoring Dates - Initial: 1/1/98 Phase II: 1/1/98 Phase V: 1/1/98

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: November 14, 2006

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **05/15/2008** By: **Duncan Wright** Initials: **dw**
Phone: **(602) 506-5173**

Requested By: Susan Armijo Fax Number/ Contact: _____ Tracking Number: 1498
Supervisor Initials: MJ Date: 5-16-08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 250 Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 372-0866

Maricopa County
Environmental Services Department

# PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name:** Roseview Water System
**PWS ID#:** 07-082

Type of System: Community Number of EPDS's: 1 Surface Water: N/A
Number of Service Connections: 17 Population Served: 30

Assigned Monitoring Dates - Initial: 1/1/02 Phase II: 1/1/02 Phase V: 1/1/02

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? Minor.
Please describe: ATC for POU System for arsenic removal issued 10/18/07. AOC has not yet been issued by MCESD. Two POU samples dated 12/3/2007 show levels less than .002 mg/l.

Date of last Sanitary Survey: September 25, 2007

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? Minor.
Please describe: Arsenic running annual average at EPDS is .0225 mg/l, above the MCL of .01 mg/l. Samples at POU have been below the MCL but will not be entered into SDWIS until AOC has been issued.

General Public Water System Compliance Status? **Non-compliant, minor**

Date of compliance review: **May 27, 2008** By: **Rob Collins** Initials: RC
Phone: **(602) 506-0719**

Requested By: Susan Armijo, Global Fax Number/ Contact: e-mail Tracking Number: 1527
Supervisor Initials: M Date: 5-30-8

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Janice K. Brewer
Governor

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

January 29, 2009

Arizona Corporation Commission
Ms. Dorothy Hains, Utilities Engineer
1200 W. Washington
Phoenix, Arizona 85007

RE: Compliance Status for Palo Verde Utilities WRF, Inventory number 105228, Place ID: 5048, Permit number: 34986 and 43460.

Dear Ms. Hains;

Your request for evaluation of compliance status for the above facility is completed. Our records indicate that Palo Verde Utilities, WRF has Aquifer Protection Permit number 34460 and AZPDES permit number 37120 issued on 11/05/2007 and 6/5/2006 respectively.

Both, the Aquifer Protection and AZPDES Permit reporting requirements and monitoring results which have been submitted indicate the facility **is in compliance** based on the current information that is available to ADEQ. No enforcement actions are pending.

It should be understood that the compliance status of a facility may change from time to time based upon monitoring results or a facility inspection. Therefore this is based on the most current information available.

Sincerely,

Fred Vakili, EHS- II
Water Quality Data Unit
Water Quality Compliance Section
FAV@AZDEQ.GOV

# Maricopa County

Environmental Services

DEC 0 1 2008

Water and Waste Management Division
1001 N. Central Avenue #250
Phoenix, Arizona 85004
Phone: (602) 506-6666
Fax: (602) 372-0866
TDD 602 372-0622

## Sanitary Survey Deficiencies Corrected.

November 24, 2008

Garden City Water System
Attn: Susan Armijo
21410 North 19th Ave, Suite 201
Phoenix, AZ 85027

Re: PWS 07-037

Dear Ms. Armijo:

On October 14, 2008 I performed a sanitary survey of the Garden City Water System, which included a list of deficiencies that needed to be corrected. This department has received your documentation of deficiencies corrected. Based on the information available, we currently show the water system is in **Compliance** with the Safe Drinking Water Rule for this date.

If this department is made aware of new or different information, the compliance status may change. If you have any questions or need additional information on the requirements for a public water system operating in Maricopa County, please feel free to contact me at (602) 506-5173.

Sincerely,

Duncan Wright
Environmental Specialist

cc ADEQ
PWS File
Michael Mallette

Maricopa County
Environmental Services Department

# PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name:** Dixie Water Company
**PWS ID#:** 07-030

Type of System: Community Number of POE's: 1 Surface Water: n/a
Number of Service Connections: 26 Population Served: 81

Assigned Monitoring Dates - Initial: 1/1/99 Phase II: 1/1/99 Phase V: 1/1/99

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? n/a
Please describe: _____

Date of last inspection: February 13, 2004

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: System has performed public notice for total coliform MCL in November 2005 and for missed monitoring. Other corrective action also completed.

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **09/11/2006** By: **Genevieve Young** Initials: **GY**
Phone: **(602) 506-0462**

Requested By: Robyn Wymer Fax Number/ Contact: _____ Tracking Number: 1184

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

Maricopa County
Environmental Services Department

# PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name: Bulfur Water**
**PWS ID#: 07-114**

Type of System: Community Number of POE's: 1 Surface Water: n/a
Number of Service Connections: 82 Population Served: 246

Assigned Monitoring Dates - Initial: 1/1/95 Phase II: 1/1/95 Phase V: 1/1/98

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: November 1, 2006

Does the system have major O & M deficiencies? No
Please describe: System submitted documentation on 5/16/2008 that Backflow Prevention plan has been implemented.

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **05/20/2008** By: **Duncan Wright** Initials: **dw**
Phone: **(602) 506-5173**

Requested By: Susan Armijo Fax Number/ Contact: _____ Tracking Number: 1530
Supervisor Initials: [illegible] Date: 5-23-08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 250 Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 372-0866

Maricopa County
Environmental Services Department

## PUBLIC WATER SYSTEM COMPLIANCE STATUS REPORT

**System Name:** B&D Buckeye Ranch

**PWS ID#:** 07-618

Type of System: Community Number of POE's: 1 Surface Water: 0
Number of Service Connections: 92 Population Served: 285

Assigned Monitoring Dates - Initial: 1/1/98 Phase II: 1/1/98 Phase V: 1/1/98

Does the water system have a Certified Operator? Yes

Does the system have major treatment plant deficiencies? No
Please describe: _____

Date of last inspection: February 20, 2007

Does the system have major O & M deficiencies? No
Please describe: _____

Does the system have water quality monitoring/reporting deficiencies? No
Please describe: _____

General Public Water System Compliance Status? **Compliant**

Date of compliance review: **05/8/08** By: **Mike Mallette** Initials: **MKM**
Phone: **(602) 506-6644**

Requested By: Jenny Fax Number/ Contact: _____ Tracking Number: 1500
Supervisor Initials: GY Date: 5/12/08

Drinking Water Program
John Kolman, Manager
1001 N. Central Ave., Suite 150Phoenix, Arizona 85004-1940 Phone: (602) 506-6666 Fax: (602) 506-6925

**Arizona Department of Environmental Quality**
Drinking Water Monitoring and Protection Unit
Mail Code 5415B-2
1110 West Washington Street
Phoenix, AZ 85007

# Drinking Water Compliance Status Report

| System Name | System Type | | Is system consecutive? | |
|---|---|---|---|---|
| SANTA CRUZ WATER COMPANY | X | Community | | Yes, |
| System ID # | | Non-transient Non-community | | to PWS # |
| 11131 | | Transient Non-community | X | No |

| | | | | |
|---|---|---|---|---|
| **Overall compliance status** | X | No major deficiencies | | Major deficiencies |
| **Monitoring and Reporting status** | X | No major deficiencies | | Major deficiencies |

Comments: None

| | | | | |
|---|---|---|---|---|
| **Operation and Maintenance status** | X | No major deficiencies | | Major deficiencies |
| **Date of last Sanitary Survey** | 5/31/07 | **Inspector** | Karen Berry, CRO | |

Major unresolved/ongoing operation and maintenance deficiencies:

[ ] unable to maintain 20psi
[ ] cross connection/backflow problems
[ ] treatment deficiencies
[ ] certified operator
[ ] inadequate storage
[ ] surface water treatment rule
[ ] approval to construct/of construction
[ ] other

Comments: None

| | | | | |
|---|---|---|---|---|
| **Is an ADEQ administrative order in effect?** | | Yes | X | No |

Comments: None

| System Information | | | | |
|---|---|---|---|---|
| Population Served | 39,367 | | | |
| Service Connections | 14,689 | | | |
| Number of Entry Points to the Distribution System | 1 | | | |
| Number of Sources | 4 | | | |
| Initial Monitoring Year | 2003 | | | |
| Monitoring Assistance Program (MAP) System | | Yes | X | No |

| | | | |
|---|---|---|---|
| **Evaluation completed by** | Donna Calderon, Manager<br>Drinking Water Monitoring and Protection Unit | | |
| **Phone** | 602-771-4641 | **Date** | December 9, 2008 |

| | |
|---|---|
| X | Based upon data submitted by the water system, ADEQ has determined that this system **is** currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |
| | Based upon the monitoring and reporting deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |
| | Based upon the operation and maintenance deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |

***This compliance status report does not guarantee the water quality for this system in the future, and does not reflect the status of any other water system owned by this utility company.***

**Arizona Department of Environmental Quality**
Drinking Water Monitoring and Protection Unit
Mail Code 5415B-2
1110 West Washington Street
Phoenix, AZ 85007

# Drinking Water Compliance Status Report

| System Name | System Type | | Is system consecutive? | |
|---|---|---|---|---|
| WILLOW VALLEY WC-KING STREET | ☒ | Community | ☐ | Yes, |
| **System ID #** | ☐ | Non-transient Non-community | | to PWS # |
| 08040 | ☐ | Transient Non-community | ☒ | No |

| | | | | |
|---|---|---|---|---|
| **Overall compliance status** | ☒ | No major deficiencies | ☐ | Major deficiencies |
| **Monitoring and Reporting status** | ☒ | No major deficiencies | ☐ | Major deficiencies |

Comments: None

| | | | |
|---|---|---|---|
| **Operation and Maintenance status** | ☒ No major deficiencies | ☐ Major deficiencies | |
| **Date of last Sanitary Survey** | 12/20/06 | **Inspector** | Marti Blad, NRO |

Major unresolved/ongoing operation and maintenance deficiencies:

[☐] unable to maintain 20psi
[☐] cross connection/backflow problems
[☐] treatment deficiencies
[☐] certified operator
[☐] inadequate storage
[☐] surface water treatment rule
[☐] atc/aoc
[☐] other =

Comments: None

| | | | | |
|---|---|---|---|---|
| **Is an ADEQ administrative order in effect?** | ☐ | Yes | ☒ | No |

Comments: None

| System Information | | | | |
|---|---|---|---|---|
| Population Served | 4353 | | | |
| Service Connections | 1451 | | | |
| Number of Entry Points to the Distribution System | 2 | | | |
| Number of Sources | 2 | | | |
| Initial Monitoring Year | 1994 | | | |
| Monitoring Assistance Program (MAP) System | ☒ | Yes | ☐ | No |

| | | | |
|---|---|---|---|
| **Evaluation completed by** | Donna Calderon, Manager<br>Drinking Water Monitoring and Protection Unit | | |
| **Phone** | 602-771-4641 | **Date** | February 13, 2009 |

| | |
|---|---|
| ☒ | Based upon data submitted by the water system, ADEQ has determined that this system **is** currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |
| ☐ | Based upon the monitoring and reporting deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |
| ☐ | Based upon the operation and maintenance deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |

***This compliance status report does not guarantee the water quality for this system in the future, and does not reflect the status of any other water system owned by this utility company.***

**Arizona Department of Environmental Quality**
Drinking Water Monitoring and Protection Unit
Mail Code 5415B-2
1110 West Washington Street
Phoenix, AZ 85007

# Drinking Water Compliance Status Report

| System Name | System Type | | Is system consecutive? | |
|---|---|---|---|---|
| WILLOW VALLEY WC-LAKE CIMARRON | ☒ | Community | ☐ | Yes, to PWS # |
| **System ID #** | ☐ | Non-transient Non-community | | |
| 08129 | ☐ | Transient Non-community | ☒ | No |

| | | | | |
|---|---|---|---|---|
| **Overall compliance status** | ☒ | No major deficiencies | ☐ | Major deficiencies |
| **Monitoring and Reporting status** | ☒ | No major deficiencies | ☐ | Major deficiencies |
| Comments: None | | | | |

| | | | |
|---|---|---|---|
| **Operation and Maintenance status** | ☒ No major deficiencies | ☐ Major deficiencies | |
| **Date of last Sanitary Survey** | 12/20/06 | **Inspector** | Marti Blad, NRO |

Major unresolved/ongoing operation and maintenance deficiencies:

[☐] unable to maintain 20psi
[☐] cross connection/backflow problems
[☐] treatment deficiencies
[☐] certified operator
[☐] inadequate storage
[☐] surface water treatment rule
[☐] atc/aoc
[☐] other =

Comments: None

| | | | | |
|---|---|---|---|---|
| **Is an ADEQ administrative order in effect?** | ☐ | Yes | ☒ | No |
| Comments: None | | | | |

| System Information | | | | |
|---|---|---|---|---|
| Population Served | 384 | | | |
| Service Connections | 112 | | | |
| Number of Entry Points to the Distribution System | 1 | | | |
| Number of Sources | 2 | | | |
| Initial Monitoring Year | 1995 | | | |
| Monitoring Assistance Program (MAP) System | ☒ | Yes | ☐ | No |

| | | | |
|---|---|---|---|
| **Evaluation completed by** | Donna Calderon, Manager DC<br>Drinking Water Monitoring and Protection Unit | | |
| **Phone** | 602-771-4641 | **Date** | February 13, 2009 |

| | |
|---|---|
| ☒ | Based upon data submitted by the water system, ADEQ has determined that this system **is** currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |
| ☐ | Based upon the monitoring and reporting deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |
| ☐ | Based upon the operation and maintenance deficiencies noted above, ADEQ **cannot determine** if this system is currently delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4. |

***This compliance status report does not guarantee the water quality for this system in the future, and does not reflect the status of any other water system owned by this utility company.***

# GSS 5

| COMPANY NAME: Global Water - Palo Verde Utilities Company | |
|---|---|
| Name of System: Palo Verde Utilities Company | Wastewater Inventory Number (if applicable): |

## WASTEWATER COMPANY PLANT DESCRIPTION
## TREATMENT FACILITY

| | |
|---|---|
| **TYPE OF TREATMENT**<br>(Extended Aeration, Step Aeration, Oxidation Ditch, Aerobic Lagoon, Anaerobic Lagoon, Trickling Filter, Septic Tank, Wetland, Etc.) | 1 x 3.0 MGD SBR Tertiary Treatment Facility<br>1 x 0.3 MGD Facultative Lagoon (not in use)<br>1 x 3.0 MGD SBR Tertiary Treatment Facility- not yet operational |
| **DESIGN CAPACITY OF PLANT**<br>(Gallons Per Day) | 3.0 MGD<br>Permitted Capacity = 9.0 MGD (per APP 105228) |

### *LIFT STATION FACILITIES*

| Location | Quantity of Pumps | Horsepower Per Pump | Capacity Per Pump (GPM) | Wet Well Capacity (gals) |
|---|---|---|---|---|
| Rancho El Dorado L/S | 3 | 20HP | 1000 | 23,095 |
| Reclaimed Water Delivery System | 3 | 50HP | 2100 | 93,223 |
| Cobblestone Lift Station | 2 | 18HP | 950 | 8,900 |
| McDavid L/S | 2 | 70HP | 650 | 8,900 |
| Maricopa Groves L/S | 2 | 40HP | 750 | 15,600 |
| Alterra L/S | 2 | 15HP | 800 (no head) | 13,200 |
| Tortosa L/S | 2 | 5 HP | 300 (no head) | 10,300 |
| PVWR Influent L/S | 2 | 100 HP | 5,000 | 263,000 |

### FORCE MAINS

| Size | Material | Length (Feet) |
|---|---|---|
| 6-inch | PVC | 1850 |
| 8-inch | PVC | 520 |
| 10 inch | PVC | 6,552 |
| 14-inch | PVC | 2,406 |
| | | |
| Reclaimed Water Lines | 8" C-900 | 5957 |
| | 10"C-900 | 6260 |
| | 12"C-900 | 130 |
| | 16"C-905 | 5320 |
| | 18"C-905 | 31890 |
| | 24"C-905 | 20536 |
| | 24"C-900 | 9770 |
| | 10" DIP | 30 |
| | 16" DIP | 710 |
| | 18" DIP | 240 |
| | 24"DIP | 2115 |

**MANHOLES**

| Type | Quantity |
|---|---|
| Standard | 1497 |
| Drop | 35 |
| Discharge | 1 |

**CLEANOUTS**

| Quantity |
|---|
| 48 |
| |
| |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Global Water - Palo Verde Utilities Company | |
|---|---|
| Name of System: | Wastewater Inventory Number (if applicable): |

## WASTEWATER COMPANY PLANT DESCRIPTION (CONTINUED)

### COLLECTION MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 6 | PVC | 115 |
| 8 | PVC | 458071 |
| 10 | PVC | 41379 |
| 12 | PVC | 32272 |
| 14 | PVC | 5080 |
| 15 | PVC | 16071 |
| 18 | PVC | 5926 |
| 24 | PVC | 9319 |
| 30 | PVC | 5084 |
| 36 | PVC | 7242 |
| 8 | DIP | 1903 |
| 10 | DIP | 490 |
| 12 | DIP | 2860 |
| 14 | DIP | 480 |
| 15 | DIP | 343 |
| 16 | DIP | 145 |
| 18 | DIP | 255 |
| 24 | DIP | 3200 |
| 30 | DIP | 2495 |
| 18 | HDPE | 2480 |
| 24 | HDPE | 14844 |
| 27 | HDPE | 1679 |
| 30 | HDPE | 11541 |
| 36 | HDPE | 10660 |
| 42 | HDPE | 11551 |
| 48 | HDPE | 4474 |
| 18 | RGR Concrete | 140 |
| 24 | RIB | 100 |
| 30 | RIB | 4260 |

### SERVICES

| Size (in inches) | Material | Quantity |
|---|---|---|
| 4 | PVC | 14,276 |
| 8 | PVC | 8 |

**FOR THE FOLLOWING FIVE ITEMS, LIST THE UTILITY OWNED ASSETS IN EACH CATEGORY PER WASTEWATER SYSTEM**

| | |
|---|---|
| SOLIDS PROCESSING AND HANDLING FACILITIES | 2 x 1.5m Filter Belt Press<br>2 x Conveyor System for Biosolids<br>4 x ¼ in Influent Trash Removal Auger<br>2x Grit Classifier |

| | |
|---|---|
| | 2 x Conveyor for Grit/Trash |
| **DISINFECTION EQUIPMENT** (Chlorinator, Ultra-Violet, Etc.) | 2 x Low Pressure High Intensity UV<br>2 x Chlorination System<br>2 x Dechlorination System |
| **FILTRATION EQUIPMENT**<br>(Rapid Sand, Slow Sand, Activated Carbon, Etc.) | 6 x 1.0 MGD sand filters (gravity, traveling bridge) |
| **STRUCTURES**<br>(Buildings, Fences, Etc.) | 2 x Office/Lab/Storage - 1500 sq ft<br>2 x SBR Blower Building = 1400 sq ft<br>2 x Headworks Building = 2800 sq ft<br>2 x Blower/Solids Handling = 2400 sq ft<br>2 x Masonry Walls (Filtration + Odor Control) = 600 ft<br>Chain Link Fence: Lagoon = 2450 ft, 2 x SBR = 800 ft |
| **OTHER**<br>(Laboratory Equipment, Tools, Vehicles, Standby Power Generators, Etc. | Odor Scrubbers: 2 x Lift Station; 4 x SBR Systems<br>2 x Polymer Injection System<br>2 x 1500 kW D/G<br>2 x350kVAD/G<br>2 x80kVAD/G<br>2 x60kWD/G<br>2 x HACH Portable Water Test Kit (DR2000)<br>5 x ½ Ton Pick-up Truck |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Global Water - Palo Verde Utilities Company | |
|---|---|
| Name of System: | Wastewater Inventory Number (if applicable): |

## WASTEWATER FLOWS

| MONTH/YEAR (Most Recent 12 Months) | NUMBER OF SERVICES | TOTAL MONTHLY SEWAGE FLOW | SEWAGE FLOW ON PEAK DAY |
|---|---|---|---|
| January | 15,678 | 60,128,000 | 2,234,000 |
| February | 15,764 | 58,755,000 | 2,354,000 |
| March | 15,833 | 62,924,000 | 2,313,000 |
| April | 15,965 | 60,441,000 | 2,620,000 |
| May | 16,107 | 59,646,000 | 2,490,000 |
| June | 16,191 | 54,666,000 | 2,039,000 |
| July | 16,285 | 59,048,000 | 2,232,000 |
| August | 16,348 | 60,494,000 | 2,292,000 |
| September | 16,386 | 64,744,000 | 2,706,000 |
| October | 16,418 | 59,430,000 | 2,421,000 |
| November | 16,420 | 62,621,000 | 2,448,000 |
| December | 16,446 | 65,928,000 | 2,427,000 |

**PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE PER WASTEWATER SYSTEM**

| | |
|---|---|
| **Method of Effluent Disposal** (leach field, surface water discharge, reuse, injection wells, groundwater recharge, evaporation ponds, etc.) | Re- Use to Type 2 Reclaimed<br>AzPDES |
| **Groundwater Permit Number** | |
| **ADEQ Aquifer Protection Permit Number** | APP 105228<br>APP 103558<br>APP 105668 |
| **ADEQ Reuse Permit Number** | R103558<br>R105393<br>R105394<br>R105395<br>R105392<br>R105228<br>R105869<br>R105870<br>R105871<br>R105873 |
| **EPA NPDES Permit Number** | AZ0025071 |

*Note: If you are filing for more than one system, please provide separate sheets for each system*

| COMPANY NAME: Global Water - Santa Cruz Water Company | |
|---|---|
| Name of System | ADEQ Public Water System Number 11-131 |

## WATER COMPANY PLANT DESCRIPTION

### WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-612737- Smith | 100 | 1070 | 1000 | 20 | 8 | 1972 |
| 55-617336- Vance | 250 | 1965 | 800 | 20 | 10 | 1973 |
| 55-621407 - Neely West | 350 | 1980 | 700 | 12 | 10 | 1955 |
| 55-621406 - Neely North | 400 | 2000 | 1000 | 12 | 10 | 1955 |
| 55-509941- Rancho Mirage @ | 400 | 2800 | 1100 | 16 | N/A | 1985 |
| 55-621410-Porter @ | 100 | 1000 | 400 | 20 | 10 | 1955 |
| 55-621408- Neely East # | 350 | 2000 | 1000 | 12 | 10 | 1955 |
| 55-801069-Cobblestone@ | 200 | 1280 | 600 | 12 | 10 | 1957 |
| 55-624037-Glennwilde@ | N/A | 1380 | 1992 | 18 | N/A | 1965 |
| 55-622132-Maricopa Meadows # | UNK | 1400 | 600 | 20 | 4 | UNK |
| 55-612741- Maricopa Groves# | N/A | 1200 | 1675 | 20 | N/A | UNK |
| 55-612247- Amarillo Creek East | 300 | 1800 | 1000 | 18 | 10 | 1973 |
| 55-612250- Sunset Canyon ** | 300 | 1500 | 1200 | 16 | 10 | 1978 |
| 55-624031-Homestead West** | UNK | 860 | 1430 | 18 | | 1976 |
| 55-624029 Homestead East** | UNK | 1200 | UNK | 20 | | 1960 |

# Not Operational, ** Well undergoing rehabilitation
@ construction/irrigation use only

### OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| None | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 150 HP | 5 | 1181 | 0 |
| 40 HP | 4 | | |
| 75 HP | 5 | | |
| 50 HP | 5 | | |
| 200HP | 1 | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 500,000 | 2 | 5,000 | 4 |
| 1,500,000 | 2 | 10,000 | 1 |
| 2,500,000 | 1 | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME : Global Water - Santa Cruz Water Company | |
|---|---|
| Name of System: | ADEQ Public Water System Number: 11-131 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | PVC | 11,340 |
| 3 | PVC | 220 |
| 6 | PVC | 26,896 |
| 8 | PVC | 426,449 |
| 10 | PVC | 13,231 |
| 12 | PVC | 84,709 |
| 16 | PVC | 71,463 |
| 20 | PVC | 10,200 |
| | | |
| 6 | DIP | 177 |
| 8 | DIP | 38,883 |
| 12 | DIP | 13,290 |
| 16 | DIP | 74,787 |
| 24 | DIP | 15,724 |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | 1832 |
| 3/4 | 14414 |
| 1 | 198 |
| 1 1/2 | 51 |
| 2 | 151 |
| 3 | 3 |
| Turbo 3 | 0 |
| 4 | 3 |
| Turbo 4 | 0 |
| Comp. 6 | 0 |
| Turbo 6 | 0 |
| Hydrant | 59 |
| | |
| | |

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorine Injection Systems at Main Water Distribution Center and at Groves WDC and Meadows WDC.

STRUCTURES:
Mobile Mini Trailer
Masonry Brick Walls (Vance Well, WTP, WDC's)
Office Trailer at Maricopa Meadows
Office/Customer Service Center 25,000 sf
OTHER:
SCADA Communications System & Video Monitoring System
ITRON 2.0 Radio AMR System (endpoints, MVRS mobile read system, handhelds)
ITRON Fixed Network 2.5 AMR System (CCUs, endpoints)
Trailer Mounted Emergency Generator
Switchgear for Distribution Systems & Well Sites
1 x 600 kW Emergency D/G
2 x Chevrolet Trailblazer
13 x Silverado Utility Vehicles
3 x Colorado Utility Vehicles
3 x Service Body Vehicles
1 x Econoline Van
2 x Toyota Utility Vehicles

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Valencia Water Company | | |
|---|---|---|
| Name of System: | 07-078 | ADEQ Public Water System Number: 07-078 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-207806( 4th Central) | 25 | 400 | 560 | 84 | | |
| 55-607656(4th Baseline #1) | 10 | 80 | 490 | 6 | 2 | |
| 55-577508(4th Baseline #2) | 60 | 600 | 620 | 8 | 2 | |
| 55-607658(7th Alarcon #1) | 15 | 80 | 625 | 6 | 2 | |
| 55-599950(7th Alarcon #2) | 50 | 250 | 610 | 10 | | 2004 |
| 55-202400 (Bales School) | 50 | 30 | 620 | 11 | | |
| 55-2001055(Riata West 1) | Not Active | 425 | 640 | 11 | | |
| 55-202399(Riata West 2) | Not Active | 525 | 660 | 11 | | |
| 55-203651(Evergreen #1) | Not Active | 300 | 520 | 11 | | |
| 55-203650(Evergreen #2) | Not Active | 700 | 800 | 10 | | |
| 55-205540(Evergreen #3) | Not Active | 450 | 740 | 11 | | |
| 55-599204(Blue Hills #1) | 20 | 110 | | | | 2004 |
| 55-592220(Blue Hills #2) | 60 | 350 | 900 | 10 ¾ | | |
| 55-595258(Sonoran Vista SW) | 100 | 500 | | | | |
| 55-200564(Sonoran Vista SE) | Not Active | | | | | |
| 55-201740(Sonoran Vista NE) | 150 | 750 | | | | |
| 55-595289(AZ Machinery) | Not Active | | | | | |
| 55-203643(Schult #1) | Not Active | | 535 | 11 | | |
| 55-203620(Schult #2) | Not Active | | 200 | 3 | | |
| 55-206355(Evergreen #4) | Not Active | | 760 | 11 | | |
| 55-207988(Evergreen #5) | Not Active | | 820 | 11 | | |
| 55-201739(Crystal Vista) | Not Active | | 650 | 11 | | |
| 55-206042(Montana Vista) | Not Active | | 1,000 | 11 | | |
| 55-201726(Miller Manor ) | Not Active | | 800 | 10 | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 25 | 8 | 164 | |
| 15 | 8 | | |
| 5 | 2 | | |
| 20 | 3 | | |
| 30 | 3 | | |
| 40 | 6 | | |
| 50 | 4 | | |
| 60 | 2 | | |
| 100 | 2 | | |
| 150 | 2 | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 750,000 | 1 | 5,000 | 5 |
| 500,000 | 2 | 4,000 | 1 |
| 190,000 | 1 | 2,000 | 1 |
| 180,000 | 1 | 1,000 | 1 |
| 100,000 | 1 | 6,000 | 1 |
| 215,000 | 1 | | |
| 800,000 | 1 | | |
| 1,000,000 | 1 | | |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Valencia Water Company | |
|---|---|
| Name of System: Valencia Water Company | ADEQ Public Water System Number: 07-0780 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | PVC | 525 |
| 3 | PVC | 6,675 |
| 4 | PVC | 52,731 |
| 5 | | |
| 6 | PVC | 51,850 |
| 8 | PVC | 85,930 |
| 10 | | |
| 12 | PVC | 1906 |
| | | |
| 6 | DIP | 382 |
| 8 | DIP | 155 |
| 16 | DIP | 16,123 |
| 18 | DIP | 60 |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | 4787 |
| 3/4 | 380 |
| 1 | 118 |
| 1 1/2 | 18 |
| 2 | 129 |
| Comp. 3 | 3 |
| Turbo 3 | 0 |
| Comp. 4 | 1 |
| Turbo 4 | 0 |
| Comp. 6 | 1 |
| Turbo 6 | 0 |
| Hydrant | 29 |
| | |

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
ArsenX treatment systems
- 7TH & Alarcon
- Bales
- Blue Hills
- 4th & Baseline
- 4th & Central

Coagulation Filtration System
- Sonoran Vista

STRUCTURES:
Local Office structure - storage, office space etc (201 E Coronado, Buckeye)
Block Walls around well sites and booster stations

OTHER:
10 Utility Vehicles
1 Dump Truck
1 Backhoe
1 Trackhoe
3 Trailers

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Buckeye | | |
|---|---|---|
| Name of System: | CONSOLIDATED | ADEQ Public Water System Number: |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802328 (SWI) | 3 | 30 | 513 | 18 | 1 ¼ | |
| 55-802333 (SW2) | 5 | 40 | 279 | 8 | 1 ½ | |
| 55-800947 (Sun Valley) | 20 | 300 | | 16-20 | 1 ½ | |
| 55-618513 (Bulfer) | 5 | 40 | 252 | 8 | 1 ½ | |
| 55-572657 (Sonoran R.) | 5 | 150 | 850 | 6 | 1 ½ | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| See Individual PWS | | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| See Individual PWS | | | |
| | | | |
| | | | |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: CONSOLIDATED | ADEQ Public Water System Number: |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | PVC | 525 |
| 7 | PVC | 1,000 |
| 4 | PVC | 4,000 |
| 5 | | |
| 6 | PVC | 29,134 |
| 8 | PVC | 900 |
| 10 | PVC | 800 |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | 523 |
| 3/4 | 74 |
| 1 | 54 |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Arsenic Treatment System at Sonoran Ridge

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: 07-195 Sun Valley/SW 1 | ADEQ Public Water System Number: |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802328 (SWI) | 3 | 30 | 513 | 18 | 1 ¼ | |
| 55-800947 (Sun Valley) | 20 | 300 | | 16-20 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 7.5 | 1 | | |
| 10 | 2 | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 125,000 | 1 | 3,000 | 1 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: 07-195 Sun Valley/SW 1 | ADEQ Public Water System Number: |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

*This information is not available for individual PWS. See Consolidated report above.

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

STRUCTURES:

OTHER:

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: 07-129 Sweetwater II | ADEQ Public Water System Number: |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802333 (SW2) | 5 | 40 | 279 | 8 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 7.5 | 1 | | |
| 5 | 1 | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 11,000 | 4 | 2,000 | 1 |
| 147,000 | 1 | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Buckeye | | |
|---|---|---|
| Name of System: | Sweetwater II | ADEQ Public Water System Number: |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

*This information is not available for individual PWS. See Consolidated report above.

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

STRUCTURES:

OTHER:

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: 07-114 Bulfer/Primrose | ADEQ Public Water System Number: |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-618513 (Bulfer) | 5 | 40 | 252 | 8 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 25 | 1 | | |
| 10 | 2 | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 200,000 | 1 | 2000 | 1 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: 07-114 Bulfer/Primrose | ADEQ Public Water System Number: |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

*This information is not available for individual PWS. See Consolidated reported above

For the following three items, list the utility owned assets in each category for each system.

TREATMENT EQUIPMENT:

STRUCTURES:

OTHER:

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

**COMPANY NAME: Water Utility of Greater Buckeye**

**Name of System: 07-732 Sonora Ridge** **ADEQ Public Water System Number:**

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-572657 (Sonoran R) | 5 | 150 | 850 | 6 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 30 | 1 | 24 | |
| 20 | 2 | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 150,000 | 1 | 5,000 | 1 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Buckeye | |
|---|---|
| Name of System: 07-732 Sonora Ridge | ADEQ Public Water System Number: |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

***This information not available for individual PWS. See Consolidated reported above.**

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:

Arsenic Treatment System

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system***

| COMPANY NAME: Water Utility of Greater Tonopah | | |
|---|---|---|
| Name of System: | CONSOLIDATED | ADEQ Public Water System Number: |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-803811 (B&D) | 1.5 | 20 | 283 | 12 | 1 ½ | |
| 55-639586 (Dixie) | 5 | 40 | 246 | 16 | 1 ½ | |
| 55-804131 (Garden C) | 5 | 30 | 980 | 8 | 1 ½ | |
| 55-802143 (Roseview) | 5 | 30 | 975 | 6 | 1 ½ | |
| 55-802141 (Sunshine) | 7.5 | 130 | 153 | 8 | 1 ½ | |
| 55-802145 (WPE6) | 7.5 | 20 | 570 | 8 | 1 ½ | |
| 55-802144 (Tufte) | 2 | 20 | 400 | 8 | 1 ½ | |
| 55-802962 (Buckeye R) | 5 | 125 | 900 | 16 | 2 | 2000 |
| 55-600209 ( WPE 1) | 10 | 20 | 790 | 8 | 1 ½ | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| See Individual PWS | | 25 | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| See Individual PWS | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | | |
|---|---|---|
| Name of System: | CONSOLIDATED | ADEQ Public Water System Number: |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | PVC | 12,290 |
| 3 | PVC | 2,790 |
| 4 | PVC | 33,680 |
| 5 | | |
| 6 | PVC | 10,561 |
| 8 | PVC | 13,700 |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | 338 |
| 3/4 | 3 |
| 1 | 15 |
| 1 1/2 | 2 |
| 2 | 5 |
| Comp. 3 | 1 |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | 1 |
| | |
| | |

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinator installed at each well site.
Arsenic/Fluoride Treatment at WPE #6
Arsenic Treatment System at B&D/Buckeye Ranch and Sunshine.
Point of Use System at Tufte, Roseview and WPE #1

STRUCTURES:

OTHER:
1 Company Vehicle

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-618 B&D/Buckeye Ranch | ADEQ Public Water System Number: 07-618 |

## WATER COMPANY PLANT DESCRIPTION

### WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-803811 (B&D) | 1.5 | 20 | 283 | 12 | 1 ½ | |
| 55-802962 (Buckeye R) | 5 | 125 | 900 | 16 | 2 | 2000 |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

### OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 40 | 1 | | |
| 10 | 3 | | |
| 150 | 1 | | |
| 7.5 | 1 | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 150,000 | 1 | 5,000 | 1 |
| 5,000 | 1 | 500 | 1 |
| 220,000 | 1 | 2,000 | 1 |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-618 B&D/Buckeye Ranch | ADEQ Public Water System Number: 07-618 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

*This information is not available for individual PWS. Consolidated Report above

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinators installed at each well site.
Arsenic Treatment System

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-030 Dixie | ADEQ Public Water System Number: 07-030 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-639586 (Dixie) | 5 | 40 | 246 | 16 | 1 ½ | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 5 | 1 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 10,000 | 1 | 500 | 1 |
| 5,000 | 1 | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-030 Dixie | ADEQ Public Water System Number: 07-030 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

***This information is not available for individual PWS. Consolidated Report above**

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinators installed at each well site.

STRUCTURES:

OTHER:

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-733 WPE 6 | ADEQ Public Water System Number: 07-733 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802145 (WPE6) | 7.5 | 20 | 570 | 8 | 1 ½ | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 7.5 | 2 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 6,000 | 1 | 2,000 | 1 |
| 5,000 | 1 | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

**COMPANY NAME: Water Utility of Greater Tonopah**

**Name of System: 07-733 WPE 6** **ADEQ Public Water System Number: 07-733**

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

***This information is not available for individual PWS. Consolidated Report above**

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinators installed at each well site.
Arsenic/fluoride treatment at WPE #6

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-617 Tufte | ADEQ Public Water System Number: 07-617 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802144 (Tufte) | 2 | 20 | 400 | 8 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 5 | 1 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 5,700 | 1 | 1250 | 1 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-617 Tufte | ADEQ Public Water System Number: 07-617 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

*This information is not available for individual PWS. Consolidated Report above

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinator to be installed at each well site.
Point of Use Arsenic Treatment systems installed at each residence

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-037 Garden City | ADEQ Public Water System Number: 07-037 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-804131 (Garden C) | 5 | 30 | 980 | 8 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 5 | 1 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 15,000 | 1 | 2,000 | 1 |
| 10,000 | 1 | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-037 Garden City | ADEQ Public Water System Number: 07-037 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

***This information is not available for individual PWS. Consolidated Report above**

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinator installed at each well site.

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-082 Roseview | ADEQ Public Water System Number: 07-082 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802143 (Roseview) | 5 | 30 | 975 | 6 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 3 | 2 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 5,000 | 1 | 1,000 | 1 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-082 Roseview | ADEQ Public Water System Number: 07-082 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

MAINS

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CUSTOMER METERS

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

*This information is not available for individual PWS. Consolidated Report above

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:

Chlorinator installed at each well site.

Point of Use System

STRUCTURES:

OTHER:

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-071 Sunshine | ADEQ Public Water System Number: 07-071 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-802141 (Sunshine) | 7.5 | 130 | 153 | 8 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 30 | 2 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 100,000 | 1 | 5,000 | 1 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: 07-071 Sunshine | ADEQ Public Water System Number: 07-071 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

***This information is not available for individual PWS. Consolidated Report above**

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:

Chlorinator installed at each well site.

Arsenic Treatment System

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: WPE #1 | ADEQ Public Water System Number: N/A |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-600209 (WPE#1) | 10 | 20 | 790 | 8 | 1 ½ | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 5 | 1 | | |
| | | | |
| | | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 5,000 | 1 | 50 | 2 |
| | | | |
| | | | |

*Note: If you are filing for more than one system, please provide separate sheets for each system.*

| COMPANY NAME: Water Utility of Greater Tonopah | |
|---|---|
| Name of System: WPE #1 | ADEQ Public Water System Number: N/A |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | |
| 3/4 | |
| 1 | |
| 1 1/2 | |
| 2 | |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | |
| Comp. 6 | |
| Turbo 6 | |
| | |
| | |

***This information is not available for individual PWS. Consolidated Report above**

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
Chlorinator to be installed at each well site.
Point of Use System

STRUCTURES:

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: WILLOW VALLEY WATER COMPANY | |
|---|---|
| Name of System: Lake Cimmaron 08-129 | ADEQ Public Water System Number: |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-604161 (Lake Cimarron Little) | 5 | 225 | 102 | 16 | 6 | |
| 55-604160 (Lake Cimarron Big) | 10 | 400 | 100 | 12 | 14 | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 25 | 2 | | |
| 15 | 2 | | |
| | | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 210,000 | 1 | 5000 | 1 |
| | | | |
| | | | |
| | | | |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: WILLOW VALLEY WATER COMPANY | |
|---|---|
| Name of System: Co King 08-040 | ADEQ Public Water System Number:08-040 |

# WATER COMPANY PLANT DESCRIPTION

## WELLS

| ADWR ID Number* | Pump Horsepower | Pump Yield (gpm) | Casing Depth (Feet) | Casing Diameter (Inches) | Meter Size (inches) | Year Drilled |
|---|---|---|---|---|---|---|
| 55-603947(King St) | 15 | 500 | 97 | 8 | 4 | |
| 55-603949(Unit 17) | 15 | 400 | 86 | 8 | 6 | |
| 55603951(Unit 1) Inoperable | 15 | 250 | 100 | 16 | 4 | |
| 55-603952(Riding Club) Inoperable | 5 | 90 | 91 | 20 | 3 | |

* Arizona Department of Water Resources Identification Number

## OTHER WATER SOURCES

| Name or Description | Capacity (gpm) | Gallons Purchased or Obtained (in thousands) |
|---|---|---|
| | | |

| BOOSTER PUMPS | | FIRE HYDRANTS | |
|---|---|---|---|
| Horsepower | Quantity | Quantity Standard | Quantity Other |
| 30 | 2 | 34 | 24 |
| 15 | 4 | | |
| 40 | 1 | | |

| STORAGE TANKS | | PRESSURE TANKS | |
|---|---|---|---|
| Capacity | Quantity | Capacity | Quantity |
| 150,000 | 1 | 13,000 | 1 |
| 93,000 | 1 | 5,000 | 2 |
| 50,000 | 1 | 2,000 | 1 |
| | | 80 | 4 |

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

| COMPANY NAME: WILLOW VALLEY WATER COMPANY | |
|---|---|
| Name of System: | ADEQ Public Water System Number: 08-040 & 08-129 |

## WATER COMPANY PLANT DESCRIPTION (CONTINUED)

**MAINS**

| Size (in inches) | Material | Length (in feet) |
|---|---|---|
| 2 | PVC | 565 |
| 3 | PVC | 2,387 |
| 4 | PVC | 76,262 |
| 5 | | |
| 6 | PVC | 43,110 |
| 8 | PVC | 26,852 |
| 10 | PVC | 1,510 |
| 12 | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**CUSTOMER METERS**

| Size (in inches) | Quantity |
|---|---|
| 5/8 X ¾ | 1,547 |
| 3/4 | 12 |
| 1 | 16 |
| 1 1/2 | 3 |
| 2 | 2 |
| Comp. 3 | |
| Turbo 3 | |
| Comp. 4 | |
| Turbo 4 | 2 |
| Comp. 6 | 3 |
| Turbo 6 | |
| | |
| | |

**For the following three items, list the utility owned assets in each category for each system.**

TREATMENT EQUIPMENT:
NaOCl Injection System
Iron & Manganese removal system at Unit 17

STRUCTURES:
Office Building; Fences around well sites; Wood shed ant King St.

OTHER:

***Note: If you are filing for more than one system, please provide separate sheets for each system.***

# GSS 6

| COMPANY NAME: Global Water - Palo Verde Utilities Company | |
|---|---|
| Name of System: | Wastewater Inventory Number (if applicable): |

## WASTEWATER FLOWS

| MONTH/YEAR (Most Recent 12 Months) | NUMBER OF SERVICES | TOTAL MONTHLY SEWAGE FLOW | SEWAGE FLOW ON PEAK DAY |
|---|---|---|---|
| January | 15,678 | 60,128,000 | 2,234,000 |
| February | 15,764 | 58,755,000 | 2,354,000 |
| March | 15,833 | 62,924,000 | 2,313,000 |
| April | 15,965 | 60,441,000 | 2,620,000 |
| May | 16,107 | 59,646,000 | 2,490,000 |
| June | 16,191 | 54,666,000 | 2,039,000 |
| July | 16,285 | 59,048,000 | 2,232,000 |
| August | 16,348 | 60,494,000 | 2,292,000 |
| September | 16,386 | 64,744,000 | 2,706,000 |
| October | 16,418 | 59,430,000 | 2,421,000 |
| November | 16,420 | 62,621,000 | 2,448,000 |
| December | 16,446 | 65,928,000 | 2,427,000 |

**PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE PER WASTEWATER SYSTEM**

| | |
|---|---|
| **Method of Effluent Disposal** (leach field, surface water discharge, reuse, injection wells, groundwater recharge, evaporation ponds, etc.) | Re- Use to Type 2 Reclaimed<br>AzPDES |
| **Groundwater Permit Number** | |
| **ADEQ Aquifer Protection Permit Number** | APP 105228<br>APP 103558<br>APP 105668 |
| **ADEQ Reuse Permit Number** | R103558<br>R105393<br>R105394<br>R105395<br>R105392<br>R105228<br>R105869<br>R105870<br>R105871<br>R105873 |
| **EPA NPDES Permit Number** | AZ0025071 |

*Note: If you are filing for more than one system, please provide separate sheets for each system*

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Santa Cruz Water Company |
| ADEQ Public Water System No. → | 11-131 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF POTABLE CUSTOMERS | POTABLE GALLONS SOLD (Thousands) | POTABLE GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 15,704 | 86,757 | 108,382 | |
| 01/08 | 15,894 | 110,802 | 111,573 | |
| 02/08 | 15,988 | 110,431 | 97,868 | |
| 03/08 | 16,048 | 103,887 | 119,696 | |
| 04/08 | 16,185 | 106,296 | 131,798 | |
| 05/08 | 16,329 | 162,009 | 172,321 | |
| 06/08 | 16,419 | 156,045 | 184,034 | |
| 07/08 | 16,508 | 170,338 | 181,355 | |
| 08/08 | 16,556 | 168,456 | 177,090 | |
| 09/08 | 16,606 | 177,259 | 185,217 | |
| 10/08 | 16,628 | 149,838 | 162,049 | |
| 11/08 | 16,626 | 160,908 | 165,407 | |
| 12/08 | 16,654 | 125,201 | 125,917 | |
| TOTAL | | 1,788,228 | 1,922,707 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 500,000 | 2 | 55-612737- Smith | 1070 |
| 1,500,000 | 2 | 55-617336- Vance | 1965 |
| 2,500,000 | 2 | 55-621407 - Neely West | 1980 |
| | | 55-621406 - Neely North | 2000 |
| | | 55-509941- Rancho Mirage - potable use only | 2800 |
| | | 55-621410-Porter @ | 1000 |
| | | 55-621408- Neely East # | 2000 |
| | | 55-801069-Cobblestone@ | 1280 |
| | | 55-624037-Glennwilde@ | 1380 |
| | | 55-622132-Maricopa Meadows- irrigation use only | 1400 |
| | | 55-612741- Maricopa Groves# | 1200 |
| | | 55-612247- Amarillo Creek East | 1800 |
| | | 55-612250- Sunset Canyon ** | 1500 |
| | | 55-624031-Homestead West** | 860 |
| | | 55-624029 Homestead East** | 1200 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 1,922,707 |

# Not Operational, ** Well undergoing rehabilitation
@ construction/irrigation use only

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Valencia Water Company |
| ADEQ Public Water System No. → | #07-078 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 4827 | 29,686 | 33,805 | |
| 01/08 | 4980 | 28,828 | 33,589 | |
| 02/08 | 5101 | 33,643 | 35,184 | |
| 03/08 | 5118 | 28,682 | 37,298 | |
| 04/08 | 5130 | 44,522 | 52,936 | |
| 05/08 | 5267 | 59,987 | 61,199 | |
| 06/08 | 5299 | 72,868 | 77,154 | |
| 07/08 | 5359 | 63,950 | 71,068 | |
| 08/08 | 5388 | 69,875 | 74,763 | |
| 09/08 | 5402 | 69,470 | 76,992 | |
| 10/08 | 5425 | 64,056 | 72,268 | |
| 11/08 | 5424 | 63,343 | 59,095 | |
| 12/08 | 5438 | 36,027 | 40,320 | |
| TOTAL | | 664,937 | 725,671 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 785,000 | 1 | 55-607657 - 4th Central | 220 |
| 500,000 | 2 | 55-607656 - 4th Baseline #1 | 80 |
| 190,000 | 1 | 55-577508 - 4th Baseline #2 | 600 |
| 180,000 | 1 | 55-607658 - 7th Alarcon #1 | 80 |
| 100,000 | 3 | 55-599950 - 7th Alarcon #2 | 250 |
| 50,000 | 3 | 55-202400 - Bales School | 300 |
| 40,000 | 1 | *55-201055 - Riata West #1 | 425 |
| | | 55-202399 - Riata West #2 | 525 |
| | | *55-203651 - Evergreen #1 | 300 |
| | | *55-203650 - Evergreen #2 | 700 |
| | | *55-205450 - Evergreen #3 | 450 |
| | | 55-599204 - Blue Hills #1 | 110 |
| | | 55-592220 - Blue Hills #2 | 350 |
| | | 55-595285 - Sonoran Vista SW | 500 |
| | | *55-200564 - Sonoran Vista SE | |
| | | *55-595289 - AZ Machinery | |
| | | *55-203643 - Schult #2 | |
| | | *55-206355 - Evergreen #4 | |
| | | *55-207988 - Evergreen #5 | |
| | | *55-201739 - Crystal Vista | |
| | | *55-206042 - Montana Vista | |
| | | *55-201726 - Miller Manor | |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 725,671 |

* Indicates well Not Active

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Valencia Water Company, Greater Buckeye Division |
| ADEQ Public Water System No. → | Sonoran Ridge System PWS #07-732 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 59 | 1,658 | 2,543 | |
| 01/08 | 59 | 2,695 | 2,556 | |
| 02/08 | 59 | 1,860 | 2,204 | |
| 03/08 | 59 | 2,106 | 2,998 | |
| 04/08 | 59 | 2,847 | 2,018 | |
| 05/08 | 58 | 2,263 | 834 | |
| 06/08 | 58 | 663 | 752 | |
| 07/08 | 58 | 612 | 741 | |
| 08/08 | 58 | 658 | 699 | |
| 09/08 | 58 | 720 | 687 | |
| 10/08 | 58 | 616 | 671 | |
| 11/08 | 59 | 590 | 602 | |
| 12/08 | 58 | 449 | 496 | |
| TOTAL | | 17,737 | 17,801 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 150,000 | 1 | 55-572657 | 150 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 17,801 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Valencia Water Company, Greater Buckeye Division |
| ADEQ Public Water System No. → | Bulfer/Primrose System PWS #07-114 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 91 | 775 | 839 | |
| 01/08 | 91 | 721 | 746 | |
| 02/08 | 91 | 599 | 711 | |
| 03/08 | 91 | 657 | 953 | |
| 04/08 | 91 | 809 | 1,053 | |
| 05/08 | 92 | 1,025 | 1,114 | |
| 06/08 | 92 | 1,193 | 1,256 | |
| 07/08 | 92 | 1,151 | 1,287 | |
| 08/08 | 92 | 1,263 | 1,195 | |
| 09/08 | 92 | 1,185 | 1,019 | |
| 10/08 | 92 | 1,056 | 1,072 | |
| 11/08 | 92 | 884 | 903 | |
| 12/08 | 92 | 635 | 661 | |
| TOTAL | | 11,953 | 12,809 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 200,000 | 1 | 55-618513 | 40 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 12,809 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Valencia Water Company, Greater Buckeye Division |
| ADEQ Public Water System No. → | Sun Valley/Sweetwater 1 System PWS #07-195 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 384 | 3,213 | 2,958 | |
| 01/08 | 385 | 2,173 | 2,952 | |
| 02/08 | 385 | 1,966 | 2,689 | |
| 03/08 | 384 | 2,133 | 3,665 | |
| 04/08 | 384 | 2,779 | 4,285 | |
| 05/08 | 395 | 3,442 | 4,631 | |
| 06/08 | 395 | 4,441 | 5,417 | |
| 07/08 | 400 | 4,232 | 5,055 | |
| 08/08 | 401 | 4,156 | 4,945 | |
| 09/08 | 403 | 4,354 | 4,228 | |
| 10/08 | 404 | 3,354 | 4,169 | |
| 11/08 | 406 | 3,596 | 3,417 | |
| 12/08 | 408 | 2,431 | 2,757 | |
| TOTAL | | 42,270 | 51,168 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 125,000 | 1 | 55-800947 | 300 |
| | | 55-802328 (Inactive) | 30 |
| | | 55-800946 | 500 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 51,168 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Valencia Water Company, Greater Buckeye Division |
| ADEQ Public Water System No. → | Sweetwater 2 System PWS #07-129 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 94 | 747 | 0 | 931 |
| 01/08 | 94 | 662 | 0 | 262 |
| 02/08 | 94 | 602 | 0 | 1390 |
| 03/08 | 94 | 656 | 0 | 1128 |
| 04/08 | 94 | 852 | 0 | 1173 |
| 05/08 | 94 | 1,010 | 0 | 1010 |
| 06/08 | 94 | 1,225 | 0 | 1206 |
| 07/08 | 94 | 1,226 | 0 | 1386 |
| 08/08 | 94 | 1,168 | 0 | 1417 |
| 09/08 | 94 | 1,330 | 0 | 1380 |
| 10/08 | 95 | 1,171 | 0 | 1189 |
| 11/08 | 95 | 928 | 0 | 989 |
| 12/08 | 95 | 755 | 0 | 775 |
| TOTAL | | 12,333 | 0 | 13,461 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 11,000 | 4 | 55-802333 | 40 |
| 147,000 | 1 | | |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 0 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Willow Valley Water Company, Inc. |
| ADEQ Public Water System No. → | 08-040 King St.(interconnected systems to 08-034) |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 1,284 | 4,154 | 5,233 | |
| 01/08 | 1,286 | 3,320 | 4,299 | |
| 02/08 | 1288 | 4,055 | 5,618 | |
| 03/08 | 1288 | 3,718 | 4,958 | |
| 04/08 | 1290 | 5,348 | 7,530 | |
| 05/08 | 1290 | 4,921 | 11,065 | |
| 06/08 | 1290 | 6,674 | 10,438 | |
| 07/08 | 1290 | 7,974 | 11,764 | |
| 08/08 | 1290 | 9,506 | 14,427 | |
| 09/08 | 1291 | 6,327 | 10,394 | |
| 10/08 | 1291 | 6,874 | 10,438 | |
| 11/08 | 1291 | 4,999 | 12,375 | |
| 12/08 | 1294 | 4,550 | 6,773 | |
| TOTAL | | 72,420 | 115,312 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 150,000 | 1 | 55-603947 | 500 |
| 93,000 | 1 | 55-603949 | 400 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 115,312 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Willow Valley Water Company, Inc. |
| ADEQ Public Water System No. → | 08-129 Cimarron Lake System |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 125 | 540 | 850 | |
| 01/08 | 128 | 688 | 719 | |
| 02/08 | 128 | 604 | 670 | |
| 03/08 | 128 | 519 | 789 | |
| 04/08 | 128 | 794 | 1451 | |
| 05/08 | 128 | 867 | 1235 | |
| 06/08 | 128 | 1063 | 1054 | |
| 07/08 | 128 | 1034 | 1144 | |
| 08/08 | 128 | 979 | 1124 | |
| 09/08 | 129 | 1291 | 1538 | |
| 10/08 | 129 | 848 | 1086 | |
| 11/08 | 129 | 642 | 1213 | |
| 12/08 | 129 | 510 | 670 | |
| TOTAL | | 10,379 | 13,543 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 210,000 | 1 | 55-604160 | 400 |
| | | 55-604161 | 225 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 13,543 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Willow Valley Water Company, Inc. |
| ADEQ Public Water System No. → | 08-034 Unit 1 (interconnected systems to 08-040) |

**Water pumped interconnected with PWS# 08-040

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 162 | 1,280 | | |
| 01/08 | 162 | 995 | | |
| 02/08 | 162 | 1,061 | | |
| 03/08 | 162 | 1,033 | | |
| 04/08 | 162 | 1,843 | | |
| 05/08 | 162 | 2,274 | | |
| 06/08 | 161 | 2,197 | | |
| 07/08 | 161 | 2,652 | | |
| 08/08 | 161 | 2,621 | | |
| 09/08 | 161 | 1,906 | | |
| 10/08 | 162 | 2,502 | | |
| 11/08 | 162 | 1,372 | | |
| 12/08 | 162 | 1,545 | | |
| TOTAL | | 23,281 | 0 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 50,000 | 1 | 55-603951 (Inactive) | 250 |
| | | 55-603952 (Inactive | 90 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 0 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | B&D/Buckeye Ranch System PWS #07-618 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 98 | 522 | 669 | |
| 01/08 | 98 | 488 | 595 | |
| 02/08 | 98 | 622 | 638 | |
| 03/08 | 99 | 617 | 844 | |
| 04/08 | 99 | 681 | 1,097 | |
| 05/08 | 99 | 1,180 | 1,368 | |
| 06/08 | 99 | 1,387 | 1,586 | |
| 07/08 | 98 | 1,272 | 1,515 | |
| 08/08 | 99 | 1,329 | 1,410 | |
| 09/08 | 99 | 1,456 | 1,370 | |
| 10/08 | 99 | 1,206 | 1,065 | |
| 11/08 | 99 | 907 | 1,645 | |
| 12/08 | 99 | 1,376 | 796 | |
| TOTAL | | 13,043 | 14,598 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 150,000 | 1 | 55-802962 | 125 |
| 5,000 | 1 | 55-803811 | 20 |
| 220,000 | 1 | | |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 14,598 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | Dixie System PWS #07-030 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 40 | 220 | 271 | |
| 01/08 | 40 | 193 | 263 | |
| 02/08 | 40 | 248 | 276 | |
| 03/08 | 40 | 226 | 328 | |
| 04/08 | 40 | 311 | 428 | |
| 05/08 | 40 | 369 | 456 | |
| 06/08 | 40 | 452 | 598 | |
| 07/08 | 41 | 422 | 561 | |
| 08/08 | 41 | 408 | 620 | |
| 09/08 | 41 | 422 | 867 | |
| 10/08 | 41 | 369 | 715 | |
| 11/08 | 41 | 323 | 305 | |
| 12/08 | 42 | 280 | 239 | |
| TOTAL | | 4,243 | 5,927 | |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 10,000 | 1 | 55-639586 | 40 |
| 5,000 | 1 | | |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 5,927 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | Garden City/Big Horn System PWS #07-037 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 18 | 92 | 177 | |
| 01/08 | 18 | 136 | 186 | |
| 02/08 | 18 | 133 | 127 | |
| 03/08 | 18 | 89 | 151 | |
| 04/08 | 18 | 117 | 176 | |
| 05/08 | 18 | 149 | 227 | |
| 06/08 | 18 | 176 | 282 | |
| 07/08 | 18 | 163 | 256 | |
| 08/08 | 18 | 159 | 300 | |
| 09/08 | 18 | 314 | 255 | |
| 10/08 | 18 | 187 | 247 | |
| 11/08 | 18 | 200 | 184 | |
| 12/08 | 18 | 137 | 169 | |
| TOTAL | | 2,052 | 2,737 | 0 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 10,000 | 1 | 55-804131 | 30 |
| 15,000 | 1 | | |
| | | | |
| | | | |
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| | | | |
| | | | |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 2,737 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | Rose View System PWS #07-082 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 17 | 69 | 165 | |
| 01/08 | 17 | 299 | 222 | |
| 02/08 | 17 | 82 | 72 | |
| 03/08 | 17 | 72 | 166 | |
| 04/08 | 17 | 174 | 172 | |
| 05/08 | 17 | 140 | 314 | |
| 06/08 | 18 | 320 | 287 | |
| 07/08 | 16 | 220 | 275 | |
| 08/08 | 19 | 219 | 239 | |
| 09/08 | 19 | 228 | 179 | |
| 10/08 | 19 | 150 | 213 | |
| 11/08 | 19 | 184 | 163 | |
| 12/08 | 19 | 124 | 111 | |
| TOTAL | | 2,281 | 2,578 | 0 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 5,000 | 1 | 55-804131 | 30 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 2,578 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | Sunshine System PWS #07-071 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 138 | 712 | 750 | |
| 01/08 | 139 | 641 | 732 | |
| 02/08 | 139 | 767 | 687 | |
| 03/08 | 139 | 603 | 1,252 | |
| 04/08 | 139 | 1,245 | 1,500 | |
| 05/08 | 141 | 1,455 | 1,809 | |
| 06/08 | 143 | 1,903 | 1,895 | |
| 07/08 | 144 | 1,824 | 1,910 | |
| 08/08 | 144 | 1,737 | 1,855 | |
| 09/08 | 145 | 1,724 | 1,583 | |
| 10/08 | 144 | 1,656 | 1,482 | |
| 11/08 | 144 | 1,298 | 956 | |
| 12/08 | 144 | 892 | 714 | |
| TOTAL | | 16,457 | 17,125 | 0 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 100,000 | 1 | 55-802141 | 130 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 17,125 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | WPE #1 System PWS # N/A |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 8 | 18 | 40 | |
| 01/08 | 8 | 16 | 40 | |
| 02/08 | 8 | 18 | 50 | |
| 03/08 | 8 | 15 | 50 | |
| 04/08 | 8 | 25 | 45 | |
| 05/08 | 8 | 36 | 49 | |
| 06/08 | 7 | 29 | 36 | |
| 07/08 | 7 | 30 | 31 | |
| 08/08 | 7 | 31 | 35 | |
| 09/08 | 8 | 33 | 31 | |
| 10/08 | 8 | 38 | 45 | |
| 11/08 | 8 | 39 | 39 | |
| 12/08 | 8 | 32 | 48 | |
| TOTAL | | 360 | 539 | 0 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 5,000 | 1 | 55-600209 | 20 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 539 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | WPE #6 System PWS #07-733 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 29 | 90 | 159 | |
| 01/08 | 29 | 87 | 158 | |
| 02/08 | 29 | 98 | 160 | |
| 03/08 | 29 | 85 | 201 | |
| 04/08 | 29 | 143 | 227 | |
| 05/08 | 29 | 156 | 265 | |
| 06/08 | 29 | 203 | 271 | |
| 07/08 | 29 | 189 | 240 | |
| 08/08 | 29 | 146 | 266 | |
| 09/08 | 29 | 222 | 207 | |
| 10/08 | 29 | 145 | 209 | |
| 11/08 | 29 | 160 | 187 | |
| 12/08 | 29 | 124 | 139 | |
| TOTAL | | 1,848 | 2,689 | 0 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 6,000 | 1 | 55-802145 | 20 |
| 5,000 | 1 | | |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 2,689 |

# WATER USE DATA SHEET

| | |
|---|---|
| NAME OF COMPANY → | Water Utility of Greater Tonopah, Inc. |
| ADEQ Public Water System No. → | Tufte WPE #7 System PWS #07-617 |

| MONTH/YEAR (Last 13 Months) | NUMBER OF CUSTOMERS | GALLONS SOLD (Thousands) | GALLONS PUMPED (Thousands) | GALLONS PURCHASED |
|---|---|---|---|---|
| 12/07 | 6 | 30 | 32 | |
| 01/08 | 6 | 28 | 34 | |
| 02/08 | 6 | 28 | 32 | |
| 03/08 | 6 | 26 | 33 | |
| 04/08 | 6 | 28 | 38 | |
| 05/08 | 6 | 30 | 56 | |
| 06/08 | 6 | 54 | 71 | |
| 07/08 | 6 | 71 | 64 | |
| 08/08 | 6 | 50 | 48 | |
| 09/08 | 6 | 40 | 30 | |
| 10/08 | 6 | 23 | 36 | |
| 11/08 | 6 | 38 | 37 | |
| 12/08 | 6 | 28 | 35 | |
| TOTAL | | 473.5 | 546 | 0 |

| STORAGE TANK CAPACITY (Gallons) | NUMBER OF EACH | ARIZONA DEPT. OF WATER RESOURCES WELL I.D. NUMBER | WELL PRODUCTION (Gallons per Minute) |
|---|---|---|---|
| 5,700 | 1 | 55-802144 | 20 |

| | |
|---|---|
| Other Water Sources in Gallons per Minute → | GPM - |
| Fire Hydrants on System → | Yes X No |
| Total Water Pumped Last 13 Months (Gallons in Thousands) → | 546 |

# GSS 7

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to wilful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinbagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64565 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07179 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ ~~309.11~~ 437.61 |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64565

| | |
|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 07179 - ~~Global Water Resources~~ Water Utility of Northern Scottsdale | Owner Id #: 10228 MAP<br>Billing for Calendar Year: 2008<br>Due Date: 12/17/2007 |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 626
Account Code
Signature
Date 11/16/07
Amount 437.61

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~25~~ 73 connections X $ 2.57 . . . . . | $ 187.61 ~~59.11~~ |
| Total Sampling Fee . . . . . | $ 437.61 ~~309.11~~ |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 437.61 ~~309.11~~ |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

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MWI 10/31/2007
WM3000Go

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to wilful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinhagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64567 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07618 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ 501.86 ~~486.44~~ |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

↓ **This entire bottom portion must be returned to ADEQ.** ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64567

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201 | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| PHOENIX AZ 85027 07618 - ~~Global Water Resources~~ B+D | Due Date: 12/17/2007 | |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 501.86

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~92~~ 98 connections X $ 2.57 . . . . . | $ 251.86 ~~236.44~~ |
| Total Sampling Fee . . . . . | $ 501.86 ~~486.44~~ |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 501.86 ~~486.44~~ |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

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MWI 10/31/2007
WM300Go

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to willful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinbagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64558 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07030 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ ~~316.82~~ 355.37 |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

↓ **This entire bottom portion must be returned to ADEQ.** ↓

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64558

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 . 07030 - ~~Global Water Resources~~ Dixie | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| | Due Date: 12/17/2007 | |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 355.37

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~26~~ 41 connections X $ 2.57 . . . . . | $ 105.37 ~~66.82~~ |
| Total Sampling Fee . . . . . | $ 355.37 ~~316.82~~ |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 355.37 ~~316.82~~ |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

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MW1 10/31/2007
WM3003e

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to willful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64569 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07733 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ 329.67 ~~309.11~~ |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64569

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201 | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| PHOENIX AZ 85027 07733 - ~~Global Water Resources~~ WPE #6 | Due Date: 12/17/2007 | |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 329.67

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~23~~ 31 connections X $ 2.57 . . . . . | $ 79.67 ~~59.11~~ |
| Total Sampling Fee . . . . . | $ 329.67 ~~309.11~~ |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 329.67 ~~309.11~~ |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

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MWI 10/31/2007

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to wilful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64559 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07037 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due ..... $ ~~291.12~~ 296.26 KR |
| | Amount Paid ..... $ |

† Keep the top portion for your records. †

ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice

Invoice # 64559

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201 Gaston City<br>PHOENIX AZ 85027 07037 - ~~Global Water Resources~~ | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| | Due Date: 12/17/2007 | |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 296.26

| | |
|---|---|
| Base Fee (all MAP systems) | $ 250.00 |
| Fee per Connection in 2008 ~~16~~ 18 KR connections X $ 2.57 | $ 46.26 ~~41.12~~ KR |
| Total Sampling Fee | $ 296.26 ~~291.12~~ KR |
| Plus Paid Interest Charges and/or Other Adjustments | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 | $ 0.00 |
| Minus Payments Received and/or Other Adjustments | $ 0.00 |
| Amount Due | $ 296.26 ~~291.12~~ KR |
| Amount received by ADEQ (Make check payable to State of Arizona) | $ |

A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

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MW1 10/31/2007

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to willful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64562 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07082 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ 288.55 |
| | Amount Paid . . . . . $ |

† Keep the top portion for your records. †

ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice

Invoice # 64562

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 07082 - ~~Global Water Resources~~ | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| | Due Date: 12/17/2007 | |

RESERVED

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/16/07
Amount 288.55

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008. . . . . 15 connections X $ 2.57 . . . . . | $ 38.55 |
| Total Sampling Fee . . . . . | $ 288.55 |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 288.55 |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

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# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to wilful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64560 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07071 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ ~~550.69~~ 607.23 |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64560

| | |
|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 07071 - ~~Global Water Resources~~ Sunshine | Owner Id #: 10228 MAP<br>Billing for Calendar Year: 2008<br>Due Date: 12/17/2007 |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 630
Account Code
Signature
Date 11/6/07
Amount 607.23

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~117~~ 139 connections X $ 2.57 . . . . . | $ 357.23 ~~300.69~~ |
| Total Sampling Fee . . . . . | $ 607.23 ~~550.69~~ |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 607.23 ~~550.69~~ |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE:

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

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MWI 10/31/2007
WM300Ga

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64563 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07114 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ ~~460.74~~ ~~483.07~~ |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64563

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201 | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| PHOENIX AZ 85027 07114 - ~~Global Water Resources~~ Buffer | Due Date: 12/17/2007 | |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 634
Account Code
Signature
Date 11/16/07
Amount 463.07

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~82~~ 91 connections X $ 2.57 . . . . . | $ 233.87 ~~210.74~~ |
| Total Sampling Fee . . . . . | $ 483.87 ~~460.74~~ |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ 483.87 ~~460.74~~ |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

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# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64568 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07732 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due ..... $ ~~404.20~~ 406.77 KC |
| | Amount Paid ..... $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64568

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 07732 ~~Global Water Resources~~ Sonoran Ridge | Owner Id #: 10228 | MAP |
| | Billing for Calendar Year: 2008 | |
| | Due Date: 12/17/2007 | |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 634
Account Code
Signature
Date 11/16/07
Amount 406.77

| | |
|---|---|
| Base Fee (all MAP systems) ..... | $ 250.00 |
| Fee per Connection in 2008 ..... ~~60~~ 61 KC connections X $ 2.57 ..... | $ 156.77 ~~154.20~~ KC |
| Total Sampling Fee ..... | $ 406.77 ~~404.20~~ KC |
| Plus Paid Interest Charges and/or Other Adjustments ..... | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 ..... | $ 0.00 |
| Minus Payments Received and/or Other Adjustments ..... | $ 0.00 |
| Amount Due ..... | $ 406.77 ~~404.20~~ KC |
| Amount received by ADEQ (Make check payable to State of Arizona) ..... | $ |

A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

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MW1 10/31/2007

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

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Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64566 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 07195 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ ~~1,208.61~~ 1234.31 |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64566

| | |
|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 07195 ~~Global Water Resources~~ Sun Valley | Owner Id #: 10228 MAP |
| | Billing for Calendar Year: 2008 |
| | Due Date: 12/17/2007 |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 634
Account Code
Signature
Date 11/16
Amount 1234.31

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~373~~ 383 connections X $ 2.57 . . . . . | $ ~~958.61~~ 984.31 |
| Total Sampling Fee . . . . . | $ ~~1,208.61~~ 1234.31 |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ ~~1,208.61~~ 1234.31 |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

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| Check Number: |
| Received: |
| Postmarked: |
| Entered: |

MW1 10/31/2007

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to wilful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinhagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64570 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 08040 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due . . . . . $ ~~3,166.95~~ 3,776.50 |
| | Amount Paid . . . . . $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64570

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Co-Ling<br>08040 - ~~Global Water Resources~~ | Owner Id #: 10228 MAP<br>Billing for Calendar Year: 2008<br>Due Date: 12/17/2007 |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 622
Account Code
Signature
Date 11/16/07
Amount 3976.50

| | |
|---|---|
| Base Fee (all MAP systems) . . . . . | $ 250.00 |
| Fee per Connection in 2008 . . . . . ~~1,155~~ 1450 KC connections X $ 2.57 . . . . . | $ ~~2,916.95~~ KC 3726.50 |
| Total Sampling Fee . . . . . | $ ~~3,166.95~~ KC 3976.50 |
| Plus Paid Interest Charges and/or Other Adjustments . . . . . | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 . . . . . | $ 0.00 |
| Minus Payments Received and/or Other Adjustments . . . . . | $ 0.00 |
| Amount Due . . . . . | $ ~~3,166.95~~ KC 3976.50 |
| Amount received by ADEQ (Make check payable to State of Arizona) . . . . . | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix, AZ 85005

Do not write below this line

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| Check Number: |
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MW1 10/31/2007

# ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
## MONITORING ASSISTANCE PROGRAM
## ANNUAL SAMPLING FEE INVOICE

* Pursuant to A.R.S. § 49-113, interest will be charged if full payment is not received by the specified due date. If you dispute the amount listed, please contact ADEQ as soon as possible. To reduce interest costs on an unpaid invoice, you may remit an amount that you believe is not in dispute. However, if nonpayment is due to willful neglect, you may suffer an additional five percent penalty of up to twenty-five percent of the amount due for each month or fraction of a month the amount is past due.

If you have any questions about your invoice, contact W. Scott Steinhagen at (602) 771-4445 or toll-free within Arizona at (800) 234-5677, extension 771-4445.

Pursuant to A.R.S. § 49-360 F and A.A.C. R18-4-224 through R18-4-226, "The director shall establish fees for the monitoring assistance program to be collected from all public water systems..."

| | |
|---|---|
| Owner Id #: 10228 | Invoice Number 64571 |
| To: GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Public Water System ID #: 08129 |
| | Billing for Calendar Year: 2008 |
| | Due Date: December 17, 2007 |
| | Total Amount Due ..... $ ~~1,200.90~~ 576.39 |
| | Amount Paid ..... $ |

↑ Keep the top portion for your records. ↑ ADEQ Federal Tax #866004791

**↓ This entire bottom portion must be returned to ADEQ. ↓**

ADEQ Federal Tax #866004791

Annual Sampling Fee Invoice Invoice # 64571

| | | |
|---|---|---|
| GLOBAL WATER RESOURCES<br>21410 N 19TH AVE, SUITE 201<br>PHOENIX AZ 85027 | Lake Cimarron<br>08129 - ~~Global Water Resources~~ | Owner Id #: 10228 MAP<br>Billing for Calendar Year: 2008<br>Due Date: 12/17/2007 |

## ANNUAL SAMPLING FEE WORKSHEET

Company ID 622
Account Code
Signature
Date 11/16/07
Amount 576.39

| | |
|---|---|
| Base Fee (all MAP systems) ..... | $ 250.00 |
| Fee per Connection in 2008 ..... ~~370~~ 129 connections X $ 2.57 ..... | $ 326.39 ~~950.00~~ |
| Total Sampling Fee ..... | $ 576.39 ~~1,200.00~~ |
| Plus Paid Interest Charges and/or Other Adjustments ..... | $ 0.00 |
| Plus Unpaid Interest Charges as of 10/31/2007 ..... | $ 0.00 |
| Minus Payments Received and/or Other Adjustments ..... | $ 0.00 |
| Amount Due ..... | $ ~~1,200.90~~ 576.39 |
| Amount received by ADEQ (Make check payable to State of Arizona) ..... | $ |

* A $12 fee will be charged for any check not honored by the bank.

Make your check or money order payable to State of Arizona
THIS FORM MUST ACCOMPANY YOUR REMITTANCE.

Mail to: Arizona Department of Environmental Quality
PO Box 18228
Phoenix AZ 85005

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MWI 10/31/2007