

Kenneth Hewitt
Direct Testimony
Docket No.: W-01303A-10-0448

ORIGINAL



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BEFORE THE ARIZONA CORPORATION COMMISSION

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In the matter of the application of Arizona -) Docket No.: W-01303-A-10-0448
American Water Company for a) Direct Testimony of Kenneth Hewitt
determination of the current fair value of its) Intervener
utility plant and property and for increases in)
its rates and charges based thereon for utility)
services by its Agua Fria water district,
Havasu water district, and Mohave water
district.

This is the Direct testimony of Kenneth Hewitt.

ORIGINAL and 13 copies of the foregoing
were filed this 24th day of June, 2011 with

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

Copies of the foregoing mailed/delivered
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Kenneth Hewitt
Direct Testimony
Docket No.: W-01303A-10-0448

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Submitted by


Kenneth Hewitt

1 Q. Please identify yourself.

2 A. My name is Kenneth Hewitt and I reside at 18729 N. Palermo Ct in the City
3 of Surprise Arizona in the subdivision of Sun City Grand and I have
4 intervened as an individual Arizona-America rate payer.

4 Q. Please give your education and employment background.

5 A. I received a BA in Mathematics from the University of St Thomas and an
6 MBA from California State University at Northridge. I was employed as a
7 Quality Control Manager in the Electronic Industry and as a computer
8 salesman. I am retired but I still take on an occasional job as an expert
9 in litigations involving computer issues.

8 Q. Do you have any experience in water issues?

9 A. Yes, about 15 years ago, my wife and I moved to Prescott and bought a
10 home in a subdivision which had a homeowner owned water company. One reason
11 we picked that subdivision was that the water was of excellent quality.
12 After a few years, I was elected to the board of the water company. While a
13 board member I was involved with several actions that brought me into
14 contact with the ACC and Arizona Department of Water Resources. First was
15 the issue of where did our CC&R landscape restrictions come from. I
16 researched the issue and discovered that for the developer to get a 100 year
17 Assured/Adequate Water Certificate, AZDWR required the landscape
18 limitations. Next was the issue of a third well. We had a relatively high
19 gpm well and a much smaller well and the board felt that we should drill a
20 new well to give us backup if our main well failed. We again had to get
21 approval from ACC, AZDWR and Arizona Department of Water Quality. Next, we
22 decided to upgrade our fire protection by adding additional fire hydrants to
23 meet the most current standards. Finally, ACC offered a training session for
24 board members of small water companies which I attended with two of my
25 fellow board members. We all felt it was an excellent session. Another
project I was involved with was researching bringing natural gas to our
development. I learned that there was a tariff that determined how much up
front money we would have to pay to connect to the nearest properly sized
gas main. The cost was based on the distance to the boundary of our
development. As we could not get all residents to pay their share up front,
we considered having the water company foot the bill. This was rejected
because all the adjacent developments would get gas without contributing to
the upfront cost. Later I realized that the gas tariff was a very important
reason that rate consolidation of gas rates makes sense. I resigned my board
position to move to Sun City Grand about seven years ago.

23 Q. Do you have any other experience that might relate to this case?

24 A. Yes. Early in my career, I worked for two pump companies. Red Jacket Pump
25 Company as Quality Control Manager and Peerless Pump Company as the in house

salesman.

1
2 Q. Have you been involved in any AZ-AM rate cases since you moved to the Valley?

3 A. Yes. In 2008 or 9, I received a notice in my water bill of a rate case
4 for several districts. While I could make a good guess I was not in the Sun
5 City District, the Sun City West District, the Anthem District, the Mohave
6 District or the Tubac District, I had no idea where the Agua Fria District
7 was or if I was in it. I called AZ-AM and they told me I was not in the
8 rate case. I called a second time and asked "If I am not in the rate case
9 why send me a notice". I was told that AZ-AM sent the notice to everyone.
10 This answer did not make sense to me so I contacted a member of the Sun City
11 Grand HOA. I was told that several other residents had asked the same
12 question but the HOA (CAM) had been assured that we were not part of the
13 rate case. In 2009 I got a second notice in my water bill of a rate case for
14 some of the same Districts, including Agua Fria. I called AZ-AM and this
15 time was told that the City of Surprise was my water provider and AZ-AM just
16 did the billing for Surprise. Again, I approached CAM and was assured that
17 we were not in the rate case. In early 2010 I saw that my water bill had
18 gone up so I went online to the City of Surprise web site and down loaded
19 the water rate table. The water rates were nowhere near the rates on my
20 bill. Next I went to AZ-AM's web site and checked the tariffs for Agua Fria
21 and finally found out I was in the Agua Fria District. I presented the
22 information to CAM and they tried to intervene but it was beyond the cutoff
23 date.

24 Q. Did AZ-AM ever acknowledge their mistake?

25 A. Yes. I complained to the local office and a PR person called to
apologize. She asked what I wanted. I replied that they could roll back the
2009 increase and remove Agua Fria from the open rate case or petition for
CAM to be allowed to intervene. They did neither. In late 2010 an ad hoc CAM
water committee and our attorney met with Ian Crooks and he indicated that
there had been some mix up at the centralized customer service desk which
was responsible for us being told we were not in the rate case.

Q. Do you believe that this was intentional on AZ-AM's part?

A. No. During most of this period there were two cases open, one a water
case and one a wastewater case. Surprise is SCG's wastewater provider and
AZ-AM does bill us for them.

Q. Is this relevant to the current case?

A. Yes it is. I have talked to HOA managers as well as residents of at least
four other developments in Agua Fria and told them their water rates were
going up by 83.96% and they have been assured they aren't.

1 Q. Have you convinced any of those you contacted?

2 A. I think I was able to convince the Board of Greer Ranch because when I
3 talked to them I had with me their 100 year Assured Water Supply Certificate
4 which indicated they were in Agua Fria, the first page of the rate case and
5 the sheet showing the proposed new rates. However they were confused and
6 surprised by the information. They recently contacted me and asked for
7 additional information. I also talked to Mary Addington of Frys Food and they
8 had no idea this was coming and that they were headed for an 83.96% increase.
9 Mary passed the information on to Zach Garrett of Barclay Group who also had
10 no idea about the impending rate case.

11 Q. Do you have an opinion as to what percent of the residents of the Agua
12 Fria District, not including Sun City Grand, know that there is a current
13 rate case wherein AZ-AM is requesting to raise their water rates by 83.96%?

14 A. Yes. Based on how hard it was to convince CAM that we were in Agua Fria
15 and the personal contacts I have made my opinion is less than 3%. When you
16 look at the prior cases you find large numbers of objections from residents
17 of Anthem, Sun City, Sun City West, Tubac and Mohave and virtually none from
18 Agua Fria which has more rate payers then the others.

19 Q. How does your water quality compare to the water in Prescott?

20 A. Up until the late spring of 2010 is was acceptable but not as good tasting
21 and then it got bad. My wife started complaining about the dishes coming out
22 of the dish washer were coated with a thin white coating. I drained the hot
23 water heater but that did not fix the problem. Then in the CAM meeting with
24 Ian Crooks mentioned above, Ian told us that AZ-AM had shut down several of
25 the wells in our development, which were operating fine, and was replacing
their production with CAP water from the White Tanks Plant. I commented that
this could be the cause of the hard water that was coating my dishes. Ian
said that wasn't the cause.

1 Q. Did you pursue solving your problem?

2 A. Yes. I called a water softener company and they asked for my zip code
3 which I gave them. They checked their records and said that my hardness was 3
4 grains, which is basically soft water. Their data was from 2009 so I went
5 online to AZ-AM and there the hardness was not in grains but there was a
6 number to call. So I called Kevin Figgins at AZ-AM and explained my problem.
7 He said that my hardness now was 17 grains because since May of 2010 I had
8 been getting CAP water.

9 Q. Did that lead to a solution?

10 A. Well I can install a water softener and an osmosis unit at an initial cost
11 of \$1,500 and ongoing cost for chemicals or I can try to get the ACC to give
12 the residents of SCG back their well water from the wells whose cost were
13 included in the price we paid for our lots.

14 Q. Do you have an understanding of why Arizona American Water is asking for
15 this rate increase?

1 A. Yes. In the late 1990's it appeared clear that if the west valley was to
2 continue grow with new home construction, the CAP water would have to be used
3 so the CAP subcontractors (private water companies and public entities)
4 formed WESTCAP to study the problem. Many government agencies that were not
5 subcontractors acted as advisors. Their results were presented in 2003 as an
6 example of public private cooperation. It defined an approach to using the
7 CAP water by building plants like the White Tanks. The one thing they never
8 resolved was how to pay for them. No single subcontractor had a large enough
9 allocation to justify building a plant for their exclusive use.

10 In about 2006 Maricopa Water District (MWD) entered into an agreement to
11 build the White Tanks Plant and Arizona American Water would run it. Their
12 agreement broke down and Arizona American filed a case with the Corporation
13 Commission to allow them to build the plant. The plant would be paid for by
14 increasing the hookup fees for new Agua Fria users. The rate was set so that
15 it would bring in revenue at about the same rate that construction costs
16 would be realized. A housing slump occurred and only a small portion of the
17 expected revenues were received. Now Arizona American wants to borrow money
18 to pay for the plant and add it to the rate base.

19 Q. Do you have an opinion of the original plan?

20 A. Yes. The developers in the area South of Greenway would pay the additional
21 hookup fee and reflect it in the lot prices. So those who would have the most
22 need of the CAP water would pay for the plant that processes it. It moves
23 water closer to the other utilities. If you want gas you must pay a fee based
24 on distance from a main line. Then if someone develops an area adjacent to
25 you, they can connect to your gas system without having contributed to the
cost of connecting to the distant main line. This is why we did not have gas
at our home in Prescott. This plan solves that problem by having all
developments contribute to the cost of bringing water to the area. I believe
that this was an extremely good approach and but for the fall off in new
housing would have been fair to all parties and assure future growth in the
West Valley.

Q. Do you have an opinion of Arizona Americans plan to correct this problem?

A. Yes. However, before I go into that let me explain how I view the Agua
Fria District in my testimony. I divide it into three parts, Agua Fria North
(area North of Greenway), Agua Fria South (the Area South of Greenway) and
Corta Bella. I believe that it is unfair to two groups of rate payers. The
group I am in, Agua Fria North, whose developers made contributions in aid of
construction that helped fund the water infrastructure to exploit the water
in the aquifer under our developments and then included the cost of the
contribution in the price we paid for our lots. Our wells are not in any
danger of lowering the water level in the wells under our developments to
1000fbs. Refer to exhibit 1 and 2. There is no evidence that the water in the
aquifer under our developments is being contaminated.

Exhibit 1 is a spreadsheet showing the projected water levels for the wells
in Agua Fria North after 100 years from 2010. It calculates the level based
on the average yearly level change since the well was put in service times
100 and added to the 2010 level. It shows an average 100 water level well
above the 1000fbs requirement. Exhibit 2 shows the same data for the wells in
Agua Fria South.

1 The aquifer under Agua Fria South has different hydrology and geology
2 different from that under Agua Fria North and has been heavily farmed with
the associated groundwater impacts of fertilizers. The following is a quote
from Joseph E. Gross's Direct Testimony Page 5 of 12.

3 **"In the Agua Fria Water District, Arizona-American and developers have found it**
4 **increasingly difficult to locate and obtain suitable well sites. ADWR well-spacing**
5 **regulations have made the permitting of high capacity wells extremely difficult. Flow**
6 **rates in many new wells south of Greenway Road have been disappointing, and several**
7 **wells drilled or tested for potable water supply in this area have proven completely**
8 **unusable. Further, most new wells in this area have required costly arsenic treatment**
9 **facilities to meet potable water standards. Levels of fluorides and nitrates are also**
10 **troubling and generally require additional high-cost treatment."**

11 The most current long range studies done by the AZDWR have shown the area
12 most in danger in the area at the base of the White Tanks. Refer to exhibit
13 3. Exhibit 3 shows the projected water levels based on projected requirements
14 input by various users. The red area at the base of the White Tank Mountains
15 shows areas between 900 and the 1000 foot limit. This model does not include
16 surface water. Exhibit 3 is Figure 31 from AZDWR Modeling Report No. 22,
17 Authored by Wesley Hipke and dated July 2010.

18 I consider AZ-AM proposal similar to the request to combine the Sun City
19 District with the Anthem District. In that the Sun City District was being
20 asked to pay for infrastructure that should have been paid for by the
21 developer.

22 The second group that the proposed solution treats unfairly is those who have
23 paid the increased hookup fee. They have paid their fair share of the cost of
24 the White Tanks Plant and if there were more of them there would be no reason
25 to increase the asset base.

Q. Do you have an alternative solution to the problem?

17 A. Yes. I propose that the developers in the Agua Fria District who have not
18 yet paid the current dedicated hookup fees (meaning just the amount of
19 increase established in the '08 rate case) for the lots be requested to pay
20 the fees now. I propose that the ACC change the tariffs for Agua Fria hookup
21 fees by increasing them each subsequent year by 20% and that all revenues are
22 to be used to pay for the White Tanks Plant. I propose that Arizona American
23 secure a loan where the interest is added to the principle so no payments
24 would be required. Hookup fees would be applied to the outstanding loan.
25 Money collected over time in excess of the current plant cost could be used
to expand the plant. If the plant reaches its maximum capacity of 80mgd, any
additional funds should go to Arizona American for having taken the risk of
building the much needed plant but not included in their targeted return
profit.

Q. Is that your total proposed solution?

24 A. No. I would also propose that Arizona American establish a separate
25 district for the area South of Greenway. The logic of that is we have
aquifers with different characteristics. In addition, Arizona American has

1 included a cost savings of \$121,248 as of June 30 2010 by using White Tanks
water to produce 1,050,740Kgals as of June 30 2010 instead of well water.
2 Dividing \$121,248/1,050,740Kgals equals \$0.1154 per 1000 gallons less to
deliver White Tanks water. This could allow their rates to be lower in the
new district than in the Agua Fria North.

3 Q. Do you have any additional requests?

4 A. Yes, just one. AZ-AM should be required to put the resident's or other
user's district name in large bold print on their bills as soon as the next
5 bill.

6 Q. How would you like to start you presentation in support of your solution?

7 A. With subsidence.

8 The most likely place for subsidence to occur is where it has occurred
before.

9 Dropping the static water level is necessary for significant subsidence to
10 occur but not sufficient to cause significant subsidence. One area may
drop the water level to 1000fbs and have no significant subsidence and
11 another area do the same thing and have significant subsidence.

12 Many things can contribute to significant man caused subsidence. Some
subsidence produces earth fissures. The most common cause of earth
13 fissures in the WSRB is differential subsidence and proximity to bedrock
or bedrock like feature. The salt dome is the bedrock like feature that is
responsible for some of the earth fissures in the WSRB (West Salt River
14 Basin)(see Exhibit4) and it is located near the Luke Air Force Base, the
only active subsidence area in the WSRB. Other earth fissures are found
15 near the base of the White Tanks. Earth fissures near McMicken Dam(2003-
06) required removing/replacing a portion of the dam at a cost of several
16 million dollars. (see Exhibit 5)

17 If the feature has a steep slope and differential subsidence, like the
salt dome and the White Tanks, earth fissures may occur. The existence of
18 earth fissures near the salt dome and near the White Tank Mountains is
proof there is subsidence in those area.

19 Q. Do you have the background to make these assertions?

20 A. No, but after reading the data available from the AZDWR group responsible
for monitoring subsidence, I came to these opinions. I emailed Brian Conway
21 the list and asked if he would concur in my opinions. He agreed the
statements were correct.

22 Q. What do these statements imply?

23 A. They would show that Agua Fria South has a much higher chance of
experiencing subsidence then Agua Fria North.

24 Q. What other differences do you find between Agua Fria North and Agua Fria
25 South?

1 A. I would like to go over Exhibit 1 and 2 in more detail. Exhibit 1 (Agua
2 Fria North) shows that based on historical usage the static water level in
3 2100 would be 632.12 ft and when I remove wells 2.1, 3.2, 4.2, 4.4 and 4.5 it
4 would be 723.46 ft. I suspect those wells would drop but the historical data
5 shows them increasing. The same data for Exhibit 2 (Agua Fria South) is
6 1210.22 and 1358.38.

7 A second measure of the aquifers productivity is how fast you can pump the
8 water out. Agua Fria North has an average yield of 1067 Gpm and Agua Fria
9 South has an average yield of 579 Gpm. Generally speaking, when you drill a
10 well, you want to put in a pump that will produce the most Gpm. The data from
11 Agua Fria South may be caused by the low flow rate discussed in Gross's
12 testimony sited above.

13 An explanation is called for. When you start pumping a well, the water level
14 drops at the pump intake. If you have a low flow rate, water from the
15 surrounding aquifer does not flow to the pump fast enough to keep the water
16 level above the pump intake. This causes cavitation as the water becomes a
17 water air mixture. This reduces output and can damage the pump and pump
18 motor.

19 Q. Are there any additional differences between Agua Fria North and Agua Fria
20 South?

21 A. Yes, there are several wells, AF TL 1, 3 and 4 that appear to be in the
22 area where the bedrock is sloping down rapidly and is therefore a possible
23 area of earth fissures. I have submitted the data to the subsidence group at
24 AZDWR. I believe that these pumps should be shut down until it can be
25 determined whether they represent a risk of causing earth fissures. Again see
26 Exhibit 5 page 2.

27 Q. Are there any additional differences between the two districts?

28 A. None that is relevant to my proposal.

29 Q. What about Corta Bella?

30 A. I do not understand why they are in the Agua Fria District. If they want
31 to be part of Agua Fria North or South, its fine with me.

32 Q. Is there any more to you proposed solution?

33 A. Yes. I propose that AZ-AM use the White Tanks output to recharge the
34 aquifer much like what was done in Tucson. (see Exhibit 6) This would improve
35 the ground water by diluting it and therefore reducing the concentration of
36 the arsenic and other pollutants in the groundwater White Tanks water mix
37 allowing non productive wells to be put into use. It would also raise the
38 water table and help prevent subsidence.

39 Q. Does that complete your direct testimony?

40 A. Yes

Signed this day June 24th 2011

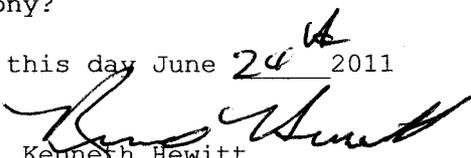

Kenneth Hewitt

Exhibit 2

Agua Fria South Well Data

Well ID	2010 Level	Level Change	Years to Change		Projected 100 yr lvl	Pump Horsepower	Yield (Gpm)	Casing Depth	Casing Diameter
5.1	352*	65	12	541.67	893.67	150	800	1000	16
5.2	368	85	14	607.14	975.14	125	600	888	18
8.1	437	-4	7	-57.14	379.86	100	800	980	18
8.2	452	38	6	633.33	1085.33	125	540	1103	18
8.3	443	24	5	480.00	923.00	75	240	841	15
9.1	366	46	7	657.14	1023.14	100	320	900	12
9.2	233	36	7	514.29	747.29	125	500	660	16
9.3	229	19	6	316.67	545.67	125	530	618	12
9.4	232	16	6	266.67	498.67	100	500	610	16
11.2	396	-4	3	-133.33	262.67	200	880	1058	18
14.3	450	23	2	1150.00	1600.00	125	570	1200	18
AFTL 1	373	155	3	5166.67	5539.67	200	500	1606	18
AFTL 3	381	25	2	1250.00	1631.00	200	720	890	20
AFTL 4	388	18	4	450.00	838.00	150	600	720	18

*2006

11843.10 16943.10 8100.00

Ave depth 2110 1210.22

Ave yield in GPM 579
16300.57

1358.38

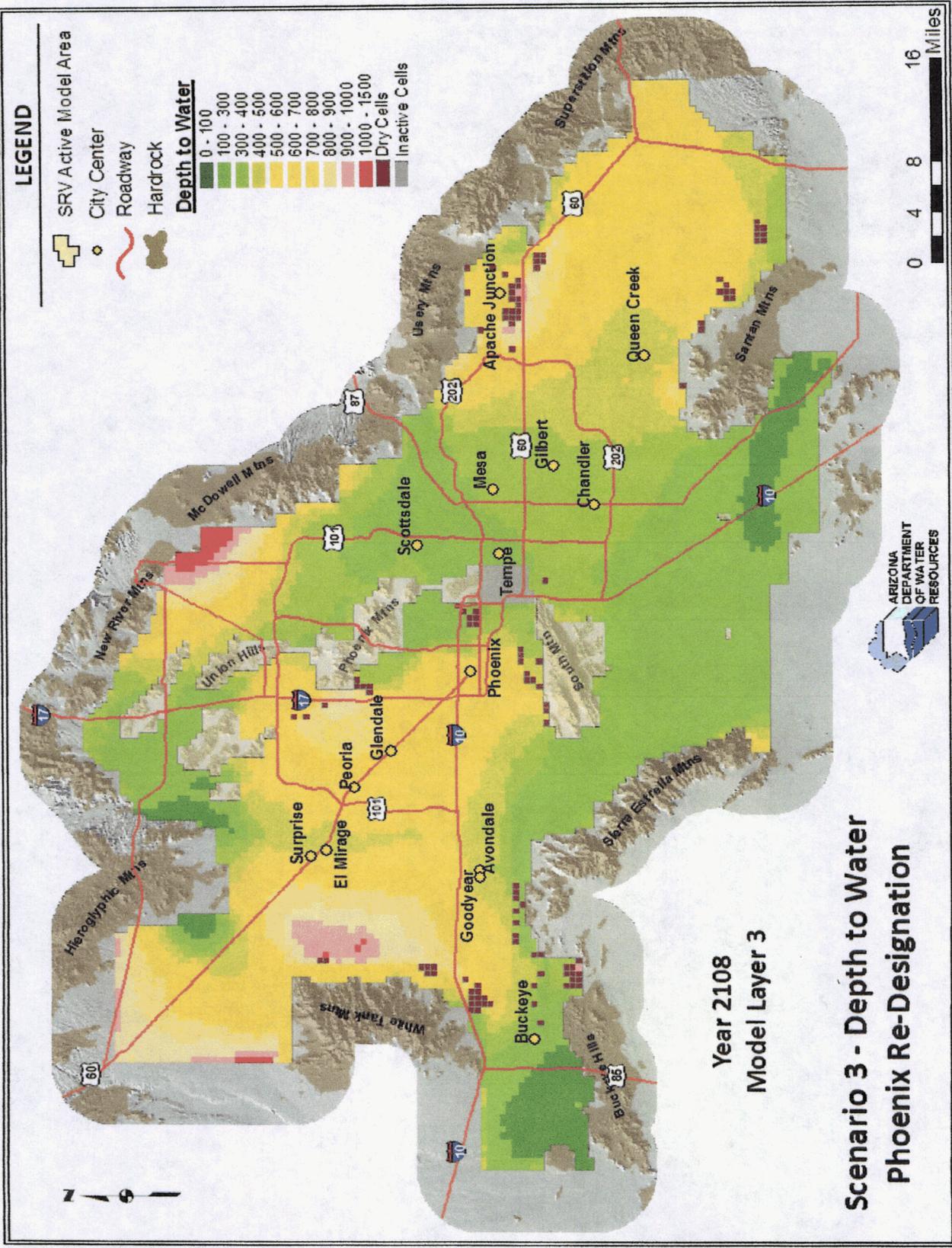
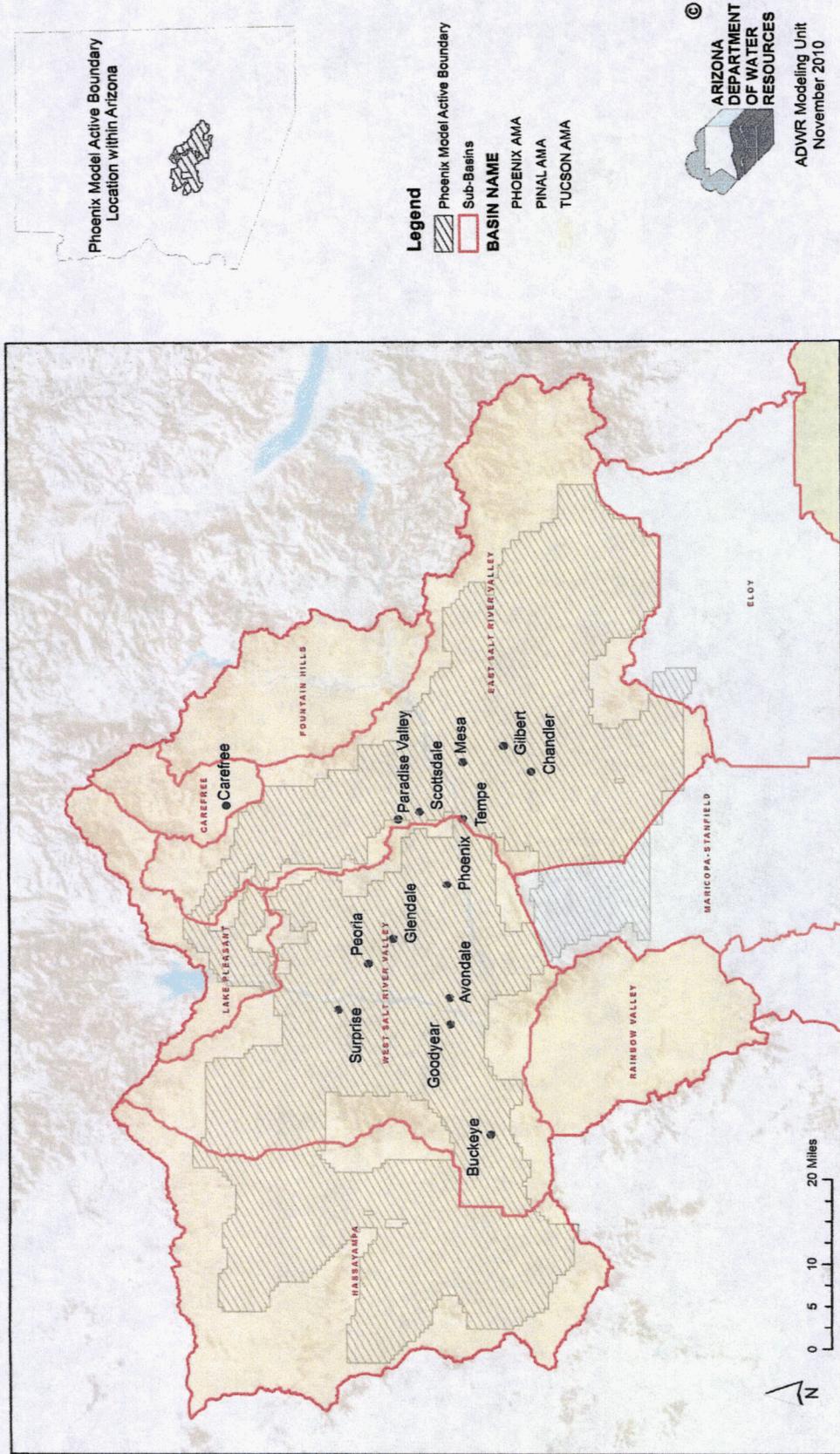


Figure 24. Scenario 3 - Depth to Water (DTW) of Layer 3 for the year 2108.

Figure 1

Map showing the Phoenix active model area sub-basins



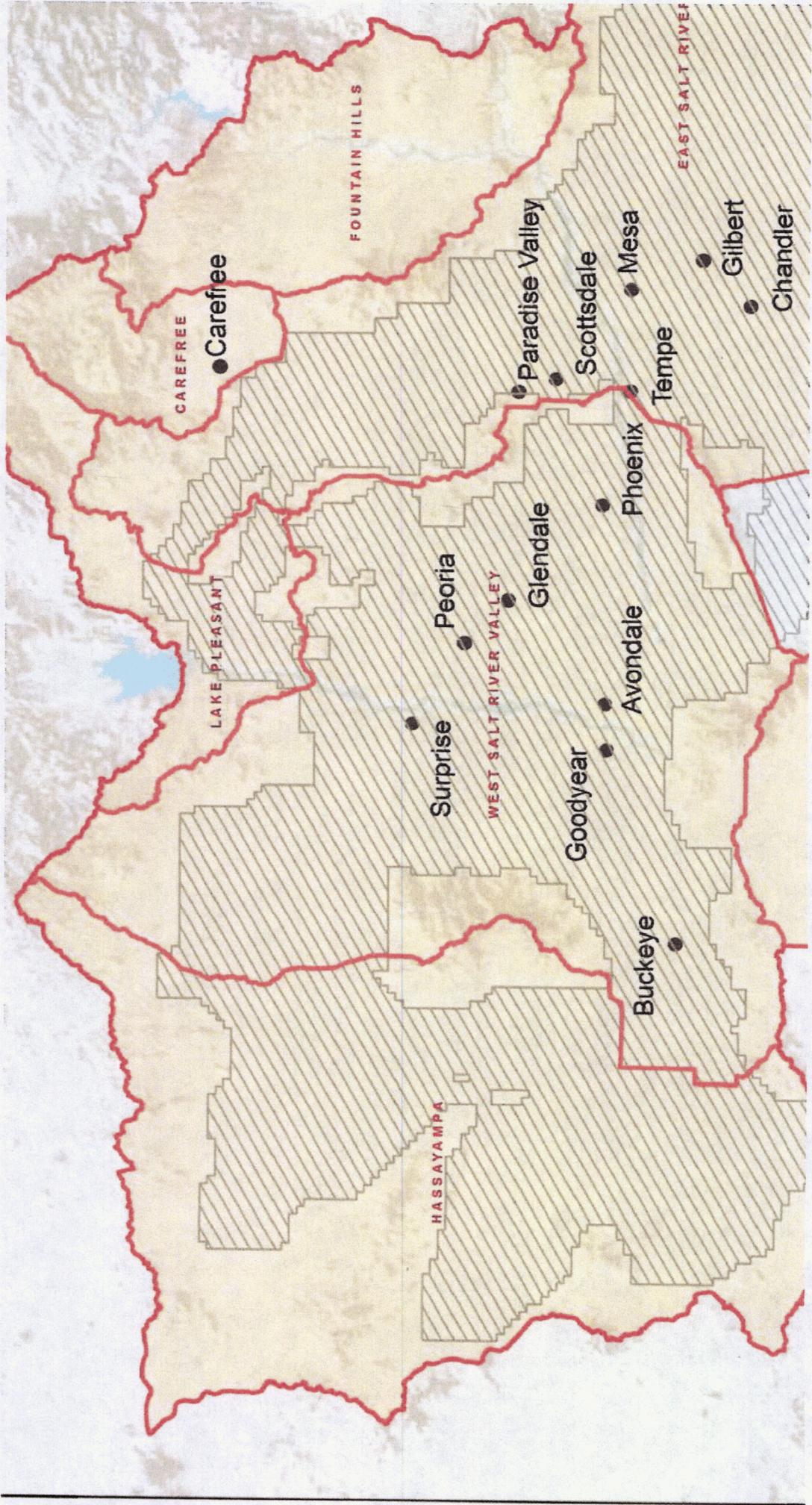
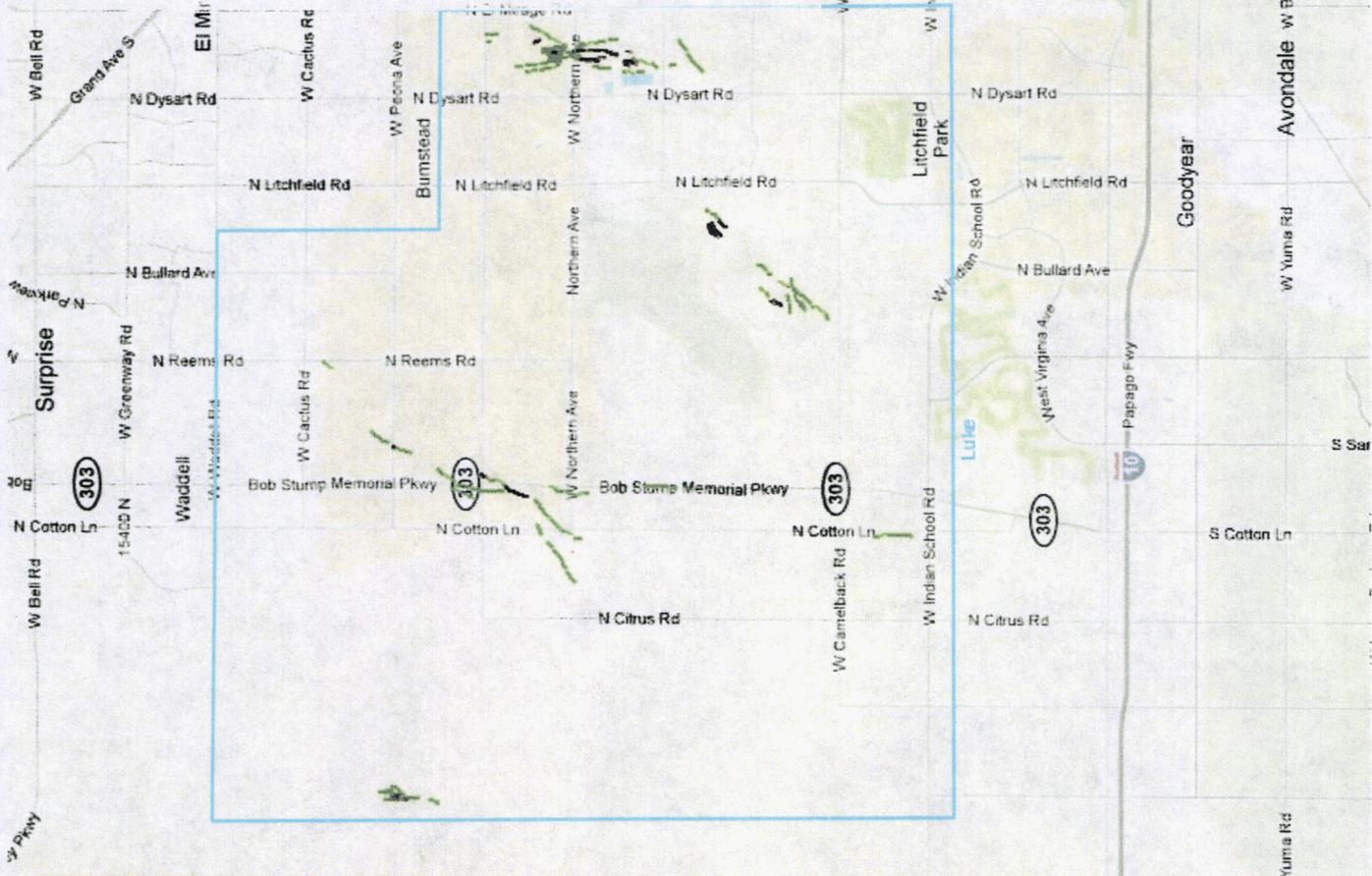


Exhibit 4 page 2 of 2



Earth Fissure Key

- Continuous earth fissure
 - Discontinuous earth fissure
 - - - Reported, unconfirmed earth fissure
 - Study Area boundary
- [Click a Study Area to download maps](#)

STUDY AREA NAMES are shown in **BLUE** where mapping is complete. Names shown in **GREEN** are approximate locations where mapping is in progress

Township, Range and Section

- Toggle Layer Visibility

[Show All Study Areas](#)

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CENTRAL AVRA VALLEY STORAGE AND RECOVERY PROJECT (CAVSARP)

The City of Tucson Water Department's Central Avra Valley Storage and Recovery Project (CAVSARP) is located on City-owned land near Sandario Road and Mile Wide Road. Field testing of the project began in 1997. Delivery of drinking water from the project began in May 2001.

THE PURPOSE AND HISTORY OF CAVSARP

The CAVSARP project allows Tucson Water to productively use Colorado River water as a drinking water supply through a process known as recharge and recovery. Groundwater overuse in the latter half of the 20th Century led to severely declining groundwater levels and the beginnings of subsidence (land sinking) in and around Tucson. In addition, Arizona law requires Tucson and other groundwater dependent communities to reduce reliance on this limited resource and switch to renewable supplies. To eliminate overpumping, the City has been switching from groundwater to renewable Colorado River water delivered via the Central Arizona Project (CAP). Water quality issues that occurred when Colorado River water was first delivered to Tucson Water customers in 1992-94 led to the passage of Proposition 200, the Water Consumer Protection Act, which prevented the delivery of CAP water directly to customers. To meet the requirements of the Act, Tucson Water developed the CAVSARP project to recharge, store and recover a blend of Colorado River water and groundwater. This allowed the City to shut down many of its groundwater wells in and around urban Tucson.

OVERVIEW OF A STORAGE AND RECOVERY PROJECT

In general, a storage and recovery project stores surface water (in this case, Colorado River water) in the ground and later recovers it for use. Storing water in the ground is similar to putting money in a bank. River water is released into constructed basins to percolate naturally through the earth until it reaches the underground water table and mixes with the groundwater. Many of these projects are designed to store river water underground for use in the future. At CAVSARP, specially designed wells have been constructed to recover the blended water and deliver it to Tucson Water customers.

CAVSARP FACILITIES

The CAVSARP project includes eleven basins, totaling over 300 acres, along with pipelines to transport Colorado River water from the CAP canal to the recharge basins. The project allows up to 80,000 acre-feet of river water to be recharged and stored underground each year. The project also includes more than 27 wells and a reservoir/booster station that allows the City to recover the CAP/groundwater blend and deliver it to customers. Recovery is ramping up to 70,000 acre feet per year. (*One acre-foot equals 325,851 gallons.*)

GROUNDWATER LEVELS AND WATER QUALITY

The project is designed to recover a blend of Colorado River water and native groundwater. Because each year the amount of river water recharged by the City will exceed the amount recovered, water levels elsewhere in Avra Valley should not be negatively affected by this storage and recovery project.

The quality of the water recovered from this project and delivered to Tucson Water customers will change over time. Initially, it was very similar to the native groundwater. As the recharge of Colorado River water continues, the recovered water will become more like river water in terms of mineral content. The City is examining several treatment methods which could be used to modify the recovered water if necessary to meet the water quality and water cost goals determined by Tucson Water customers.

It is important to note that the quality of groundwater varies in different locations. For instance, levels of total dissolved solids (TDS) in groundwater are lower than Colorado River water in some areas and higher in others.

WHAT DOES THE FUTURE HOLD?

Over time, this facility may expand to recharge and/or recover larger volumes of Colorado River water. In addition, Tucson Water is currently developing the Southern Avra Valley Storage and Recovery Project (SAVSARP).

The following links provide additional information about recharge projects and activities:

- Arizona Department of Water Resources

- Central Arizona Project
- Arizona Water Banking Authority
- Central Arizona Groundwater Replenishment District
- Arizona Water Resources Research Center
- Arizona Water Institute