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Arizona Corporation Commission
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BOB STUMP
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IN THE MATTER OF THE APPLICATION OF)
ARIZONA-AMERICAN WATER COMPANY,)
AN ARIZONA CORPORATION, FOR A)
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 ANTHEM)
WATER DISTRICT AND ITS SUN CITY)
WATER DISTRICT.)

DOCKET NO. W-01303A-09-0343

IN THE MATTER OF THE APPLICATION OF)
ARIZONA-AMERICAN WATER COMPANY,)
AN ARIZONA CORPORATION, FOR A)
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)
ANTHEM/AGUA FRIA WASTEWATER)
DISTRICT, ITS SUN CITY WASTEWATER)
DISTRICT AND ITS SUN CITY WEST)
WASTEWATER DISTRICT.)

DOCKET NO. SW-01303A-09-0343

NOTICE OF FILING REBUTTAL TESTIMONY

Attached is the Rebuttal Testimony of Thomas M. Broderick and Constance E. Heppenstall filed on behalf of Arizona-American Water Company.

1 RESPECTFULLY SUBMITTED this 7th day of April, 2010.

2 LEWIS AND ROCA LLP

3
4 

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9 Attorneys for Arizona-American Water Company

10 ORIGINAL and thirteen (13) copies
11 of the foregoing filed this 7th day
12 of April, 2010, with:

13 The Arizona Corporation Commission
14 Utilities Division – Docket Control
15 1200 W. Washington Street
16 Phoenix, Arizona 85007

17 Copy of the foregoing hand-delivered
18 this 7th day of April, 2010, to:

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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

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

IN THE MATTER OF THE APPLICATION OF ARIZONA-AMERICAN WATER COMPANY, AN ARIZONA CORPORATION, FOR A 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 ANTHEM WATER AND SUN CITY WATER DISTRICTS

DOCKET NO. W-01303A-09-0343

IN THE MATTER OF THE APPLICATION OF ARIZONA-AMERICAN WATER COMPANY, AN ARIZONA CORPORATION, FOR A 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 ANTHEM / AGUA FRIA WASTEWATER, SUN CITY WASTEWATER AND SUN CITY WEST WASTEWATER DISTRICTS

DOCKET NO. SW-01303A-09-0343

**REBUTTAL OF STAFF RATE DESIGN TESTIMONY
OF
THOMAS M. BRODERICK
ON BEHALF OF
ARIZONA-AMERICAN WATER COMPANY
APRIL 7, 2010**

**REBUTTAL OF STAFF RATE DESIGN TESTIMONY
OF
THOMAS M. BRODERICK
ON BEHALF OF
ARIZONA-AMERICAN WATER COMPANY
APRIL 7, 2009**

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REBUTTAL OF STAFF EXHIBIT TMB-3 ANTHEM SEASONAL CONSUMPTION

1 **EXECUTIVE SUMMARY**

2
3 My Rebuttal of Staff Rate Design Testimony first responds to Staff's recommendations in its
4 March 29, 2010 testimony on district stand-alone rate design. Next, I briefly respond to other
5 district stand-alone issues such as the existing Sun City Low Income Program and the
6 Company's proposed Infrastructure Improvement Surcharge. Then, I turn to the Company's
7 response to Staff's alternative rate consolidation scenarios and conclude that the only sensible
8 alternative approach to stand-alone rates is a state-wide rate consolidation of the Company's
9 districts on a transition timeline which mitigates the short-term rate increases and decreases. It is
10 not sensible to consolidate the rates only of sub-groups of the Company's districts.

.

1 **I INTRODUCTION AND QUALIFICATIONS**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TELEPHONE**
3 **NUMBER.**

4 A. My name is Thomas M. Broderick. My business address is 2355 W. Pinnacle Peak Road,
5 Suite 300, Phoenix, Arizona 85027, and my business phone is 623-445-2420.

6 **Q. ARE YOU THE SAME THOMAS M. BRODERICK THAT SUBMITTED**
7 **DIRECT TESTIMONY ON BEHALF OF THE COMPANY IN THIS CASE ON**
8 **JULY 2, 2009 AND REBUTTAL TESTIMONY ON REVENUE REQUIREMENT**
9 **ON MARCH 22, 2010?**

10 A. Yes.

11 **II PURPOSE OF TESTIMONY**

12 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL OF STAFF RATE DESIGN**
13 **TESTIMONY IN THIS CASE?**

14 A. Please see the executive summary. My Rebuttal of Staff Rate Design Testimony first
15 responds to Staff's recommendations in its March 29, 2010 testimony on district stand-
16 alone rate design. Next, I briefly respond to other district stand-alone issues such as the
17 existing Sun City Low Income Program and the Company's proposed Infrastructure
18 Improvement Surcharge. Then, I turn to the Company's response to Staff's alternative
19 rate consolidation scenarios and conclude that the only sensible alternative approach to
20 stand-alone rates is a state-wide rate consolidation of the Company's districts on a
21 transition timeline which mitigates the short-term rate increases and decreases. It is not
22 sensible to consolidate the rates only of sub-groups of the Company's districts.

23 **Q. WHAT OTHER REBUTTAL TESTIMONY WITNESSES ARE SUPPORTING**
24 **ARIZONA-AMERICAN'S REBUTTAL OF STAFF'S RATE DESIGN?**

1 A. Ms. Constance E. Heppenstall, a consultant employed by Gannett Fleming Inc., describes
2 her efforts to build the rate consolidation model being used by all the parties as well as
3 other details concerning how the model was improved as a result of feedback. She also
4 sponsors a variation on Staff's rate consolidation scenario one which I also discuss.

5 **III DISTRICT STAND ALONE-RATE DESIGN**

6 **Q. IS THE COMPANY SUBMITTING HEREIN REVISED STAND ALONE RATE**
7 **DESIGN AT THIS TIME INCORPORATING ANY REVISIONS SINCE FILING**
8 **ITS REBUTTAL ON MARCH 22, 2010?**

9 A. No, we are not persuaded that any of Staff's stand-alone rate design changes improve the
10 existing rate design and so we continue to support a pro-rate increase to the existing rate
11 design using the revised rebuttal revenue requirement submitted in the Company's March
12 22, 2010 rebuttal testimony. The Company has noted below its specific disagreements
13 with Staff and may provide (on May 14, 2010) a revised rate design if it is persuaded by
14 any of the positions of other interveners in their May 3, 2010 rebuttal testimony.

15 **ANTHEM / AGUA FRIA WASTEWATER DISTRICT**

16 **Q. STAFF STATED IT INTENDS TO ADJUST ITS PROPOSED RESIDENTIAL**
17 **WASTEWATER RATE DESIGN IN ITS SURREBUTTAL TESTIMONY, BUT IN**
18 **THE MEANTIME IS THERE AN ERROR IN STAFF'S PROPOSED RATE OF**
19 **\$13.66 PER 1,000 GALLONS (Michlik, Page 11, lines 9-11) FOR THE**
20 **ANTHEM/AGUA FRIA WASTEWATER DISTRICT?**

21 A. Yes. Even though Staff intends to update this rate in its surrebuttal testimony, Staff
22 witness Mr. Michlik proposed a residential wastewater rate for this district which
23 eliminates the monthly basic service charge and instead would charge a \$13.66

1 commodity rate on each 1,000 gallons of water use by each residential wastewater
2 customer.

3 **Q. DOES STAFF'S RATE OF \$13.66 PER 1,000 GALLONS GENERATE MUCH**
4 **MORE REVENUE THAN ITS OWN RECOMMENDED RESIDENTIAL**
5 **REVENUE REQUIREMENT?**

6 A. Yes, by my calculations. The residential revenue component of Staff's revenue
7 requirement is \$11,707,080 (Staff work paper) and charging a commodity rate of \$13.66
8 per 1,000 gallons on all residential water usage would produce revenues significantly in
9 excess of the residential component of Staff's revenue requirement. Alternatively, a rate
10 of \$9.58 per 1,000 gallons on all residential usage would generate the residential
11 component of Staff's revenue requirement. I am providing this information in the event
12 that Staff does not update this rate in its surrebuttal testimony.

13 **Q. WHY DOES THE COMPANY NOT ACCEPT STAFF'S RECOMMENDATION**
14 **TO ELIMINATE THE RESIDENTIAL BASIC SERVICE CHARGE FOR**
15 **ANTHEM / AGUA FRIA WASTEWATER DISTRICT?**

16 A. The Company *strongly* opposes eliminating the residential monthly basic service charge
17 for wastewater for several reasons. First, it will unduly increase the dependence of
18 wastewater revenues on water sales which will vary significantly from year to year and,
19 in the case of Anthem, are declining. When rates are designed on a sales base that is
20 declines in the future, the Company cannot recover the approved revenue requirement.
21 Residential water sales in Anthem were (in kgals) 1,132,230 in 2007 and were 1,071,647
22 in 2008 or a 5.4% decline over one year. Second, the vast majority of the wastewater
23 cost of service is fixed and recovering revenue from commodity sales only is a very great
24 deviation from cost of service cost causation principles. Third, no party to this case has
25 fully analyzed the potential significant and consequential water conservation reaction to

1 increasing this commodity charge from the existing rate of \$3.48 per 1,000 gallons (up to
2 the first 7,000 gallons of usage) to \$13.66 (or the correct \$9.58) per 1,000 gallons on all
3 usage. Even more water conservation – while important under appropriate circumstances
4 - would cause the Company to further under collect its authorized revenue requirement.

5 If such a rate design is adopted, the Commission must authorize a decoupling feature to
6 this district's rate design to ensure the Company actually collects the authorized revenue
7 requirement.

8 **Q. TO WHAT EXTENT HAS THE COMPANY ANALYZED THE**
9 **CONSERVATION EFFECT OF INCREASING RATE TIERS IN ANTHEM?**

10 A. I have attached "Rebuttal of Staff Exhibit TMB-1 Anthem Tiered Water Rates Study"
11 which provides the results of a recently completed study performed by Mr. Miles H.
12 Kiger, rate analyst in my department. This study documents a reduction in the short-term
13 of at least 5% in water consumption in Anthem district as a result of the rate increase that
14 was effective June 2008. (And because the test year in this case is 2008 and the
15 conservation effects of that rate increase only began to emerge in late 2008 and are
16 continuing today, the Company's 2008 test year billing determinants in this case are
17 already over-stated and so the rates to be authorized in this case will under produce the
18 authorized revenue requirement.) The Company has not analyzed the long-term
19 conservation effect of increasing rate tiers. If the Commission now unleashes yet another
20 strong incentive to conserve water by dramatically increasing the wastewater commodity
21 charge and applying it to all usage, that revenue erosion impact will be further
22 exacerbated.

1 Staff recommended a monthly basic service charge of \$44.40 and \$66.61 for 5/8 inch and
2 3/4 inch *commercial* customers, respectively. This is an appropriate range for *residential*
3 customers as well. The monthly basic service charge recovers fixed investment which
4 does not vary with the volume of usage.

5 **Q. ARE YOU HOPING THAT STAFF DOES NOT FOLLOW THROUGH WITH ITS**
6 **STATED INTENTION OF PROPOSING A WINTER USAGE BASED RATE FOR**
7 **RESIDENTIAL CUSTOMERS IN ANTHEM / AGUA FRIA WASTEWATER**
8 **DISTRICT?**

9 A. Yes, because such a rate proposal in Anthem would likely have negative unintended
10 consequences (increase summer water usage) and would ensure the Company cannot
11 recover the authorized revenue requirement.

12 Alternatively, we would much prefer to work with Staff over the next few years to better
13 analyze and understand the implications of such a winter oriented rate design and only
14 implement it when the environment is appropriate, thereby avoiding unintended
15 consequences.

16 **Q. WHY IS IT POOR TIMING FOR SUCH A PROPOSAL?**

17 A. Anthem's two homeowner associations ("HOAs") have for years been required to over
18 seed in winter their lawns at residences and in common areas to keep lawns green in
19 winter. However, this requirement is apparently now in flux for several reasons
20 including the current difficult economy and many of the common areas were **not** over
21 seeded in winter 2009 / 2010 and some were allegedly even **painted** green to avoid the
22 expense of watering and lawn maintenance. This has caused some of the residents to talk
23 about changing the HOAs requirement and to likewise obtain de facto exemptions. The
24 Company – upon reviewing Staff's testimony - submitted discovery to the Anthem
25 Council seeking more information on winter lawn requirements and current status. We

1 will provide the response in the Company's May 14, 2010 rebuttal to intervener's rate
2 designs.

3 **Q. WHAT IS THE RELEVANCE OF ANTHEM'S WINTER LAWNS TO A WINTER**
4 **USAGE BASED WASTEWATER TARIFF?**

5 A. If Anthem no longer has the same winter lawn requirement going forward that will
6 reduce winter watering and if the Commission adopts a residential winter usage
7 wastewater tariff based on 2008 usage, the Company will dramatically under collect its
8 revenue requirement using such a tariff. Exhibit TMB-2 Anthem Seasonal Consumption
9 displays Anthem's winter and summer water usage. Anthem's average winter water
10 usage is not even 2,000 gallons per month less than its summer usage because of this
11 winter lawn requirement. If the requirement for winter lawns changes or ends, winter
12 water usage could easily decline by 20%. This Exhibit shows that Anthem's winter water
13 usage is declining, just as it is on an annual basis. This Exhibit also shows that Anthem
14 does not enjoy an influx of winter visitors as the winter and summer residential customer
15 count is about the same or even slightly higher in the summer. In 2009, Anthem had
16 more customers in the summer (8,323) than in the winter (8,299).

17 **Q. IF – IN SPITE OF THE FLUX IN WINTER LAWN REQUIREMENT – THE**
18 **COMMISSION WISHES TO IMPLEMENT A WINTER USAGE WASTEWATER**
19 **RESIDENTIAL TARIFF IN ANTHEM, CAN IT BE IMPROVED?**

20 A. Yes. It would be critical to maintain a reasonable monthly minimum charge to reduce the
21 revenue dependence on winter water use in order to ensure a degree of revenue stability
22 and to not create such a strong incentive for Anthem to become brown in the winter for
23 no good reason. The Company may recommend such a charge after it reviews Staff's
24 updated rate design. As I mentioned above, Staff recommended a monthly basic service

1 charge of \$44.40 and \$66.61 for 5/8 inch and 3/4 inch *commercial* customers,
2 respectively. This is an appropriate range for *residential* customers as well.

3 **Q. WHAT ARE SOME OF THE REASONS THE COMPANY BELIEVES THIS**
4 **ISSUE NEEDS FURTHER STUDY?**

5 A. The Company believes that winter usage tariffs may have the negative unintended
6 consequence of causing customers to use more water in Arizona's water scarce summer.
7 Under a winter usage tariff, Anthem's customers would not pay any additional
8 wastewater charges no matter how much water they consume in non-winter months. The
9 Company also questions the appropriateness of a policy to select Anthem water district
10 for this tariff change when, for example, Sun City water district's rates are much lower
11 and it still uses ground water and does not reuse wastewater. Paradise Valley also uses
12 only ground water. We are also concerned about a rate design policy that leads Anthem
13 customers down a path of temporarily avoiding paying an authorized revenue
14 requirement through rate design changes. Unfortunately, the Company's cost of service
15 is largely fixed cost in Anthem and it seems wasteful to have Anthem's residents focus
16 on winter water use and give up their winter lawns in order to temporarily save on their
17 water bills only to later find out that the Company has filed for yet another rate increase
18 in order to actually collect its Commission authorized revenue requirement. Anthem is
19 one of the few Arizona communities with a long-term secure and renewable surface
20 water supply that it re-uses. The Company believes Anthem should not be misled on a
21 course of avoiding the associated fixed costs of service. The Company believes rate
22 consolidation is the best way to address this situation.

23

24

1 **SUN CITY WATER**

2 **Q. DID STAFF'S TESTIMONY EXPLAIN WHY THEY REDUCED THE FIRST**
3 **TIER RESIDENTIAL RATE (2.6%), YET INCREASED THE THIRD TIER 45%?**

4 A. No, however, I suspect it was to increase the incentive for water conservation. The
5 existing Sun City water first tier rate for 5/8 and 3/4 inch meter customers is presently
6 \$0.719 per kgals and Staff recommends reducing it to \$0.700 per kgals. Overall, Staff
7 supports a Sun City Water district rate increase of 21.65%. The Company believes that
8 reducing the first tier rate is **not** appropriate. It should increase to at least \$0.80 per kgal.

9 **Q. WHERE DID STAFF COMPENSATE FOR THIS REDUCTION IN THE FIRST**
10 **TIER?**

11 A. Staff recommends the third block rate increase by 45% and they lowered substantially the
12 tier break points for meters larger than 1.5 inch.

13 **Q. ARE THESE LARGER RESIDENTIAL METER CUSTOMERS LOCATED**
14 **PRIMARILY IN CONDOMINIUM HOMEOWNER ASSOCIATIONS?**

15 A. Yes. For example, we have a 2 inch meter customer with 11 condo units that during the
16 test year used between 46,000 and 132,000 gallons per month. Staff is recommending
17 the break point between their first and second tiers be lowered from 164,000 to 67,000
18 gallons per month. The Company is ok with that, but under Staff's proposal this
19 customer's usage will now frequently land in the second block at Staff's much higher
20 proposed rate, resulting in a 35% increase in the high month's bill. I think these condos
21 will conserve further without shifting this much revenue from the first to third tiers.

22

23

1 **PRIVATE FIRE RATES FOR ANTHEM & SUN CITY WATER**

2 **Q. WHY DID STAFF DRAMATICALLY REDUCE THE PRIVATE FIRE**
3 **MONTHLY MINIMUM CHARGES FOR BOTH STAND-ALONE AND RATE**
4 **CONSOLIDATION SCENARIOS?**

5 A. I do not know as they did not explain their reason(s) in their March 29, 2010 testimony
6 why, for example, Staff recommends lowering Anthem's three-inch private fire rate from
7 the existing rate of \$49.67 per month to \$10.00 or why in Sun City Staff recommends
8 lowering the six-inch private fire rate from the existing rate of \$36.21 per month to
9 \$10.00. Pretty much in both Staff's stand-alone proposal and rate consolidation scenarios
10 Staff recommends a private fire rate of \$10.00 per month for meter sizes up to six inches
11 and then only increases them slightly for larger sizes.

12 **Q. HOW MUCH REVENUE DOES THIS SHIFT FROM PRIVATE FIRE TO**
13 **OTHER CLASSES?**

14 A. The Company, in its variation on Staff's scenario one attached to Ms. Heppenstall's
15 testimony uses our rebuttal revenue requirement to support a total private fire revenue
16 requirement of \$638,000. Staff, on the other hand, supports a private fire revenue
17 requirement of only \$133,610.

18 **Q. DOES THE SOURCE OF THE DIFFERENCE APPEAR TO BE A DIFFERENCE**
19 **IN METER SIZE MULTIPLES?**

20 A. Yes. Staff did not apply any multiples to some meter sizes and small multiples to the
21 largest meter sizes relative to the existing rates and Company's rebuttal proposal. Since
22 Staff has not explained their reason for changing, the Company recommends the
23 Commission not adopt Staff's private fire rates. In the Company's rate consolidation
24 scenario, the mathematical square of the size of the private fire line is used to

1 differentiate rates. For example, two inches squared is four and three inches squared is
2 nine. Thus, dividing nine by four gives a meter multiple of 2.25 for the three-inch meter
3 as compared to the two-inch meter for private fire.

4 **IV OTHER STAND-ALONE ISSUES**

5 **INFRASTRUCTURE IMPROVEMENT SURCHARGE**

6 **Q. STAFF'S MR. MICHLIK OPPOSES THE COMPANY'S PROPOSED**
7 **INFRASTRUCTURE IMPROVEMENT SURCHARGE ("IIS") AS AN**
8 **EXTRAORDINARY RESPONSE TO ORDINARY CAPITAL IMPROVEMENTS.**
9 **IS ANY CAPITAL PROJECT ORDINARY THESE DAYS?**

10 **A.** No. First, the parties will need some clarity as to whether the IIS is a topic for the
11 revenue requirement phase of this case or the rate design phase. RUCO discussed it in
12 the former and the Company responded to RUCO in the March 22, 2010 Rebuttal
13 Testimony of Mr. Paul G. Townsley; whereas Staff discussed it in their March 29, 2010
14 Rate Design Testimony (Michlik, Page 9, lines 1-15). The response already provided by
15 Mr. Townsley addresses Staff's position. I would only add that capital is scarce today
16 and no capital improvement should be labeled as "ordinary." There are presently too
17 many demands on the Company's scarce capital which must be very carefully prioritized.
18 The IIS, if approved, would provide a slight competitive edge to the Sun City Water
19 district for the identified categories of capital improvements and replacements because
20 the IIS reduces regulatory lag.

21 **SUN CITY LOW INCOME PROGRAM**

22 **Q. DID STAFF'S MICHLIK OVERLOOK INCREASING THE SUN CITY WATER**
23 **DISTRICT'S LAST RATE BLOCK FOR THAT DISTRICT'S LOW INCOME**
24 **PROGRAM?**

1 A. Yes. Since Staff does not discuss this program, one can only assume they wish to
2 continue it from observing Michlik Schedule JMM-1. There, Staff recommends the 50%
3 discount for residential 5/8 inch low income customers continue. However, they did not
4 address the program's funding. As per Staff's discount and assuming 1,000 customers
5 participate, the updated annual subsidy is \$54,000. As the Company has disclosed,
6 enrollment is presently less than the 1,000 customer maximum and the fund is over
7 collected. So long as the Commission acknowledges in the order in this case that it
8 wishes to continue the Sun City low income program, its balancing account
9 feature(which allows the Company to late refund any over charge or recover any under
10 charge) and authorizes a surcharge which can be true-up annually, the Company is
11 satisfied.

12 **V RATE CONSOLIDATION**

13 **Q. STAFF RECOMMENDS CONTINUATION OF DISTRICT STAND-ALONE**
14 **TARIFFS. WHAT IS THE COMPANY'S CURRENT POSITION?**

15 A. Although we would have preferred for the Commission to more strongly support rate
16 consolidation by this point in the case, the Company's current position must be identical
17 to Staff as regards continuing district stand-alone rates versus adopting single tariff
18 consolidated tariffs. I comment herein; as does the testimony of the Company's
19 consultant Ms. Connie Heppenstall, on the Staff's March 29, 2010 rate consolidation
20 scenarios. Both of us support a variation on the Staff's rate consolidation scenario one in
21 the event the Commission is inclined to implement a version of consolidated rates in this
22 case (which also includes the districts from the prior rate case). This current position is
23 consistent with the Company's prior position of following the Commission's lead on this
24 topic.

1 **WASTEWATER METER MULTIPLE**

2 **Q. DID STAFF RELY ON TOO LARGE OF A METER MULTIPLE IN ITS**
3 **CONSOLIDATED WASTEWATER RATE DESIGNS?**

4 A. Yes. In Staff's Scenarios 1 and 2 for wastewater, Staff used a meter multiple sixteen
5 times greater than the 5/8 inch rate for any customer with a greater than two-inch water
6 meter. This is odd because Staff's Mr. Michlik did not use such a large meter multiple in
7 his recommended stand-alone wastewater rates. Such a large meter multiple is contrary
8 to existing rates.

9 **Q. WHAT DID STAFF'S MR. MICHLIK DO DIFFERENTLY IN THE**
10 **WASTEWATER RATE CONSOLIDATION SCENARIOS?**

11 A. First, Mr. Michlik derived his recommended rate for a 5/8 and 3/4 inch water meter
12 customer that is also a sewer customer. Then, he applied the water meter equivalent
13 factor to each meter size. Therefore, he recommended a one-inch water meter customer
14 have a basic service charge (flat sewer rate) that is 2.5 times the 5/8 inch charge.
15 Likewise, the one and a half inch meter is five times, the two inch meter customer is 8
16 times greater and the greater than 2 inch meter charge is 16 times greater.

17 **Q. WHY IS THIS GENERALLY NOT THE PREFERRED METHOD FOR**
18 **DETERMINING THE SEWER BASIC SERVICE CHARGE FOR DIFFERENT**
19 **METER SIZE CUSTOMERS?**

20 A. A sewer line into an establishment is different in sizing than the water line/meter size.
21 One would expect that the differential would not be as great as in a water meter. For
22 example, a residence with a 5/8" meter may have a 4" sewer lateral coming from the
23 home, yet a commercial customer with a 2" meter might only have a 6" sewer line.

1 **Q. WHAT ARE THE METER MULTIPLES IN THE COMPANYS VERSION 3 OF**
2 **THE RATE CONSOLIDATION MODEL?**

3 A. For a one-inch Commercial water meter customer it is 2.67 times the 5/8" sewer Basic
4 Service Charge; a one and one-half inch water meter customer is 4.67 times and for a two
5 inch meter it is 7.3 times. Although both Staff and Company support a consolidated 5/8
6 inch sewer Basic Service Charge Flat Rate in the \$32 to \$34 dollar range, we are
7 concerned about the higher rates Staff used for the larger water meter sizes. We
8 alternatively recommend using the Company's multiples.

9 **SUPPORT FOR A VARIATION OF STAFF'S RATE CONSOLIDATION**
10 **SCENARIO 1**

11 **Q. HOW CAN THE COMMISSION MAKE ACCEPTABLE TO CUSTOMERS OF**
12 **SUN CITY AND MOHAVE THE HIGHER RATES ASSOCIATED WITH**
13 **STAFF'S STATE-WIDE RATE CONSOLIDATION SCENARIO?**

14 A. The Commission can order a transition period of, say, three years, four years or five
15 years, during which each district will complete a transition from stand-alone to
16 consolidated rates. *In each year of the transition, the transition rates are designed to*
17 *produce the total revenue requirement.* This would reduce the rate impact on, for
18 example, Sun City customers, by raising rates more slowly and would consequentially
19 slow down the rate reduction for the high rate districts such as Tubac. The Company's
20 consultant, Ms. Heppenstall, presents a three-step transition alternative in her testimony
21 which is a variation on Staff's scenario one but uses the Company's rebuttal revenue
22 requirement for the districts in this case. Scenarios with more steps can be created.

23 **Q. ARE THEY ANY OTHER MAJOR DIFFERENCES IN THE COMPANY'S**
24 **VARIANT AS COMPARED TO STAFF'S SCENARIO 1?**

1 A. Yes. At the rate consolidation training session, it was proposed and discussed that it is
2 desirable to consolidate the monthly minimum charges for the residential 5/8 inch, 3/4
3 inch and 1 inch meter customers. The 1 inch meter customers generally have fire
4 sprinklers installed in their homes and pay a much higher monthly minimum charge as a
5 result. It is not unusual for the Company to receive a request from a customer to
6 downsize a 1 inch meter to a smaller meter in order to obtain a lower monthly minimum
7 charge. The Company is troubled by this occurrence as the 1 inch meter size is the
8 appropriate meter size for a home with fire sprinklers, but we are generally not able to
9 deny such a request from a determined customer.

10 **Q. DID STAFF RECOMMEND TOO FEW RESIDENTIAL RATE TIERS?**

11 A. Yes, the Company's variation on Staff's scenario one recommends five tiers. Staff
12 recommends three. Paradise Valley presently has five and Tubac four. Staff's
13 recommendation for a first tier of 0 to 3,000 gallons is good, but their third tier begins at
14 10,000 gallons for all remaining consumption. However, several of the Company's
15 districts have significant residential water consumption at much higher levels.

16 **OPPOSE STAFF'S RATE CONSOLIDATION SCENARIOS 2 and 3**

17 **Q. WHY DOES THE COMPANY BELIEVE NO OTHER SUB-GROUPINGS OF**
18 **THE COMPANY'S DISTRICTS ARE SENSIBLE?**

19 A. Staff scenarios Two and Three are essentially arbitrary combinations of various
20 Company's districts that are difficult to justify to customers. These groupings will not
21 reduce the number or frequency of rate cases, but will make odd combinations of
22 communities. Grouping Sun City and Sun City West together is very difficult because,
23 for example, residents of Sun City will object to paying for Sun City West's arsenic
24 facilities and later Sun City West residents will object to paying for upgrades to Sun

1 City's much older infrastructure. I cannot understand the basis for grouping the small
2 groundwater based Paradise Valley district with the much larger surface water based
3 communities of Anthem and Agua Fria. I cannot find any good reasons either to combine
4 the much larger Mohave district with Tubac. Staff did not state their reasons for their
5 groupings. If the Commission determines that rate consolidation is appropriate, the only
6 sensible and valuable long-term approach is state-wide rate consolidation with a
7 transition percentage that mitigates the short-term increases.

8 **CONSISTENT NON-POTABLE WATER RATES**

9 **Q. EVEN IF THE COMMISSION DOES NOT ADOPT CONSOLIDATED RATES,**
10 **DO YOU RECOMMEND A CONSISTENT STATE-WIDE FRAMEWORK FOR**
11 **NON-POTABLE RATES BE AUTHORIZED?**

12 A. Yes, for several reasons. The Company provides non-potable water in three forms:
13 treated effluent, raw CAP water and raw untreated groundwater. The Company believes
14 the Commission should establish associated tariffs with incentives to use these alternative
15 sources of water instead of using potable water and that the pricing of these three non-
16 potable sources be sensible in comparison to a potable water benchmark. As a starting
17 point, the Company recommends effluent receive a 50% discount, raw CAP water a 30%
18 discount and raw groundwater a 20% discount as compared to a benchmark commercial
19 second tier rate (whether a consolidated or district stand-alone benchmark). The
20 Company's Mr. Townsley can address this concept and the reasons for the discounts, in
21 part, because they are being discussed in the Arizona blue ribbon water panel underway.

22 **Q. WHAT'S THE PRESENT SITUATION IN THE COMPANY'S TERRITORY?**

23 A. In Agua Fria district, Verrado takes primarily effluent, but also some raw CAP water.
24 Corte Bella uses raw groundwater. In Sun City, Coyote Lakes uses raw groundwater and

1 many other Sun City irrigation accounts use potable water. Coyote Lakes is not that far
2 from the Company's Northwest Valley regional wastewater treatment facility and could
3 alternatively utilize treated effluent if given a strong incentive. In Anthem, only effluent
4 is used. Verrado presently pay the highest rates for treated effluent irrigation at \$2.728
5 per kgals and Staff has proposed \$2.56 per kgals for Anthem, yet they rely on effluent for
6 which the Company recommends a 50% discount relative to potable pricing. In Sun City,
7 irrigation accounts are using potable water and paying only \$0.85 per kgals. So, these
8 tariffs are upside down from where they need to be from a policy perspective.

9 **Q. DOES THE COMPANY HAVE A SPECIFIC PROPOSAL FOR DISCOUNTED**
10 **NON-POTABLE RATES AT THIS TIME?**

11 A. No, however the Company has heard from Verrado, Anthem and Corte Bella that current
12 and proposed rates are exacerbating their financial difficulties at this time and the
13 Company has encouraged Verrado and Corte Bell to intervene in the case to argue their
14 position. Anthem Golf Course has already intervened. At this point, the Company is
15 sensitizing the parties to this issue and asking the Staff and RUCO to consider a more
16 sensible pricing of non-potable water such that Anthem and Agua Fria's non-potable
17 rates would decrease and Sun City water's irrigation potable tariff would increase. This
18 could be accomplished whether stand-alone or rate consolidation is authorized. For
19 purposes of the Company's variant on Staff's consolidation scenario one, the Company
20 has used a non-potable rate of \$2.50 per kgal for the time being as a placeholder.

21 **Q. DOES THIS CONCLUDE YOUR REBUTTAL OF STAFF'S RATE DESIGN AND**
22 **RATE CONSOLIDATION TESTIMONY IN THIS CASE?**

23 A. Yes, for this submittal, but with the caveat that several issues remain open at this time
24 which will be further addressed by the Company on May 14, 2010.

**REBUTTAL OF STAFF EXHIBIT TMB-1 ANTHEM TIERED WATER RATES
STUDY**

**Arizona-American Water Company's
Anthem Water District:
The Effect of Tiered Water Rates on
Water Consumption**

Prepared by Miles H. Kiger, Rate Analyst, Arizona-American Water Company

March 8, 2010

I. Introduction

In Arizona Corporation Commission (“ACC”) Decision No. 70372, which authorized a permanent rate increase for Arizona-American’s Anthem Water District, Arizona-American was ordered to conduct a study of the effect that tiered water rates approved in Decision No. 70372 would have on water consumption in the Anthem Water District (“Anthem”). The ACC was interested in knowing whether and by how much rate increases and rate tier blocks was causing water conservation.

The following study was conducted in compliance with this Decision.

This study chose to measure the effect that tiered water rates have on residential water consumption in Anthem by comparing pre-rate increase water consumption to post-rate increase water consumption for a large sample of Anthem water customers. Under this comparative framework, a variety of statistics were developed to answer a range of questions related to water consumption behavior in Anthem.

ACC Decision No. 70372 authorized a permanent rate increase that became effective on June 4, 2008 which changed both the rates and the tier blocks. Previously, Anthem had a three-tiered rate structure with rate blocks between 0-4,000 gallons, 4,001-18,000 gallons, and >18,000 gallons. The current rate structure defines three rate blocks between, 0-4,000 gallons, 4,001-10,000 gallons, and >10,000 gallons. Thus the current rate design, effective June 4, 2008, had the effect of shortening the second tier by 8,000 gallons, and thereby beginning the third tier 8,000 gallons sooner. The commodity price paid by customers for each 1,000 gallon increment associated with the rate blocks also increased June 4, 2008.

Table 1. Current Anthem Residential Water Rate Structure Following June, 2008 Rate Increase

Meter Size	Basic Service Charge	Tier One		Tier Two		Tier Three	
		Commodity Rate (per 1,000 gallons)	First Tier Breakover (gallons)	Commodity Rate (per 1,000 gallons)	Second Tier Breakover (gallons)	Commodity Rate (per 1,000 gallons)	Third Tier Breakover
Residential 5/8-inch and 3/4-inch meter customers	\$17.53	\$1.54	4,000	\$2.41	10,000	\$3.08	Infinite

Table 1 summarizes the current residential water rate structure in Anthem for the meter sizes with the vast majority of residential customers. Table 2 summarizes the previous rate structure. The unit price for first tier volumes (whose volume allocation was unchanged by the rate increase) changed from \$1.13 to \$1.54 per 1,000 gallons, a 36% increase. The unit price for second tier volumes changed from \$1.70 to \$2.41 per 1,000 gallons, a 42% increase. The second tier was also shortened by 8,000 gallons. The unit price for third tier volumes changed from \$2.04 to \$3.08 per 1,000 gallons, a 51% increase. The third tier also begins 8,000 gallons sooner. For

Table 2. Anthem Residential Water Rate Structure Prior to June, 2008 Rate Increase

Meter Size	Basic Service Charge	Tier One		Tier Two		Tier Three	
		Commodity Rate (per 1,000 gallons)	First Tier Breakover (gallons)	Commodity Rate (per 1,000 gallons)	Second Tier Breakover (gallons)	Commodity Rate (per 1,000 gallons)	Third Tier Breakover
Residential 5/8-inch and 3/4-inch meter customers	\$15.00	\$1.13	4,000	\$1.70	18,000	\$2.04	Infinite

the average residential customer (one who consumes 9,000 gallons a month), the rate increase had the effect of increasing monthly water bills by 27%.

After reviewing the rate structure and unit price changes that arose from the rate increase it will be useful to discover how consumption changed in the Anthem district and whether certain pre-rate increase consumption groups behaved differently than others following the rate increase. Of particular interest will be the group of customers who formerly were consuming in the second tier, in the volume range of 10,001-18,000 gallons, but following the rate increase are now consuming in the third tier. The unit price of this 8,000 gallon range increased by 81%. Thus there would be an intuitive expectation that the group of customers who were consuming in this range prior to the rate increase would alter their consumption habits more than customers in the other tiers because of their greater price incentive to conserve.

By deploying an analytical framework that compares pre-rate increase water consumption to post-rate increase water consumption for a large sample of customers, this study aims to provide a useful evaluation of the effect that tiered water rates have on residential water consumption in Anthem. As part of its overall evaluation, this study makes use of tables and graphs to provide visual representations of consumption trends, in addition to a descriptive written narrative.

This study is organized as follows: a description of the sample data that was used to generate statistics; the statistical results presented in tables and graphs; a discussion and interpretation of the statistical results; and concluding remarks regarding the study's findings.

II. Sample Data

A 26-month period spanning from June, 2007 through July, 2009 was used as the sampling period for this study. A sampling period ending July, 2009 was chosen because this would provide 12 months of data following the rate increase effective June 4, 2008. Also, by choosing July, 2009 as the ending month of the sample period an equal number of pre and post rate increase months were examined.

The sample period was broken into two 13-month periods, the first running from June 2007 thru June 2008 (Period 1, pre-rate increase), and the second from July 2008 thru July 2009 (Period 2, post-rate increase). This created identifiable periods of pre-rate increase (Period 1) and post-rate increase (Period 2) that eased the comparative analysis and discussion of the study's results.

Of the roughly 8,325 residential Arizona-American customers who have 5/8" or 3/4" meter sizes in Anthem, a sample of 5,671 residential customers was used for this study. This represents nearly 70% of residential customers. The criteria to be included in the sample were that each residential account had to be continuously active for at least 23 of the 26 months in the sample period with the same account number. By requiring at least 23 of 26 months of active consumption, the study maintained nearly a 90% continuity in consumption activity while allowing the sample to be as large as possible. Furthermore, continuously active accounts were required in order to maintain confidence that the same customer was present prior to, and after, the rate increase and thus their objectives concerning water conservation would be incorporated in that account's consumption figures. For those account numbers that had one, two, or three missing values, the missing value(s) were filled in using the median value of the remaining actual consumption figures. This process affected less than one percent of accounts and thus posed no significant risk of distorting consumption figures.

Although relying upon the same account numbers throughout did not control for all impacts of water usage at the customer level (e.g., having a child, building a swimming pool, losing a job, etc), it did help to minimize even larger impacts (e.g., a home sale with different home occupants).

III. Results/Discussion

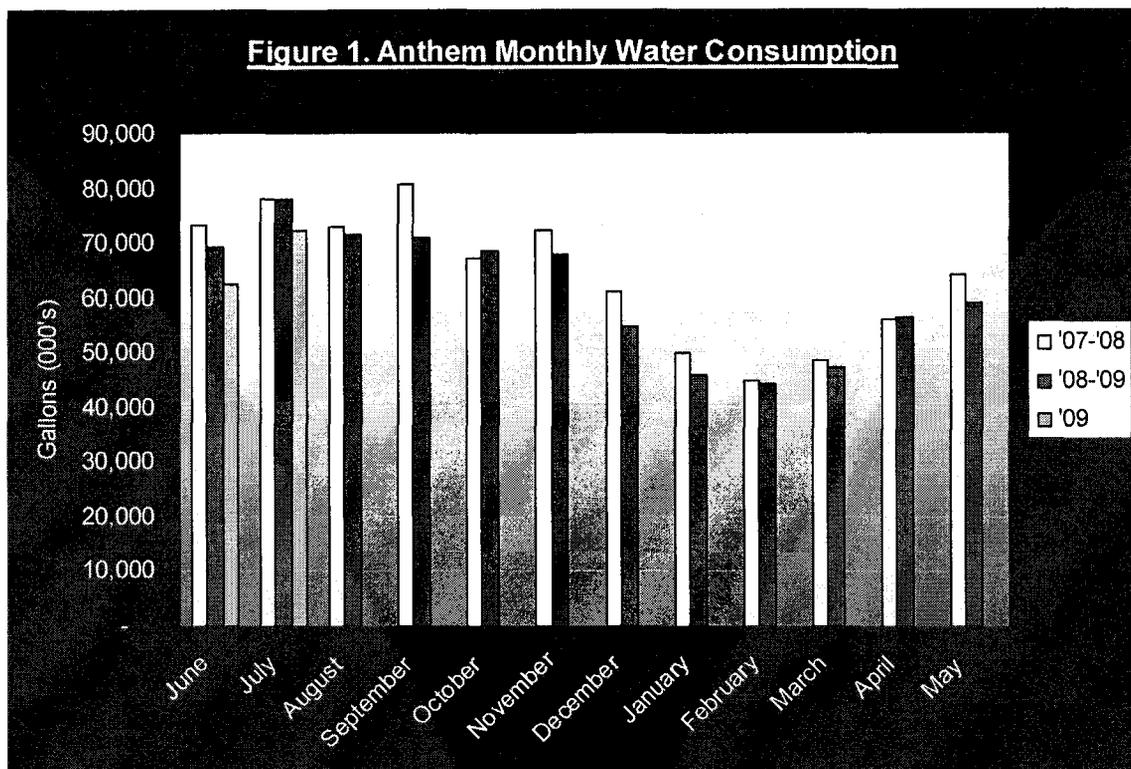
To determine what effect tiered rates would have on water consumption in Anthem, a range of questions were developed that required statistical calculations. The resultant statistics help provide important descriptive information regarding water consumption in Anthem. First, how did aggregate water consumption among the sample group change over time.

Table 3 shows the aggregate water consumption of the sample group for both Period 1 (pre-rate increase) and Period 2 (post-rate increase). As can be seen in Table 3, there was a decrease of 41 million gallons in consumption from Period 1 to Period 2, for the sample.

Table 3. Anthem Aggregate Water Consumption by Sample Period

Sample Period	Water Consumption (in 000's of Gallons)	Percentage of Total
<u>1</u> (June 2007 - June 2008)	842,171	51.3%
<u>2</u> (July 2008 - July 2009)	800,909	48.7%
<u>Total</u>	<u>1,643,079</u>	<u>100%</u>

This amounts to a five percent decrease in total consumption across periods. Furthermore, Figure 1 shows water consumption by month for the entire sample period. Except for the month of October, each month's consumption decreased or remained unchanged following the June 2008 rate increase relative to the same month in the prior year.



From contemplating these initial consumption statistics by period a number of important questions arise that deserve examination. Principally, if Anthem customers decreased consumption (conserved) following the June 2008 rate increase, by how much did they conserve on average?

Not all Anthem customers conserved on a net basis after the rate increase. From the period July 2008 to July 2009 (Period 2), 3,283 customers of the sample's 5,671 customers decreased their consumption on a net basis relative to Period 1 (net basis means summing all the monthly decreases and increases in consumption for a given customer relative to the same month in the prior year). This represents almost 58% of the entire sample group. Conversely almost 42% of the sample group increased, or left their consumption unchanged, on a net basis. The average decrease in consumption for the 3,283 customers who did conserve on a net basis was 31,270 gallons, which translates into an average of 2,410 gallon per month decrease for Period 2. Conversely, for the 42% of customers who increased their consumption on a net basis their average increase for Period 2 was 24,100 gallons, which translates into an average of 1,850 gallon per month increase. Thus on a net basis, Anthem customers each conserved 560 gallons per month on average in Period 2.

Taking this train of thought further, how did customers change their consumption habits relative to the rate structure in Anthem? Prior to the June 2008 rate increase, Anthem had a three-tiered, increasing block rate structure, with the first tier ranging from 0-4,000 gallons, the second from 4,001-18,000 gallons, and the third greater than 18,000 gallons. After the June 2008 rate increase became effective, Anthem maintained a three-tiered, increasing block rate structure, but the tier breakpoints changed. The first tier remained 0-4,000 gallons, but the second shifted to between 4,001-10,000 gallons, and the third greater than 10,000 gallons. Thus the best way to analyze the behavior of customers is to break the rate structure into four tiers, so that both the pre- and post-rate increase rate structures are preserved and the analysis not duplicated. This is accomplished by differentiating the rate tiers into a group whose consumption is greater than 18,000 gallons per month, one that is between 10,001-18,000 gallons, one that is between 4,001-10,000 gallons, and one that is less than or equal to 4,000 gallons.

In order to analyze the behavior of customers relative to the rate structure it is necessary to track them individually to understand their collective behavior. For example, an individual customer may consume in each of the four tiers over the course of the sample period. Some may consistently consume in the same tier. Therefore it is difficult to label a group of customers as "third tier" or "second tier", etc., because of changes in consumption over time. Due to this fluctuation, it is necessary to take a month-by-month approach to the distribution of customers among the consumption tiers. Table 4 (on the next page) summarizes how customers who consumed in a given consumption tier in one month changed (or did not change) their consumption in the same month the following year. By representing consumption changes on a monthly basis, customers of a given consumption tier can be tracked to know how their consumption changed following the rate increase.

By examining Table 4 one can see the general patterns of how a consumption tier group reacted to the rate change. For example, of the 1,149 customers who consumed in the fourth tier in June of 2007, 56.2% of them also consumed in the fourth tier one year later. Interestingly, 34.4% of them consumed in the third tier a year later, 8.2% in the second tier, and 1.2% in the first tier. For each consumption tier in each month, Table 4 shows the distribution of that exact group of customers among the four tiers in the same month one year later.

Since the rate increase occurred June 2008, the question was posed as to consuming behavior for comparable months pre and post rate increase. For example, in the fourth tier, 65.8% of customers in the fourth tier in July 2007 still consumed in that tier in July 2008, but by July 2009, only 59.5% of those consuming in the fourth tier were still at that level. Similarly compare the third tier (10,001-18,000 gallons) where, 57.2% of customers who consumed in the third tier in June 2007 also did so in June 2008, whereas only 52.9% of customers who consumed in the third tier in June 2008 also did so in June 2009. Another example comes from the first tier where, 60.3% of customers who consumed in the first tier in June 2007 also did so in June 2008,

whereas 73.6% of customers who consumed in the first tier in June 2008 also did so in June 2009. This trend may demonstrate customers' increased awareness of higher water rates and their reluctance to increase consumption in the case of the first tier example, or their desire to decrease consumption in the case of the third tier example.

Table 4. Distribution of Customers Among Tiers In Same Month One Year Later

		June07	July07	Aug07	Sept07	Oct07	Nov07	Dec07	Jan08	Feb08	Mar08	Apr08	May08	June08	July08	Monthly Average
	Monthly Customer Total	5,671														
4th Tier	Total Cust in Tier	1,149	1,300	1,133	1,382	894	1,041	618	325	237	301	513	767	957	1,269	849
	4th Tier	56.2%	65.8%	61.9%	54.6%	60.2%	57.1%	40.5%	26.5%	30.4%	32.6%	42.9%	51.0%	54.0%	59.5%	49.1%
	3rd Tier	34.4%	26.4%	28.3%	34.6%	27.9%	31.2%	39.2%	41.5%	37.6%	39.2%	37.2%	36.2%	33.5%	31.0%	34.3%
	2nd Tier	8.2%	6.8%	7.9%	10.1%	10.2%	10.4%	17.0%	26.2%	25.3%	24.9%	18.1%	11.6%	10.8%	8.0%	14.2%
	1st Tier	1.2%	1.0%	1.9%	0.8%	1.8%	1.3%	3.4%	5.8%	6.8%	3.3%	1.8%	1.2%	1.7%	1.5%	2.4%
3rd Tier	Total Cust in Tier	1,770	1,695	1,639	1,745	1,675	1,724	1,627	1,203	954	1,188	1,496	1,706	1,817	1,745	1,570
	4th Tier	12.8%	18.1%	17.5%	13.4%	18.7%	16.4%	10.7%	8.5%	9.5%	10.2%	15.0%	10.9%	10.7%	15.9%	13.1%
	3rd Tier	57.2%	56.8%	54.2%	53.5%	55.9%	52.0%	48.0%	39.6%	45.0%	46.0%	53.0%	51.2%	52.9%	55.7%	51.3%
	2nd Tier	28.1%	23.5%	26.1%	30.3%	23.8%	28.9%	38.1%	46.9%	38.6%	39.4%	29.0%	34.1%	33.5%	26.0%	32.4%
	1st Tier	1.9%	1.7%	2.2%	2.8%	1.7%	2.7%	3.2%	5.1%	6.9%	4.4%	3.0%	3.8%	2.9%	2.4%	3.2%
2nd Tier	Total Cust in Tier	1,979	1,857	2,023	1,843	2,210	2,179	2,638	2,939	3,020	2,976	2,696	2,355	2,120	1,916	2,339
	4th Tier	3.6%	4.7%	4.2%	3.2%	4.3%	2.9%	1.9%	2.2%	2.1%	1.6%	2.8%	2.8%	2.1%	2.7%	2.9%
	3rd Tier	18.7%	21.5%	21.0%	15.3%	22.7%	18.2%	13.6%	12.0%	14.1%	14.3%	17.2%	15.2%	13.9%	16.9%	16.5%
	2nd Tier	64.4%	62.5%	61.6%	66.8%	63.5%	65.8%	67.3%	66.7%	68.7%	68.7%	69.3%	67.9%	65.9%	65.9%	66.1%
	1st Tier	13.3%	11.3%	13.2%	14.7%	9.5%	13.1%	17.3%	19.1%	15.2%	15.4%	10.8%	14.0%	18.2%	14.6%	14.5%
1st Tier	Total Cust in Tier	773	819	876	701	892	727	788	1,204	1,460	1,206	966	843	777	741	912
	4th Tier	1.7%	2.6%	1.5%	1.7%	1.5%	0.8%	0.6%	0.7%	0.5%	0.7%	0.7%	0.6%	0.5%	0.5%	1.0%
	3rd Tier	5.0%	4.9%	5.6%	4.3%	4.4%	4.0%	2.4%	2.1%	2.5%	3.5%	2.6%	2.4%	1.9%	2.0%	3.4%
	2nd Tier	33.0%	32.8%	31.4%	26.0%	32.6%	27.1%	27.2%	27.9%	30.2%	30.3%	34.5%	28.6%	23.9%	28.2%	29.2%
	1st Tier	60.3%	59.7%	61.5%	68.0%	61.5%	68.1%	69.8%	69.4%	66.8%	65.5%	62.2%	68.4%	73.6%	69.2%	66.3%

Table 4 shows the distribution of customers among the consumption tiers in the same month one year later. For instance, in June of 2007 there were a total of 5,671 customers in the sample, 1,149 consumed in the fourth tier, 1,770 in the third tier, 1,979 in the second tier, and 773 in the first tier. For any one of the tiers (marked by the boxes farthest to the left with vertical lettering), the percentages beneath that tier's customer count for the month indicated by the top line are the percentage of customers who remained in that particular consumption tier one year later. So, in June of 2007, of the 773 customers who consumed in the first tier, 60.3% of them also consumed in the first tier in June of 2008, 33% moved to the second tier in June 2008, 5% to the third, and 1.7% to the fourth. The percentages indicate how that exact group of customers in that tier consumed in the same month one year later.

To complement Table 4, Table 5 shows the household change in consumption relative to the prior period for the tier consumption groups by month. For the group of customers in the third tier example in the preceding paragraph, per capita consumption decreased by 450 gallons in June of 2008 relative to June 2007. On average, the third tier consumption group decreased their consumption by 680 gallons per customer per month in the period following the rate increase. Remember, on average, Anthem customers decreased consumption by 560 gallons per customer per month following the rate increase. Similarly, on average, the fourth tier consumption group decreased their consumption by a large 7,580 gallons per month in the period following the rate increase. This large per capita decrease suggests that consumption at the upper end of the range was more discretionary in nature. Conversely, the second and first tier consumption groups both increased their per capita monthly consumption in the period following the rate increase, which probably is due to the fact that, for customers who are already at or near the low end of their consumption thresholds, any changes in consumption are likely non-discretionary consumption increases. Nonetheless, the data from June and July 2009 for the second and first tier consumption groups show a declining trend compared with the same months in the prior year.

Table 5. Per Capita Change In Consumption Relative to Prior Period (000's Gallons)

	June08	July08	Aug08	Sept08	Oct08	Nov08	Dec08	Jan09	Feb09	Mar09	Apr09	May09	June09	July09	Average
4th Tier	-6.64	-4.59	-5.61	-7.70	-5.52	-6.76	-8.92	-12.48	-12.10	-9.99	-6.96	-6.41	-6.54	-5.83	-7.58
3rd Tier	-0.45	0.31	0.18	-1.09	0.48	-0.25	-1.28	-1.84	-1.57	-1.20	-0.17	-1.22	-1.11	-0.24	-0.68
2nd Tier	1.06	1.65	1.40	0.65	1.65	0.87	0.12	0.29	0.65	0.43	0.95	0.52	0.34	0.66	0.80
1st Tier	1.84	2.28	1.94	1.39	2.07	1.25	1.05	1.21	1.20	1.33	1.39	1.07	0.86	1.10	1.43

To this point, this study has attempted to define certain customer sub-groups based on their consumption levels and to describe their consumption patterns relative to the changing rate structure and price signals due to the June 2008 rate increase. This analysis has been focused on determining where most of the conservation has been occurring relative to the rate structure and discovering whether certain sub-groups who have a greater price incentive to decrease their consumption have actually done so more than an average customer. Within this analytical framework, another interesting question to ask then is, if an Anthem customer consumed near a tier breakpoint in Period 1, did they decrease consumption more than the average level of decrease per customer per month in Period 2?

To answer this, it is necessary to know what the average level of consumption decrease was per customer per month between Period 1 and Period 2. In Period 1 the average consumption per customer per month was 11,420 gallons. For Period 2 average consumption was 10,860 gallons. Thus the average decrease per customer per month was 560 gallons in Period 2.

An Anthem customer who consumed near a tier breakpoint is defined as anyone who consumed within 3,000 gallons above a tier breakpoint. 3,000 gallons seemed a substantial enough change yet attainable. This means anyone consuming between 18,001-21,000 gallons, anyone consuming between 10,001-13,000 gallons, or anyone consuming between 4,001-7,000 gallons. In total there were 4,686 customers who, if defined as consuming near a tier breakpoint, decreased their consumption for at least one month in Period 2. This is nearly 83% of the sample group of 5,671 customers. In Period 1, this group of customers' average consumption per month was 10,940 gallons. In Period 2 their average consumption was 10,100 gallons. Thus the average decrease per customer per month was 830 gallons in Period 2, which confirms that those individuals who were consuming near a tier breakpoint prior to the June 2008 rate increase did decrease their consumption more (48% more) than the average level of decrease per customer per month. This result suggests that customers who faced a smaller hurdle in order to drop into a lower rate tier were more inclined to do so and thus conserved more than the average Anthem customer.

Table 6. Average Decrease Per Customer Per Month Near a Tier Breakpoint vs. Sample Average Decrease Per Customer Per Month Between Periods

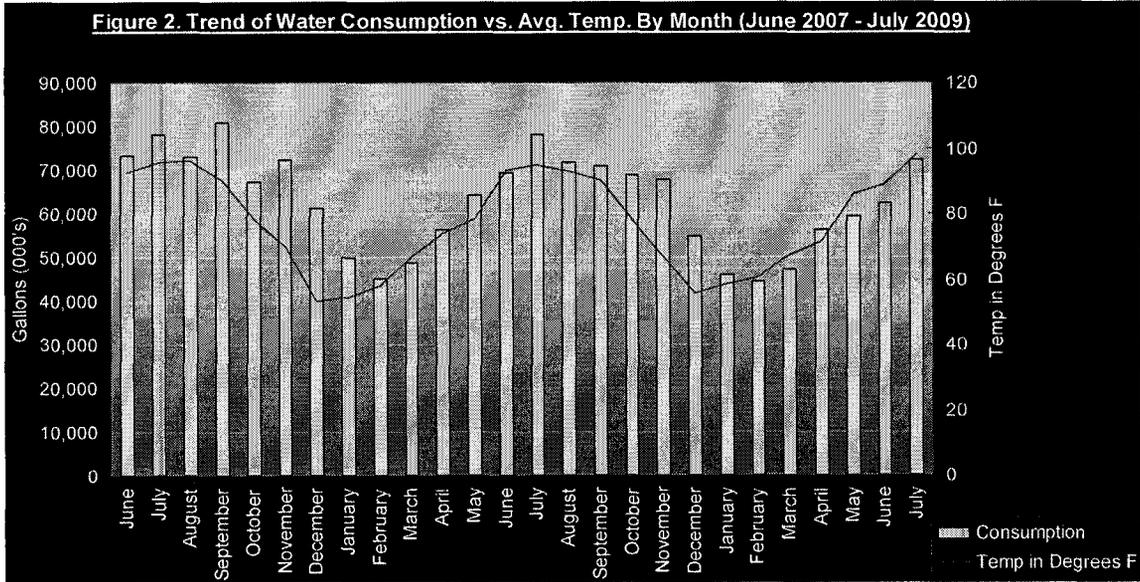
	<u>Near a Tier Breakpoint</u>	<u>Total Sample</u>
Per Capita Decrease Per Month, in Gallons	830	560

How Did the Weather Impact Period 1 versus Period 2

The Period 1 monthly average temperature was 77.1 degrees Fahrenheit. The Period 2 monthly average temperature was 77.7 degrees Fahrenheit. Period 1 experienced 9.14 inches of rainfall and for Period 2 it was 9.01 inches of rainfall.

Weather has an impact on the amount of water customers use over the course of the year. Whether it is due to fluctuations in temperature or rainfall or both, the weather can affect

customer water usage. In Phoenix in the summer months, when average daily temperatures are highest, customer daily water requirements are also higher, usually due to outdoor water use. Figure 2 shows the relationship of total monthly water consumption of the Anthem sample group compared with the average daily temperature. As can be seen, these two statistics are highly visually correlated and track very tightly together. Also, the spread between summer month and winter month consumption totals is striking. The average spread between summer (May-Oct.) and winter (Nov.-April) for the sample period was roughly 15 million gallons, with the max spread at nearly 35 million gallons.



Rainfall also has an effect on water consumption, as it substitutes some of the outdoor watering that is required of customers. Figure 3 shows the trend of monthly rainfall totals (taken from the Anthem Water District facility) compared to monthly water consumption in Anthem. Unlike the visual correlation demonstrated by Figure 2, between water consumption and average daily temperature, little correlation appears between water consumption and monthly rainfall totals for the sample period.

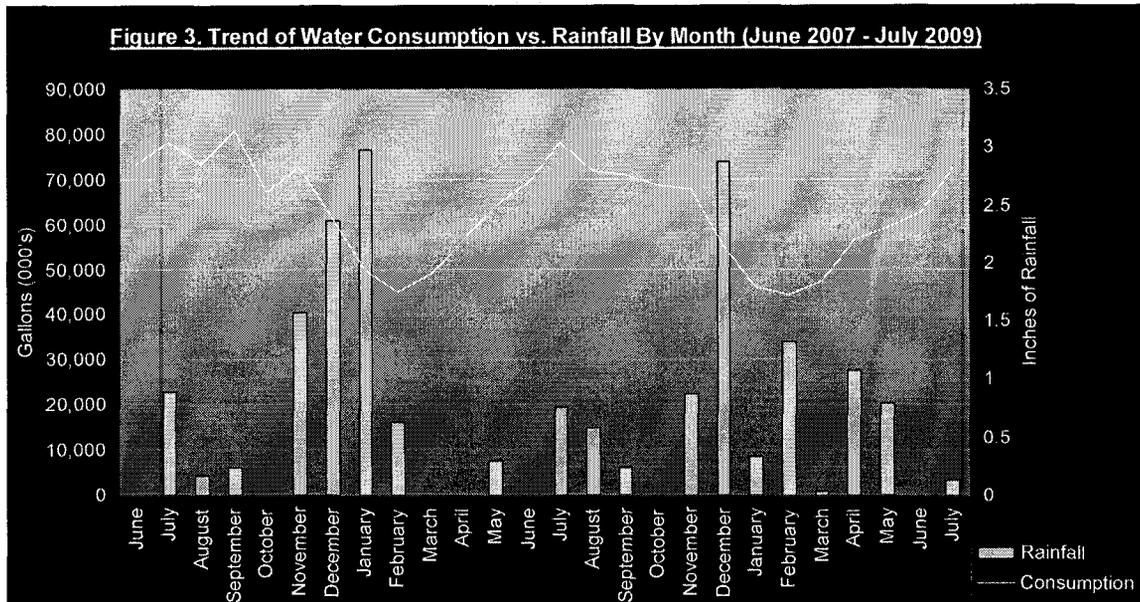


Table 7 reports the statistical linear correlation of the sample water consumption to the sample rainfall and temperature. The correlation values indicate a weak negative correlation between sample water consumption and rainfall, and a strong positive correlation between sample water consumption and temperature. In general terms, this indicates that greater water consumption tends to correlate with less rainfall (albeit weakly), and greater water consumption tends to correlate with higher temperatures (strongly). It should be noted, however, that by examining Figure 3 one can see that most of the rainfall recorded during the sample period falls during winter months when outdoor watering demands are less than during the summer. One would expect that if more of the rainfall occurred during summer months, overall water demands would be less than they would have otherwise because outdoor watering would be supplemented by the rainfall to a greater extent. This would likely have an effect on the correlation statistic between water consumption and rainfall under this hypothetical scenario, and may provide a context with which to view the actual correlation statistic of the sample data.

Table 7. Correlation of Sample Water Consumption to Sample Rainfall and Temperature

	<i>Rainfall</i>	<i>Temperature</i>
<i>Water Consumption</i>	-0.251981534	0.793451689

Table 8 displays the monthly average temperatures (National Weather Service data for Phoenix) that are used in Figure 2 for the 26 month sample period. If the data for the first 13 month period (Period 1) is averaged, the Period 1 monthly average is 77.1 degrees Fahrenheit. If the same is done for the second 13 month period (Period 2), the Period 2 monthly average is 77.7 degrees Fahrenheit. All other things equal, one would expect that water consumption would have increased in Period 2 relative to Period 1 due to the higher average temperatures. However, as Table 3 shows, water consumption decreased five percent, or 41 million gallons, between periods. This fact suggests that, even despite the strong positive correlation between average monthly temperatures and water consumption for the sample data, Anthem customers may have chosen to decrease (conserve), rather than increase, their consumption in the face of higher average temperatures due to observed price signals (higher water rates).

Table 8. Monthly Average Temperatures (in Degrees Fahrenheit) for 26 Month Sample Period

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2007						92.7	95.8	96.2	90.3	78.2	70	53.2	76.4
2008	54.7	58.3	66.7	74	78.5	93.2	94.9	92.9	89.9	77.9	67.1	55.8	75.4
2009	58.7	60.7	67.5	71.4	86.2	88.7	98.3						75.9

Table 9 displays the monthly rainfall totals recorded at the Anthem Water Campus for the 26 month sample period. The rainfall graphic depicted in Figure 3 utilizes these same data. If the data for the first 13 month period (Period 1) is totaled, the total is 9.14 inches of rainfall. If the same is done for the second 13 month period (Period 2), the total is 9.01 inches of rainfall. This indicates there was a slight decrease in rainfall between periods, and despite the weak negative correlation between water consumption and rainfall for the sample data, water consumption decreased as well. Thus this fact also suggests that Anthem customers may have chosen to decrease water consumption based on observed price signals (higher water rates) despite less rainfall.

Table 9. Monthly Rainfall Totals (in Inches) for 26 Month Sample Period

<u>Year</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Annual</u>
2007						0.00	0.89	0.16	0.24	0.00	1.57	2.37	5.23
2008	2.98	0.63	0.00	0.00	0.30	0.00	0.76	0.58	0.24	0.00	0.87	2.87	9.23
2009	0.33	1.32	0.04	1.08	0.79	0.00	0.13						3.69

Income Effects

Income is another variable that could have an influence on water consumption habits. Unfortunately there was no consistent income data for the Anthem community that spanned the sample period used for this study. Thus without knowing how incomes have changed over time in Anthem, no comparisons could be made in the context of the water rate increase.

IV. Conclusion

This study has examined the short-term (1-year) impacts of Anthem's rate increase and new rate design effective June 4, 2008 on residential water consumption among the 5/8" and 3/4" meter customer group.

When viewed collectively, the statistical results of this study are very suggestive that Anthem water customers have indeed decreased their water consumption due to an increase in observed water prices experienced following the June 4, 2008 rate increase and new tiered rate design.

There are four main reasons why the resultant statistics to the questions posed earlier in this study are suggestive that the 2008 rate increase did have an effect on the aggregate water consumption decrease in Anthem. First, it is believed that there is a lag effect on the time it takes customers to respond to price changes, and this expectation is confirmed by the fact that year-over-year (for the two months of data for which this is applicable, June and July), aggregate water consumption continued to decline. This indicates that as time went on more and more customers became aware of the rate impact and consequently altered their consumption habits accordingly. Second, those customers who generally had the greatest price incentive to reduce their consumption (those in the third tier, consuming between 10,001-18,000 gallons per month) indeed decreased their consumption more than the average level of decrease per customer per month (a decrease of 680 gallons per customer per month, as opposed to the sample average of 560 gallons per customer per month). Third, customers who consumed near a tier breakpoint (and thus had a less formidable attempt at reducing their consumption to drop into a lower priced rate tier) also decreased their consumption more than the average level of decrease per customer per month (a decrease of 830 gallons per customer per month, as opposed to the sample average of 560 gallons). Fourth, despite a slight increase in average temperature from Period 1 to Period 2 (which would theoretically correlate with increased water consumption), and a slight decrease in rainfall from Period 1 to Period 2 (which would also theoretically correlate with increased water consumption), aggregate water consumption for the sample decreased by roughly 5% between periods.

Thus within the context of the rate tiers themselves, Anthem customers responded to the rate increase in a more or less expected fashion: on average, customers with a greater incentive to conserve did so. Furthermore, based on the temperature and rainfall patterns of the sample period, customers should have been induced to increase their consumption, theoretically, but did not, perhaps because of the new price signals they faced following the rate increase.

From the Company's perspective of desiring revenue stability, the 5% aggregate water consumption decrease for the sample has a significant downward effect on revenues derived from water sales, which is not considered in the rate setting process. Of the roughly \$5,000,000 in annual residential revenues generated by water sales in Anthem, the volumetric component of those residential sales constitute 45%, or approximately \$2,250,000, of the total sales. If the 5% aggregate water consumption decline from the sample used in this study is applied to the \$2,250,000 figure, \$112,500 is the amount that can be considered the estimated revenue lost due to water conservation in Anthem. This constitutes 2.25% of annual residential revenues generated from water sales lost within one year of the rate increase with additional erosion likely on a longer term. Future rate increases that bring water rates in line with the cost of providing water service in Anthem will to continue to have an impact on the amount of water usage in the Anthem community, which in turn has an effect on the cost of providing that service. The rate setting process is a cyclical, mutually conditioning process, where consumption affects the unit cost determination of the cost of service. It is very important to acknowledge this fact, as these cyclical dynamics will continually be at work. Moreover, if the rate structure in Anthem - or any community - were to continue to be fashioned with enhanced water conservation in mind, the degree to which that would have an effect on revenue stability would likely also be enhanced (i.e., decoupling). The implication of water conservation on revenue stability should be a matter of importance that should be addressed when matters of water conservation and rate design are addressed.

**REBUTTAL OF STAFF EXHIBIT TMB-2 ANTHEM SEASONAL
CONSUMPTION**

**Anthem Water District
Anthem Average Seasonal Residential Consumption**

	Year		
	<u>2007</u>	<u>2008</u>	<u>2009</u>
<u>Avg. No. of Winter Res Customers</u>	8,347	8,285	8,299
<u>Winter Consumption (Jan, Feb, Mar) in kgals</u>	215,371	208,547 ¹	196,349
<u>Winter Per Capita Monthly Average (Avg. of Jan, Feb, Mar)</u>	8.6	8.2	7.9
<u>Avg No. of Summer Res Customers</u>	8,390	8,236	8,323
<u>Summer Consumption (June, Jul, Aug, Sept) in kgals</u>	336,219	317,933	315,759
<u>Summer Per Capita Monthly Average (Avg of June, Jul, Aug, Sept)</u>	10.0	9.7	9.5

*Source: JD Edwards statistical reports

¹ 2008 Winter consumption data taken from Orcorm billing data, consistent with Staff DR 17.2, is 204,512

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 ARIZONA -AMERICAN WATER COMPANY, AN ARIZONA CORPORATION, FOR A 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 ANTHEM WATER DISTRICT, AND SUN CITY WATER DISTRICT

DOCKET NO. W-01303A-09-0343

IN THE MATTER OF THE APPLICATION OF ARIZONA-AMERICAN WATER COMPANY, AN ARIZONA CORPORATION, FOR A 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 ANTHEM / AGUA FRIA WASTEWATER DISTRICT, SUN CITY WASTEWATER DISTRICT, AND SUN CITY WEST WASTEWATER DISTRICT

DOCKET NO. SW-01303A-09-0343

**REBUTTAL OF STAFF RATE DESIGN TESTIMONY
OF
CONSTANCE E. HEPPENSTALL
ON BEHALF OF
ARIZONA-AMERICAN WATER COMPANY
APRIL 7, 2010**

**REBUTTAL OF STAFF RATE DESIGN TESTIMONY
OF
CONSTANCE E. HEPPENSTALL
ON BEHALF OF
ARIZONA-AMERICAN WATER COMPANY
APRIL 7, 2010**

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Rebuttal of Staff Exhibit CEH-1 Stepped Water Rates
Rebuttal of Staff Exhibit CEH-2 Stepped Wastewater Rates

1 **EXECUTIVE SUMMARY**

2
3 Ms. Heppenstall testifies as follows:

4
5 Ms. Heppenstall explains the rate consolidation model prepared for each of the operating districts
6 for both water and wastewater for Arizona-American Water Company (Company). The purpose
7 of the rate consolidation model is to aid the user in developing consolidated rates which produce
8 the overall revenue requirements of the Company and to analyze the impact of rate consolidation
9 for each operating district and customer class.

10
11 Ms. Heppenstall sponsors the Rate Consolidation Model, Version 1, 2 and Version 3.

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. PLEASE STATE YOUR NAME AND ADDRESS**

3 A. My name is Constance E. Heppenstall. My business address is 207 Senate Avenue,
4 Camp Hill, Pennsylvania.

5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am employed by Gannett Fleming, Inc. as a Rate Analyst.

7 **Q. PLEASE DESCRIBE YOUR POSITION WITH GANNETT FLEMING, INC. AND**
8 **BRIEFLY STATE YOUR GENERAL DUTIES AND RESPONSIBILITIES.**

9 A. As a Rate Analyst, my duties and responsibilities include the preparation of accounting
10 and financial data for revenue requirements, the allocation of cost of service to customer
11 classifications, and the design of customer rates in support of public utility rate filings.

12 **Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?**

13 A. I have a Bachelor of Arts Degree in Economics from the University of Virginia,
14 Charlottesville, Virginia and a Masters of Science in Industrial Administration from the
15 Carnegie-Mellon University's Tepper School of Business, Pittsburgh, Pennsylvania.

16 **Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL AFFILIATIONS?**

17 A. I am a member of the American Water Works Association and a member of the
18 Pennsylvania Municipal Authorities Association.

19 **Q. BRIEFLY DESCRIBE YOUR WORK EXPERIENCE.**

20 A. I joined the Valuation and Rates Division of Gannett Fleming, Inc. in August 2006, as a
21 Rate Analyst. Prior to my employment at Gannett Fleming, Inc., I was a Vice President
22 of PriMuni, LLP where I developed financial analyses to test proprietary software in
23 order to ensure its pricing accuracy in accordance with securities industry's conventions.

1 From 1987 to 2001, I was employed by Commonwealth Securities and Investments, Inc.
2 as a public finance professional where I created and implemented financial models for
3 public finance clients in order to create debt structures to meet clients' needs. From 1986
4 to 1987, I was a public finance associate with Mellon Capital Markets.

5
6 **II. PURPOSE OF TESTIMONY**

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?**

8 A. Please refer to the Executive Summary, which precedes my testimony.

9 **III. WATER AND WASTEWATER RATE CONSOLIDATION MODEL**

10 **Q. THE COMPANY DOCKETED A RATE CONSOLIDATION MODEL IN THIS**
11 **CASE. DID YOU PREPARE THAT MODEL?**

12 A. Yes. Using data from this case and the prior rate case supplied by the Company, I
13 prepared the design of the model and the formulas therein.

14 **Q. WHAT IS THE PURPOSE OF THE WATER AND WASTEWATER RATE**
15 **CONSOLIDATION MODELS?**

16 A. The purpose of the model is to allow the user to view the effects of consolidating rates
17 across the operating districts of the Company to facilitate rate consolidation scenarios.
18 The model enables the user to set homogeneous customer charges, consumption charges
19 and rate blocks across operating districts, confirm the overall revenue produced by these
20 rates matches the total authorized amount, and view the related customer impact of the
21 consolidated rates through the use of bill comparison schedules.

22 **Q. WHICH WATER OPERATING DISTRICTS ARE INCLUDED IN THE WATER**
23 **RATE CONSOLIDATION MODEL?**

1 A. All of the Company's water operating districts are included in the study, specifically, Sun
2 City, Sun City West, Agua Fria, Anthem, Tubac, Mohave, Havasu and Paradise Valley
3 water operating districts

4 **Q. ARE ALL CLASSES OF CUSTOMERS INCLUDED IN THE WATER RATE**
5 **CONSOLIDATION?**

6 A. No, certain classes were excluded due to specific contracts or uniqueness to a specific
7 system or there were no comparable classes in other districts to combine with. These
8 classes include: C2M3 Arizona Water contract, C5M1 Agua Fria – OWU PI Surprise,
9 A5M1 Sun City Public Interruptible – Peoria, E7M2 Anthem Wholesale (Phoenix) OWU
10 and the apartment classes in Mohave and Havasu. The rates for these customers would
11 remain stand-alone.

12 **Q. WHICH WASTEWATER OPERATING DISTRICTS ARE INCLUDED IN THE**
13 **WASTEWATER RATE CONSOLIDATION MODEL?**

14 A. All of the Company's wastewater operating districts are included in the study,
15 specifically, Sun City, Sun City West, Anthem / Agua Fria, and Mohave wastewater
16 operating districts.

17 **Q. ARE ALL CLASSES OF CUSTOMERS INCLUDED IN THE WASTEWATER**
18 **RATE CONSOLIDATION?**

19 A. No, certain classes were excluded due to specific contracts or uniqueness to a specific
20 system or a lack of any comparable customer classes in other districts. These classes in
21 the wastewater rate consolidation model include: A2MSP Sun City Sewer Paradise Park
22 I/U, E5M2 Anthem Wholesale (Phoenix) OWU and P7A1 Mohave Sewer Effluent Sales.
23 Again, the rates for these customers would remain stand-alone.

1 **Q. WHY ARE THERE DIFFERENT VERSIONS OF THE MODEL?**

2 A. There are different versions of the model as enhancements were made. The
3 enhancements were a result of feedback from interested parties.

4 **Q. PLEASE EXPLAIN THE DIFFERENT VERSIONS OF THE MODEL.**

5 A. The model consists of three separate versions. Version 1 was the prototype that was
6 presented to the Commission Staff and explained in a conference call on January 13,
7 2010. As a result of feedback during that call, namely the expressed desire for more
8 flexibility in consumption blocks, Version 2 was created. This version was presented on
9 February 10, 2010 at a training session for interveners and other interested parties at the
10 Company's offices. Since then, Version 3 has been developed in response to feedback
11 concerning the ability to transition to consolidated rates over three steps as well as
12 feedback concerning consolidating the residential one-inch basic service charge with the
13 5/8 and 3/4 inch basic service charge. Staff used Version 2 of the model in its March 29,
14 2010 testimony updated with Staff's proposed revenue requirement submitted on March
15 8, 2010.

16 **Q. WHAT IS THE STRUCTURE OF VERSION 1 AND 2 OF THE MODEL?**

17 A. Versions 1 and 2 consist of five linked Excel files for the water rate consolidation model
18 and three linked files for the wastewater rate consolidation model. The files consist of
19 the following:

- 20 1. The Total file in which the user inputs the consolidated rates and blocking structures
21 that flow through to the other files listed below.
22 2. The residential file which contains the calculation of revenue from residential
23 customers and the related billing impacts by operating district.

1 3. The commercial file which contains the calculation of revenue from the commercial
2 and OPA customers and the related billing impacts by operating district.

3 4. The non potable file, for the water rate consolidation model only, which contains the
4 calculation of revenue from customers that purchase non-potable water and the related
5 billing impacts by operating district.

6 5. The private fire file, for the water rate consolidation model only, which calculates the
7 revenue from the private fire customers and the related billing impacts by operating
8 district.

9 **Q. CAN THE USER OF THE MODEL EXCLUDE CERTAIN OPERATING**
10 **DISTRICTS FROM THE RATE CONSOLIDATION?**

11 A. Yes. The model allows the user to decide which operating districts to include in the
12 model. The Total file has inputs that control which districts are included. Staff's
13 scenarios two and three used this feature of the model.

14 **Q. WHAT REVENUE REQUIREMENT DOES THE MODEL USE AS A TARGET**
15 **FOR THE CONSOLIDATED RATES IN THE WATER RATE**
16 **CONSOLIDATION MODEL?**

17 A. The original revenue requirement target in Versions 1, 2 and 3 was the Commission
18 approved revenue requirement from Decision No. 71410 for the water districts that were
19 included in the Docket W-01303A-08-0227 which included Agua Fria, Sun City West,
20 Tubac, Mohave, Havasu and Paradise Valley and the Company's original requested
21 revenue requirement for Sun City and Anthem included in this rate case, Docket W-
22 01303A-09-0343. In subsequent iterations of Versions 2 and 3 of the model, the revenue
23 requirements for Sun City and Anthem have been modified either to reflect the Staff's
24 recommended revenue requirement or the Company's rebuttal revenue requirement.

1 Version 2 was updated by Staff internally to include their recommended revised non-
2 consolidated rates and revenue requirement. Mr. Broderick and I, in this rebuttal of Staff
3 Rate Design testimony, are using Version 3 updated to the Company's rebuttal revenue
4 requirement. In addition, if a user of the model decides to exclude an operating district
5 from the model, the total revenue requirement is reduced by the revenue requirement
6 attributed to that district.

7 **Q. WHAT REVENUE REQUIREMENT DOES THE MODEL USE AS A TARGET**
8 **FOR THE WASTEWATER CONSOLIDATED RATES?**

9 A. The original revenue requirement target in Versions 1, 2 and 3 was the Commission
10 approved revenue requirement from Decision No. 71410, Docket SW-01303A-08-0227
11 which was the Mohave Wastewater District and the Company's requested revenue
12 requirement in Docket SW-01303A-09-0343 for Sun City, Sun City West, and
13 Anthem/Agua Fria Wastewater Districts. Further modifications of Version 3 of the
14 model adjusted the revenue requirement for these districts for the Staff's requested
15 revenue requirement and the Company's rebuttal revenue requirement. Version 2 was
16 updated by Staff internally to include their proposed non-consolidated rates and proposed
17 revenue requirement. Mr. Broderick and I, in this rebuttal of Staff Rate Design
18 testimony, are using Version 3 updated to the Company's rebuttal revenue requirement. If
19 a user of the model decides to exclude an operating district from the model, the total
20 revenue requirement is reduced by the revenue requirement attributed to that area.

21 **Q. WHAT BILLING DETERMINANTS ARE USED TO DETERMINE THE USAGE**
22 **AT DIFFERENT RATE BLOCKS FOR THE WATER CONSOLIDATION**
23 **MODEL?**

1 A. For the operating districts of Agua Fria, Sun City West, Tubac, Mohave, Havasu and
2 Paradise Valley, the billing determinants from Docket W-01303A-08-0227 were used.
3 These were the billing determinants used by Staff to determine the allowable rates for
4 these districts. For Anthem and Sun City, the billing determinants filed in the H
5 Schedules in this case were used. Staff has reviewed these billing determinants and has
6 found them acceptable so far for this purpose.

7 **Q. WHAT BILLING DETERMINANTS ARE USED TO DETERMINE THE USAGE**
8 **AT DIFFERENT RATE BLOCKS FOR THE WASTEWATER**
9 **CONSOLIDATION MODEL?**

10 A. For the Mohave District, the billing determinants from Docket SW-01303A-08-0227
11 were used. These were the billing determinants used by Staff to determine the allowable
12 rates for this district. For Sun City, Sun City West, and Anthem/Agua Fria, the billing
13 determinants filed in the H Schedules in this case were used. Again, Staff is using these
14 billing determinants.

15 **Q. EXPLAIN HOW VERSION 3 CREATES THE STEP RATES.**

16 A. The step rates are based on a percentage of the proposed consolidation rates which will
17 create rates either higher or lower than the proposed consolidation rates. The structure of
18 the Version 3 model is similar to Version 2; however, the user has the option of
19 transitioning from a modified level of the consolidated rate to the full consolidated rates
20 in three steps. Each step has a series of linked Excel files similar to Version 2. In step
21 one, the final consolidated rates including customer charge, consumption blocks and
22 consumption rates are determined. Then, the user can decide the percentage of those
23 consolidated rates that each operating district will charge in step one. For example, the
24 operating districts with current rates higher than the proposed consolidated rates could be

1 billed at 150% of the final consolidated rates and, conversely, those operating districts
2 currently with lower rates than the proposed consolidated rates could be billed at 80% of
3 the proposed consolidated rates. These percentages move toward 100% through step 2
4 according to the user's judgment. By step 3, all the operating districts are billed at 100%
5 of the consolidated rates. In each step, the user sets the percentage of consolidated rates
6 *so that the overall revenue requirement remains at the required level.* However, the
7 model does not assume a stepped increase for Private Fire and Non-Potable. These
8 classes are brought to the consolidated rate in step 1. For the other classes, the stepped
9 increase is utilized to avoid rate shock for the operating districts with lower rates as
10 compared to other operating districts.

11
12 **Q. WHY MIGHT THE COMMISSION WANT TO APPROVE A THREE-STEP**
13 **TRANSITION?**

14 A. The Commission may wish to approve a transition so as to mitigate the one-time change
15 in rates associated with consolidated rates. For example, in an entire state-wide
16 consolidation of Arizona-American water's districts, the rates of Sun City Water, for
17 example, increase significantly. Therefore, a three-step transition breaks those increases
18 into three distinct steps.

19 **Q. HOW MUCH TIME SHOULD SEPARATE EACH STEP?**

20 A. That is for the Commission to decide, but I would recommend one year between each
21 step.

1 **Q. IN DEVISING A VERSION 3 OF THE MODEL USING COMPANY REBUTTAL**
2 **REVENUE REQUIREMENTS, DID YOU CREATE STEPPED RATES?**

3 A. Yes. The stepped rates are in attached Rebuttal of Staff Exhibit CEH-1 Stepped Water
4 Rates and Rebuttal of Staff Exhibit CEH-2 Stepped Wastewater Rates.

5
6 **Q. HOW DO THE STEPPED RATES AFFECT RATE PAYERS?**

7 A. The increase or decrease to certain rate payers would be stepped in over three steps in
8 order to mitigate rate shock. The model assumes that each district would immediately
9 bill customers based on uniform consumption blocks, however the customer charges and
10 consumption charges would be transitioned in steps. For example, rate payers in Sun City
11 Water District currently pay a customer charge of \$7.99 per month for a 5/8" meter. In
12 the first step, the customer charge would rise to \$13.24. Then in the second step the
13 customer charge would be \$15.10 and finally in the last step the customer charge would
14 be \$16.97, which will then be the same customer charge for all the operating districts.
15 The consumption charge would be stepped-in in a similar manner.

16
17 **Q. DOES THIS CONCLUDE YOUR REBUTTAL OF STAFF RATE DESIGN**
18 **TESTIMONY?**

19 A. Yes.

ARIZONA AMERICAN WATER COMPANY
SUMMARY OF CONSOLIDATION RATES - WATER

STEP 1, STEP 2 AND STEP 3

Percentage of Consolidated Rates	Anthem			Tubac			Mohave			
	Step 1 243%	Step 2 165%	Step 3 100%	Step 1 150%	Step 2 120%	Step 3 100%	Step 1 60%	Step 2 81%	Step 3 100%	
Residential										
5/8" - 3/4"										
Customer Charge	41.24	28.00	16.97	25.46	20.36	16.97	10.18	13.75	16.97	
First	4,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	6,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	25,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	25,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	60,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790
1"										
Customer Charge	41.24	28.00	16.97	25.46	20.36	16.97	10.18	13.75	16.97	
First	4,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	6,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	25,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	25,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	60,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790
1 1/2"										
Customer Charge	206.19	140.00	84.85	127.28	101.82	84.85	50.91	68.73	84.85	
First	25,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	75,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	300,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790
2"										
Customer Charge	329.90	224.00	135.76	203.64	162.91	135.76	81.46	109.97	135.76	
First	50,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	50,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	300,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790
3"										
Customer Charge	618.56	420.01	254.55	381.83	305.46	254.55	152.73	206.19	254.55	
First	75,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	25,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	300,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790
4"										
Customer Charge	1,030.93	700.01	424.25	636.38	509.10	424.25	254.55	343.64	424.25	
First	100,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	100,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	400,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790
6"										
Customer Charge	2,061.86	1,400.03	848.50	1,272.75	1,018.20	848.50	509.10	687.29	848.50	
First	100,000	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.720	0.972	1.200
Next	100,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.374	1.855	2.290
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.674	2.260	2.790
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.974	2.665	3.290
Over	400,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.274	3.070	3.790

ARIZONA AMERICAN WATER COMPANY
SUMMARY OF CONSOLIDATION RATES - WATER

STEP 1, STEP 2 AND STEP 3

Percentage of Consolidated Rates	Anthem			Tubac			Mohave			
	Step 1 243%	Step 2 165%	Step 3 100%	Step 1 150%	Step 2 120%	Step 3 100%	Step 1 60%	Step 2 81%	Step 3 100%	
Commercial, OPA, Turf Rates and Blocks										
5/8" - 3/4"										
Customer Charge		41.24	28.00	16.97	25.46	20.36	16.97	10.18	13.75	16.97
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	10,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	25,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	25,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	60,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900
1"										
Customer Charge		103.09	70.00	42.43	63.64	50.91	42.43	25.46	34.36	42.43
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	10,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	25,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	25,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	60,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900
1 1/2"										
Customer Charge		206.19	140.00	84.85	127.28	101.82	84.85	50.91	68.73	84.85
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	100,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	300,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900
2"										
Customer Charge		329.90	224.00	135.76	203.64	162.91	135.76	81.46	109.97	135.76
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	100,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	300,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900
3"										
Customer Charge		618.56	420.01	254.55	381.83	305.46	254.55	152.73	206.19	254.55
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	100,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	300,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900
4"										
Customer Charge		1,030.93	700.01	424.25	636.38	509.10	424.25	254.55	343.64	424.25
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	200,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	400,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900
6"										
Customer Charge		2,061.86	1,400.03	848.50	1,272.75	1,018.20	848.50	509.10	687.29	848.50
First	-	2.9160	1.9800	1.2000	1.8000	1.4400	1.2000	0.7200	0.9720	1.2000
Next or First	200,000	5.5647	3.7785	2.2900	3.4350	2.7480	2.2900	1.3740	1.8549	2.2900
Next	100,000	6.7797	4.6035	2.7900	4.1850	3.3480	2.7900	1.6740	2.2599	2.7900
Next	100,000	7.9947	5.4285	3.2900	4.9350	3.9480	3.2900	1.9740	2.6649	3.2900
Over	400,000	9.2097	6.2535	3.7900	5.6850	4.5480	3.7900	2.2740	3.0699	3.7900

ARIZONA AMERICAN WATER COMPANY
SUMMARY OF CONSOLIDATION RATES - WATER

STEP 1, STEP 2 AND STEP 3

Percentage of Consolidated Rates	Havasu			Paradise Valley		
	Step 1 120%	Step 2 111%	Step 3 100%	Step 1 95%	Step 2 100%	Step 3 100%
Residential						
5/8" - 3/4"						
Customer Charge	20.36	18.84	16.97	16.12	16.97	16.97
First	4,000	1.440	1.332	1.200	1.140	1.200
Next	6,000	2.748	2.542	2.290	2.176	2.290
Next	25,000	3.348	3.097	2.790	2.651	2.790
Next	25,000	3.948	3.652	3.290	3.126	3.290
Over	60,000	4.548	4.207	3.790	3.601	3.790
1"						
Customer Charge	20.36	18.84	16.97	16.12	16.97	16.97
First	4,000	1.440	1.332	1.200	1.140	1.200
Next	6,000	2.748	2.542	2.290	2.176	2.290
Next	25,000	3.348	3.097	2.790	2.651	2.790
Next	25,000	3.948	3.652	3.290	3.126	3.290
Over	60,000	4.548	4.207	3.790	3.601	3.790
1 1/2"						
Customer Charge	101.82	94.18	84.85	80.61	84.85	84.85
First	25,000	1.440	1.332	1.200	1.140	1.200
Next	75,000	2.748	2.542	2.290	2.176	2.290
Next	100,000	3.348	3.097	2.790	2.651	2.790
Next	100,000	3.948	3.652	3.290	3.126	3.290
Over	300,000	4.548	4.207	3.790	3.601	3.790
2"						
Customer Charge	162.91	150.69	135.76	128.97	135.76	135.76
First	50,000	1.440	1.332	1.200	1.140	1.200
Next	50,000	2.748	2.542	2.290	2.176	2.290
Next	100,000	3.348	3.097	2.790	2.651	2.790
Next	100,000	3.948	3.652	3.290	3.126	3.290
Over	300,000	4.548	4.207	3.790	3.601	3.790
3"						
Customer Charge	305.46	282.55	254.55	241.82	254.55	254.55
First	75,000	1.440	1.332	1.200	1.140	1.200
Next	25,000	2.748	2.542	2.290	2.176	2.290
Next	100,000	3.348	3.097	2.790	2.651	2.790
Next	100,000	3.948	3.652	3.290	3.126	3.290
Over	300,000	4.548	4.207	3.790	3.601	3.790
4"						
Customer Charge	509.10	470.92	424.25	403.04	424.25	424.25
First	100,000	1.440	1.332	1.200	1.140	1.200
Next	100,000	2.748	2.542	2.290	2.176	2.290
Next	100,000	3.348	3.097	2.790	2.651	2.790
Next	100,000	3.948	3.652	3.290	3.126	3.290
Over	400,000	4.548	4.207	3.790	3.601	3.790
6"						
Customer Charge	1,018.20	941.84	848.50	806.08	848.50	848.50
First	100,000	1.440	1.332	1.200	1.140	1.200
Next	100,000	2.748	2.542	2.290	2.176	2.290
Next	100,000	3.348	3.097	2.790	2.651	2.790
Next	100,000	3.948	3.652	3.290	3.126	3.290
Over	400,000	4.548	4.207	3.790	3.601	3.790

ARIZONA AMERICAN WATER COMPANY
SUMMARY OF CONSOLIDATION RATES - WATER

STEP 1, STEP 2 AND STEP 3

Percentage of Consolidated Rates	Havasu			Paradise Valley		
	Step 1 120%	Step 2 111%	Step 3 100%	Step 1 95%	Step 2 100%	Step 3 100%
Commercial, OPA, Turf Rates and Blocks						
5/8" - 3/4"						
Customer Charge		20.36	18.84	16.97	16.12	16.97
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	10,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	25,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	25,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	60,000	4.5480	4.2069	3.7900	3.6005	3.7900
1"						
Customer Charge		50.91	47.09	42.43	40.30	42.43
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	10,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	25,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	25,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	60,000	4.5480	4.2069	3.7900	3.6005	3.7900
1 1/2"						
Customer Charge		101.82	94.18	84.85	80.61	84.85
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	100,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	100,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	100,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	300,000	4.5480	4.2069	3.7900	3.6005	3.7900
2"						
Customer Charge		162.91	150.69	135.76	128.97	135.76
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	100,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	100,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	100,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	300,000	4.5480	4.2069	3.7900	3.6005	3.7900
3"						
Customer Charge		305.46	282.55	254.55	241.82	254.55
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	100,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	100,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	100,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	300,000	4.5480	4.2069	3.7900	3.6005	3.7900
4"						
Customer Charge		509.10	470.92	424.25	403.04	424.25
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	200,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	100,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	100,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	400,000	4.5480	4.2069	3.7900	3.6005	3.7900
6"						
Customer Charge		1,018.20	941.84	848.50	806.08	848.50
First	-	1.4400	1.3320	1.2000	1.1400	1.2000
Next or First	200,000	2.7480	2.5419	2.2900	2.1755	2.2900
Next	100,000	3.3480	3.0969	2.7900	2.6505	2.7900
Next	100,000	3.9480	3.6519	3.2900	3.1255	3.2900
Over	400,000	4.5480	4.2069	3.7900	3.6005	3.7900

ARIZONA AMERICAN WATER COMPANY
SUMMARY OF CONSOLIDATION RATES - WASTEWATER

STEP 1, STEP 2 AND STEP 3

	Sun City			SCW			Agua Fria/Anthem			Mohave		
	Step 1 68%	Step 2 89%	Step 3 100%	Step 1 100%	Step 2 100%	Step 3 100%	Step 1 175%	Step 2 126%	Step 3 100%	Step 1 115%	Step 2 102%	Step 3 100%
Percentage of Consolidated Rates												
<u>Residential</u>												
Customer Charge - Fixed Rate												
5/8" - 3/4"	23.28	30.47	34.24	34.24	34.24	34.24	59.92	43.14	34.24	39.38	34.92	34.24
1"	23.28	30.47	34.24	34.24	34.24	34.24	59.92	43.14	34.24			
1 1/2"	108.80	142.40	160.00									
2"	170.00	222.50	250.00	250.00	250.00	250.00						
<u>Commercial</u>												
Customer Charge												
5/8" - 3/4"	23.28	30.47	34.24	34.24	34.24	34.24	59.92	43.14	34.24			
1"	54.40	71.20	80.00	80.00	80.00	80.00	140.00	100.80	80.00			
1 1/2"	108.80	142.40	160.00	160.00	160.00	160.00						
2"	170.00	222.50	250.00	250.00	250.00	250.00						
>2"	170.00	222.50	250.00	250.00	250.00	250.00	437.50	315.00	250.00	287.50	255.00	250.00
Fixed Rate	51.00	66.75	75.00	75.00	75.00	75.00				86.25	76.50	75.00
Consumption Charge	1.292	1.691	1.900	1.900	1.900	1.900	3.325	2.394	1.900	2.185	1.938	1.900
WC	11.87	11.87	11.87	11.87	11.87	11.87						
WM	22.20	22.20	22.20	22.20	22.20	22.20						
DW												
WR												