

ARIZONA WATER BANKING AUTHORITY

STORAGE FACILITY INVENTORY



UPDATED

December 31, 2005

Final Version

## **Introduction**

Pursuant to A.R.S. §45-2452(A), the Authority was required to develop a Storage Facility Inventory of all existing storage facilities in Arizona, prior to March 1, 1997. The purpose of the Inventory is "...to determine whether storage facilities exist in this state to meet the water storage needs of the authority for the following ten years" (A.R.S. §45-2452(D)). The Authority approved the initial Inventory in 1997. Because additional storage facilities are continually being constructed, A.R.S. §45-2452(F) requires the Authority to update the Inventory at least once every five years. The Authority has been annually updating all new facilities that could be utilized by the Authority in its Annual Report. In addition to providing a compilation of new facilities available to the Authority, this update also complies with the Storage and Interstate Release Agreement, which requires the updating of the facility inventory prior to utilizing new facilities for the storage of interstate water.

It is important to note that the primary purpose of the Inventory is to identify the capacity that is available for potential storage by the Authority to meet its objectives. The inclusion of a facility in the Inventory does not equate to a commitment by the Authority that the facility will be utilized for water banking purposes in the future. The Authority will continue to determine annually which facilities will be used through the development of an Annual Plan of Operation. Conversely, a facility that is not included in the Inventory may be utilized in a future Annual Plan of Operation.

## **Existing Facilities**

As in the initial Inventory developed in 1997, the Tables included in this Inventory list all existing storage facilities in the Phoenix, Pinal, and Tucson Active Management Areas (AMAs), as well as the remainder of the state. Tables 4A-4H have been divided by AMA and further by type of storage facility; underground storage facility (USF) or groundwater savings facility (GSF). Those facilities capable of receiving and storing CAP water are listed separately from those permitted for effluent or other non-groundwater supplies.

## AWBA-Storage Facility Inventory Update

In contrast to the initial Inventory, this Inventory can consider effluent as a potential supply source. After the initial Inventory was developed, the Legislature, in 1998, amended the Statutes to allow the Authority to “obtain effluent for storage but only after the Authority has stored all available excess CAP water or when CAP water is otherwise unavailable or undeliverable.” (ARS § 45-2423.B.7 (a)) Currently, the Authority does not hold permits for the storage of effluent. However, if shortages to the availability of CAP water supplies are anticipated, the Authority will seek effluent supplies and storage facilities in order to meet its objectives.

The Tables also include the following information for each existing storage facility: 1) the location of the facility 2) the type of facility and facility permit number; 3) the facility permit holder; 4) a brief description of the facility; 5) the total annual permitted volume for each facility; 6) the holders and permit numbers of the water storage permits for each facility; 7) the annual storage volume of each water storage permit for the facility<sup>1</sup>; and 8) water management and hydrology comments provided by ADWR. In addition to existing storage facilities, facilities that have a pending application with ADWR for a facility permit are identified in the Tables for each region. A map identifying the facility locations has also been included for each area.

### **Phoenix Active Management Area**

There are currently 50 permitted storage facilities located in the Phoenix AMA. Of these facilities, 40 are USFs permitted for storage of approximately 630,000 acre-feet per year of CAP water and 240,900 acre-feet per year of effluent or other surface water supplies. The remaining 10 are GSFs permitted for storage of approximately 445,000 acre-feet per year of CAP water and approximately 42,000 acre-feet per year of effluent. Thus, the total permitted capacity for facilities capable of receiving CAP water in the Phoenix AMA exceeds 1,000,000 acre-feet per year. However, the Authority recognizes that much of that capacity may not be available for utilization for water banking purposes due to higher priority storage obligations and physical constraints at the facility<sup>2</sup>.

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<sup>1</sup> To provide maximum flexibility for water storage, ADWR may issue water storage permits for a facility that exceeds in total volume the permitted annual facility storage volume; however, total storage at a facility during the year may never exceed the permitted annual facility storage volume.

<sup>2</sup> Pursuant to A.R.S. § 45-2427 (A), the Authority has the last priority for the use of Colorado River water in the State.

## AWBA-Storage Facility Inventory Update

Of the facilities described above, five are new facilities permitted since the initial Inventory of 1997 that are capable of receiving CAP water and have storage capacity available to the Authority. These include: Central Arizona Water Conservation District (CAWCD) Agua Fria Managed and Constructed USFs, (combined total volume of 100,000 Af/Yr); CAWCD Hieroglyphic Mtns. USF (35,000 Af/Yr); West Maricopa Combine Hassayampa Managed USF (25,000 Af/Yr); and CAWCD Tonopah Desert USF (150,000 Af/Yr 1<sup>st</sup> 4 years, 87,500 Af/Yr remaining 16 years). In addition, CAWCD currently has an application for a USF pending with ADWR that is located in the southeastern portion of the AMA. The proposed annual volume for this USF is 56,500 acre-feet.

As of the date of this Inventory the Authority holds water storage permits in the Phoenix AMA totaling 800,000 acre-feet per year<sup>3</sup>. Table 1 identifies the permitted volumes associated with the water storage permits held by the Authority (as of 2005) and the annual accumulation of long-term storage credits earned by the Authority at storage facilities for which the Authority holds water storage permits. Shaded facilities are those that have been issued since the initial Inventory. The cumulative balance of long-term storage credits held by the Authority in the Phoenix AMA totals 1,064,745 acre-feet (calculated through December 2004).

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<sup>3</sup> Certain facilities are permitted such that the capacity increases in phases. In these instances a weighted average was used to determine annual capacity.

## AWBA-Storage Facility Inventory Update

**Table 1:** CAP Credits Earned Annually at Storage Facilities Located in the Phoenix AMA by the Arizona Water Banking Authority – Calendar Years 1997 through 2004

FACILITY (Type)	AWBA Water Storage Permit Capacity (AF)	1997 (AF)	1998 (AF)	1999 (AF)	2000 (AF)	2001 (AF)	2002 (AF)	2003 (AF)	2004 (AF)
GRUSP (USF)	200,000 <sup>a</sup>	38,588	54,256	57,303	76,168	59,423	40,461	21,123	52,645
CHCID (GSF)	3,000	0	84	0	1,093	518	911	567	863
Maricopa WD (GSF)	40,000	4,751	18,434	18,620	1,084	0	0	4,283	0
New Magma ID (GSF)	54,000	40,051	33,690	40,679	42,635	42,593	44,779	21,107	40,606
Queen Creek ID (GSF)	28,000	18,600	10,895	11,651	9,360	8,654	7,821	714	7,124
RWCD (GSF)	100,000	46,700	0	0	0	0	0	11,875	0
SRP (GSF)	100,000	N/A	N/A	20,978	14,096	14,188	10,629	9,836	7,600
Tonopah (GSF)	15,000	0	0	0	0	0	0	0	2,368
Agua Fria (USF)	100,000	N/A	N/A	N/A	N/A	3,425	25,279	11,310	15,365
Hieroglyphics (USF)	35,000	N/A	N/A	N/A	N/A	N/A	0	18,812	20,151
Tonopah Desert (USF)	100,000 <sup>b</sup>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West Maricopa Combine (USF)	25,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>TOTAL</b>	<b>800,000</b>	<b>148,690</b>	<b>117,359</b>	<b>149,231</b>	<b>144,436</b>	<b>128,800</b>	<b>129,880</b>	<b>99,627</b>	<b>146,722</b>

N/A = Facility not completed or the Authority did not hold a Water Storage Permit for the Facility in that year.

- The permitted volume for GRUSP is 200,000 acre-feet per year; however, the actual volume that the facility is capable of receiving is approximately 100,000 acre-feet per year. Although the figures in this Inventory are based on the permitted volume at GRUSP of 200,000 acre-feet, subtracting 100,000 acre-feet has no impact on the ability to achieve the Authority's objectives in the Phoenix AMA.
- Facility is permitted for 150,000 acre-feet for the first 4 years and 87,500 acre-feet for the next 16 years, the 100,000 acre-feet listed is a weighted average.

### Pinal Active Management Area

There are currently seven permitted storage facilities in the Pinal AMA, four of which are USFs, only permitted for storing effluent, and three are GSFs permitted to store CAP water. The total permitted capacity for facilities capable of receiving and storing CAP water is 285,000 acre-feet per year<sup>4</sup>. There were no new facilities permitted in the Pinal AMA since 1997 that provide additional storage capacity to the Authority.

<sup>4</sup> Again, the Authority recognizes that much of the capacity may not be available for water banking purposes due to higher priority storage obligations of the facility and other factors, however, the Authority is the primary storing partner in the Pinal AMA at this time.

## AWBA-Storage Facility Inventory Update

The Authority holds water storage permits in the Pinal AMA totaling 285,000 acre-feet per year equal to the total volume of all permitted storage facilities in the Pinal AMA capable of receiving CAP water each year. Table 2, illustrates the annual accumulation of long-term storage credits earned by the Authority at storage facilities for which the Authority currently holds water storage permits. The total cumulative balance of long-term storage credits in the Pinal AMA is 706,703 acre-feet (calculated through December of 2004).

**Table 2:** CAP Credits Earned Annually at Storage Facilities Located in the Pinal AMA by the Arizona Water Banking Authority – Calendar Years 1997 through 2004

FACILITY (Type)	AWBA Water Storage Permit Capacity (AF)	1997 (AF)	1998 (AF)	1999 (AF)	2000 (AF)	2001 (AF)	2002 <sup>a</sup> (AF)	2003 (AF)	2004 <sup>a</sup> (AF)
<b>CAIDD</b> (GSF)	110,000	39,628	7,405	5,509	11,617	10,005	38,243	5,015	12,652
<b>HIDD</b> (GSF)	55,000	45,763	35,816	38,053	52,021	51,180	52,247	25,460	15,660
<b>MSIDD</b> (GSF)	120,000	59,974	30,645	19,201	26,875	43,479	49,045	10,059	21,151
<b>TOTAL</b>	<b>285,000</b>	<b>145,365</b>	<b>73,866</b>	<b>62,763</b>	<b>90,513</b>	<b>104,664</b>	<b>139,535</b>	<b>40,534</b>	<b>49,463</b>

<sup>(a)</sup> Credits include 61,098 and 9,191 acre-feet in 2002 and 2004, respectively for Interstate Water Banking.

### Tucson Active Management Area

There are currently 15 permitted storage facilities located in the Tucson AMA. Of these facilities, nine are USFs permitted for storage of approximately 171,000 acre-feet per year of CAP water and 61,647 acre-feet per year of effluent or other surface water supplies. The remaining six are GSFs permitted for storage of approximately 83,000 acre-feet per year of CAP water.

There have been a number of facilities in the Tucson AMA that have increased permitted volumes since the initial Inventory. In addition, some facilities that were permitted as "Pilot" or short-term facilities have since been permitted as long-term projects. The total volume of all permitted existing storage facilities in the Tucson AMA capable of receiving CAP water increased from 48,831 acre-feet per year to approximately 254,000 acre-feet per year<sup>5</sup>.

<sup>5</sup> As with the other AMAs, the Authority recognizes that much of the capacity may not be available for water banking purposes due to higher priority storage obligations of the facility and other factors.

## AWBA-Storage Facility Inventory Update

The following are new facilities permitted since the initial Inventory that have storage capacity available to the Authority: CAWCD Lower Santa Cruz Replenishment Project USF (50,000 Af/Yr, not to exceed 600,000 in storage); Herb Kai-Red Rock GSF (11,231 Af/Yr), and Herb Kai-Avra Valley GSF (12,513 Af/Yr).

In the Tucson AMA the Authority holds water storage permits totaling 211,359 acre-feet per year. Table 3, illustrates the annual accumulation of long-term storage credits earned by the Authority at storage facilities for which the Authority currently holds water storage permits. Shaded facilities are those that have been issued since the initial Inventory. The total long-term storage credit balance for the Authority in the Tucson AMA is 296,208 acre-feet (calculated through end of 2004).

**Table 3: CAP Credits Earned Annually at Storage Facilities Located in the Tucson AMA by the Arizona Water Banking Authority – Calendar Years 1997 through 2004**

FACILITY (Type)	AWBA Water Storage Permit Capacity <sup>a</sup> (AF)	1997 (AF)	1998 (AF)	1999 (AF)	2000 (AF)	2001 (AF)	2002 (AF)	2003 (AF)	2004 (AF)
Avra Valley (USF)	11,000	1,996	2,569	3,342	1,860	5,945	6,408	3,335	5,715
CAVSARP (USF)	80,000	936	6,993	6,894	9,858	0	0	7,160	5,616
Pima Mine Road (USF)	30,000	N/A	1,755	9,912	7,008	12,478	21,044	16,349	17,205
BKW Farms (GSF)	16,615	N/A	N/A	N/A	N/A	N/A	N/A	1,451	0
Lower Santa Cruz (USF)	50,000	N/A	N/A	N/A	15,803	22,465	24,512	28,776	39,506
Kai – Red Rock (GSF)	11,231	N/A	N/A	N/A	2,645	1,055	1,636	2,937	1,045
Kai – Avra Valley <sup>b</sup> (GSF)	12,513	N/A	N/A	0	0	0	0	0	0
<b>TOTAL</b>	<b>211,359</b>	<b>2,932</b>	<b>11,317</b>	<b>20,148</b>	<b>37,174</b>	<b>41,942</b>	<b>53,600</b>	<b>60,008</b>	<b>69,087</b>

N/A = Facility not completed or the Authority did not hold a Water Storage Permit for the Facility in that year.

<sup>(a)</sup> Although the CAVSARP facility is permitted for 80,000 af/yr for 20 years, the total in storage cannot exceed 1.2MAF. Likewise the Lower Santa Cruz Replenishment facility is permitted for 50,000 AF/Yr, but total storage cannot exceed 500,000 AF.

<sup>(b)</sup> Kai-Avra Valley GSF does not currently have an operating distribution system in place.

### **Outside AMAs**

Currently there are two permitted USFs located outside of the AMAs capable of receiving CAP water: the Vidler Recharge Facility and the SR260/Arizona Department of Transportation (ADOT) Underground Storage Facility.

The Vidler Underground Storage Project, located in the Harquahala Valley, is permitted for 100,000 acre-feet per year. Although the Authority holds a water storage permit at this facility for this same volume, its agreement with the Vidler Water Company for use of the facility has expired and not been renewed. While the Vidler Water Company has stored approximately 62,596 acre-feet through 2004, the Authority has not utilized this facility.

The SR260/Arizona Department of Transportation (ADOT) Underground Storage Facility is located near Payson in central Arizona. This facility has been constructed primarily to mitigate potential decreases in local groundwater levels due to groundwater use for the expansion of SR260. Water storage at the facility has been designated as non-recoverable water. It is not a facility that could accommodate the Authority's participation.

There is also currently one facility outside the AMAs that is permitted to receive and store effluent. The City of Sierra Vista USF, located in southeastern Arizona, is permitted to store 4,149 acre-feet of effluent annually, but is limited to a maximum of 27,383 acre-feet at any one time. It consists of 11 infiltration basins that vary in size between 1 and 2.7 acres.

In addition to USFs, there is an application pending with ADWR for a GSF in the Harquahala Valley Irrigation District located near the western border of Maricopa County. The proposed GSF is not expected to include all the farms located within the District.



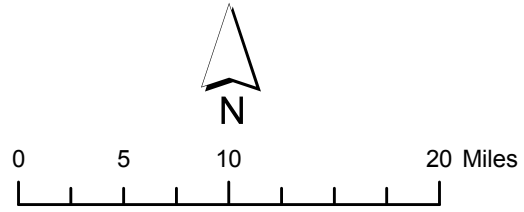
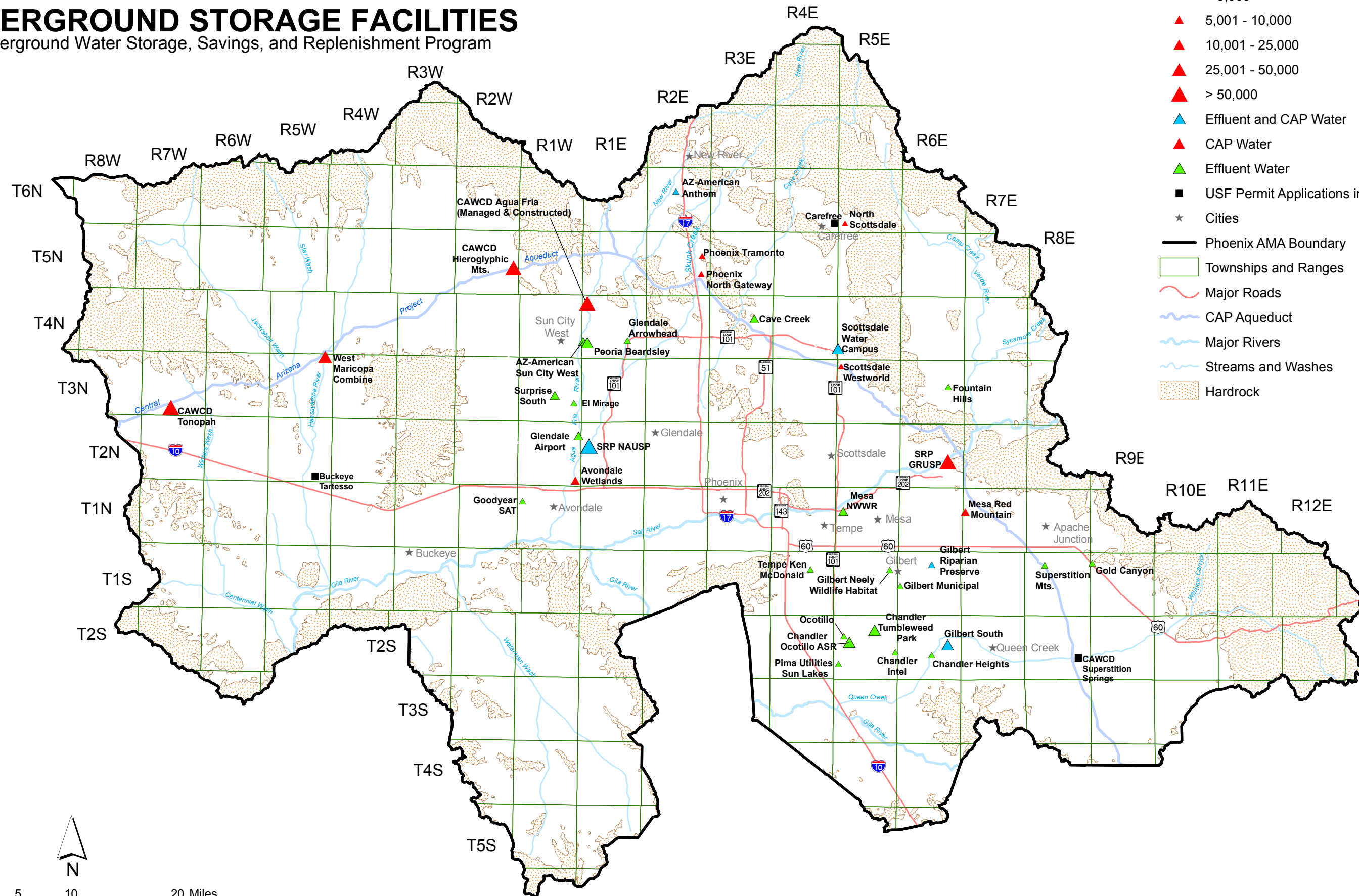
# PHOENIX AMA

## UNDERGROUND STORAGE FACILITIES

Underground Water Storage, Savings, and Replenishment Program

Permitted USF Volume (acre - feet per year)

- ▲ < 5,000
- ▲ 5,001 - 10,000
- ▲ 10,001 - 25,000
- ▲ 25,001 - 50,000
- ▲ > 50,000
- ▲ Effluent and CAP Water
- ▲ CAP Water
- ▲ Effluent Water
- USF Permit Applications in Progress
- ★ Cities
- Phoenix AMA Boundary
- Townships and Ranges
- Major Roads
- CAP Aqueduct
- Major Rivers
- Streams and Washes
- ▨ Hardrock



June 21, 2005



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AWBA-Storage Facility Inventory Update

**TABLE 4A - PHOENIX AMA Underground Storage Facilities**

MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>CAP WATER</b>							
T2N, R6E	71-516371.0000 (12/24/90 to 12/31/10)	Salt River Project	<u>Granite Reef Underground Storage Project (GRUSP):</u> Recharge of <b>CAP water</b> , Salt and Verde River water, Plan 6 water and City of Mesa effluent through in-channel basins within the Salt River just below the CAP interconnect at the Granite Reef Dam in the east Salt River Valley (ESRV) subbasin.	200,000	73-516371.1: SRP 73-516371.3: Mesa 73-516371.4: Chandler 73-516371.0501: Gilbert 73-516371.6: Phoenix 73-516371.0701: Tempe 73-516371.8: CAWCD 73-516371.9: Scottsdale 73-516371.11: Peoria <b>73-516371.12: AWBA</b>	100,000 <sup>6, 7</sup> 44,000 20,000 10,235 80,000 7,000 200,000 10,000 <sup>8</sup> 20,000 <sup>9</sup> <b>200,000</b>	Past operations have had to scale back volume due to water level rise at nearby landfill. Realistic annual volume is under 100,000 AF per year
T5N, R2W	71-584466.0002 (03/28/03 to 12/31/21)	CAWCD	<u>CAWCD/Hieroglyphic Mountains Recharge Project:</u> STATE DEMONSTRATION PROJECT. Annual recharge of <b>CAP</b> via basins. Located in the West Salt River Valley (WSRV) subbasin.	35,000	73-584466.0100: CAWCD <b>73-584466.0200: AWBA</b> 73-584466.0300: Peoria 73-584466.0400: Goodyear 73-584466.0500: DMB Whitetank 73-584466.0600: Avondale 73-584466.0700: Chandler 73-584466.0800: Del Webb Corp (pending)	35,000 <b>35,000</b> 10,000 13,000 40 20,000 30,000 10,000	Permit has been modified for non-technical reasons. Initial permit was issued in 2001.
T4N, R1E	71-569775.0003 (06/14/04 to 05/31/19)	CAWCD	<u>Agua Fria Recharge Project (Managed):</u> STATE DEMONSTRATION PROJECT. In-channel recharge project, located in the Agua Fria River in the northern portion of the WSRV, that, in combination with 71-569776, cannot store more than 100,000 acre-feet per annum of <b>CAP</b> for 20 years. Located in the southern portion of the Lake Pleasant subbasin in the northern portion of the AMA.	100,000	73-569775.0100: CAWCD <b>73-569775.0200: AWBA</b> 73-569775.0300: Duke Energy 73-569775.0400: Peoria 73-569775.0500: Goodyear 73-569775.0600: Gilbert 73-569775.0700: Avondale 73-569775.0800: Chandler 73-569775.0900: Del Webb Corp (pending)	100,000 <b>100,000</b> 1,000 9,000 13,000 100,000 20,000 30,000 10,000	Facility was first permitted in 2001. Facility has recharged less than its permitted volume to avoid water-level alert level exceedances. The permit had been modified recently to raise the water-level alert levels.
T4N, R1E	71-569776.0003 (06/14/04 to 05/31/19)	CAWCD	<u>Agua Fria Recharge Project (Constructed):</u> STATE DEMONSTRATION PROJECT. Recharge project that, in combination with 71-569775, cannot store more than 100,000 acre-feet per annum of <b>CAP</b> for 20 years.	(see above)	73-569776.0100: CAWCD <b>73-569776.0200: AWBA</b> 73-569776.0300: Duke Energy 73-569776.0400: Peoria 73-569776.0500: Goodyear 73-569776.0600: Gilbert 73-569776.0700: Avondale 73-569776.0800: Chandler 73-569776.0900: Del Webb Corp (pending)	(see above)	Flows from the managed portion of the facility terminate at the constructed portion of the facility, which consists of infiltration basins
T1N, R7E	71-535755.0000 (09/22/93 to 09/02/08)	City of Mesa	<u>Red Mountain:</u> Infiltration of <b>CAP</b> water utilizing a multi-purpose lake and recharge wells at Red Mountain District Park locate din east Mesa.	2,000	73-535755: Mesa	2,000	Project has not operated due to broken inflow meters on recharge wells.
T4N, R1W	71-556007.0001 <b>WITHDRAWN</b>	Del Webb Grand	<u>Del Webb Sun City Grand:</u> Storage of <b>CAP</b> water via trenches. Located in the WSRV.	4,000	73-556006: Del Webb	4,000	This project was withdrawn in 2005

<sup>6</sup> Plan 6 Water WSP 73-516371.2 SRP = 200,000 acre-feet; WSP 73-516371.3 Mesa = 67,958 acre-feet; WSP 73-516371.4 Chandler = 40,350 acre-feet  
<sup>7</sup> Salt & Verde River Water for Annual Storage & Recovery WSP 73-548928 Chandler = 84,570 acre-feet; WSP 73-548929 SRP = 200,000 acre-feet; 73-550663 Mesa = 85,869 acre-feet; and WSP 73-547504 for 200,00 acre-feet of Displaced Verde River water.  
<sup>8</sup> Volume includes permit for use of Plan 6 Water  
<sup>9</sup> Volume includes permit for use of Salt/Verde River Water for Annual Storage and Recovery.  
 \* AWBA Storage

AWBA-Storage Facility Inventory Update

**TABLE 4A - PHOENIX AMA Underground Storage Facilities**

MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
T4N, R4E	71-560648.0002 (02/19/04 to 08/04/18)	City of Scottsdale	<u>Water Campus</u> : Storage of micro-filtered effluent and <b>CAP</b> water via vadose zone recharge wells and 1 ASR well in the north Scottsdale area.	Phase I 16,800 through 12/31/2010 Phase II 33,400 from 01/01/11 to 08/04/18)	73-560649:Scottsdale	Phase I 16,800 through 12/31/2010 Phase II 33,400 from 01/01/11 to 08/04/18)	Permit modified to include additional recharge wells and increase permit volume. Initial permit issued 1998
T1S, R6E	71-564416.0000 (12/03/98 to 11/30/18)	Town of Gilbert	<u>Riparian Preserve at Water Ranch</u> : Recharge basin/wildlife system for storage of <b>CAP water</b> , <b>Salt/Verde water</b> , and effluent. Located in the East Salt River Valley (ESRV) subbasin.	4,369	73-564416: Gilbert	4,369	Gilbert may apply to increase permit volume. Increased storage would be primarily for effluent.
T2N, R1W	71-565257.0001 (10/19/05 to 12/31/23)	City of Avondale	<u>Avondale Wetlands</u> : Wetland treatment and recharge project, located adjacent to the Agua Fria River just north of McDowell Road, for storage of <b>CAP and SRP</b> waters.	15,000	73-565257.0001: Avondale	15,000	Facility was modified to increase the permit volume from 10,000 to 15,000AF/yr and extend the duration 5 years. May be modified in the future to include effluent.
T6N, R2E	71-566962.0006 (11/15/05 to 02/12/08)	Arizona American Water Co.	<u>Anthem Recharge Facility</u> : Recharge of <b>CAP</b> and effluent via recharge trenches. Located in the far northern portion of the AMA at the Anthem development.	10,000	73-566962.0205:AAWC	10,000	The facility was initially permitted in 1999 for 2-years to test the trench recharge methodology.
T3N, R5E	71-574911.0001 (08/15/01 to 08/17/20)	City of Scottsdale	<u>West World Golf Course</u> : Annual recharge of <b>CAP</b> via vadose zone recharge wells. Located in North Scottsdale.	1,000	73-574911: Scottsdale	1,000	
T3N, R5W	71-578112.0000 (05/11/01 to 05/31/21)	West Maricopa Combine Inc. (#2)	<u>West Maricopa Combine, Inc (MANAGED)</u> : Annual recharge of <b>CAP</b> within the Hassayampa River channel in the far western portion of the AMA.	25,000	73-578112.0100:Water Utility of Greater Buckeye 73-578112.0200: Water Utility of Greater Tonopah 73-578112.0300: AWBA	43 64 25,000	Facility is not yet operational. First year of operation will help show long-term feasibility.
T6N, R5E	71-583022.0002 (06/13/05 to 01/31/22)	City of Scottsdale	<u>North Scottsdale Aquifer Storage &amp; Recovery Project</u> : Annual recharge of <b>CAP</b> via vadose zone wells. Located in the Carefree subbasin.	3,642	73-583022.0200: CAWCD 73-583022.0300: Scottsdale	3,642 3,642	Initially permitted in 2002. Used primarily for CAGR replenishment to provide physical availability for AWS.
T2N, R1E	71-588558.0002 (12/22/05 to 12/22/25)	Salt River Project	<u>New River Agua Fria Underground Storage Project</u> : Annual recharge of <b>CAP</b> , surface water, and effluent via basins. Storage shall not exceed 1,250,000 AF over 20 years.	30,000 1 <sup>st</sup> 2 yrs 50,000 yrs 3-5 75,000 yrs 6-20	73-588558.0001: SRP 73-588558.0200: Chandler 73-588558.0300: Glendale 73-588558.0400: Avondale	see facility " " (3,000 yr 1-2, 4,000 yr 3-5, 7,500 yr 6-20)	Facility is under construction.
T5N, R2E	71-591936.0000 (02/05/04 to 02/28/12)	City of Phoenix	<u>Tramanto Recharge Facility</u> : Annual recharge of <b>CAP</b> water via recharge wells.	1,935	73-591936.0000: Phoenix	1,935	
T3N, R7W	71-593305.0000 (09/01/05 to 09/01/25)	CAWCD	<u>Tonopah Desert Recharge Project</u> : Annual recharge of <b>CAP</b> water via basins. Located near the western border of the Phoenix AMA.	150,000 1 <sup>st</sup> 4 years 87,500 yrs 5-20	73-593305.0000: CAWCD 73-593305.0200: Gilbert 73-593305.0300: AWBA 73-593305.0400: Chandler 73-593305.0500: Del Webb Corp.	see facility 10,000 see facility 30,000 10,000	Recharge commenced January 2006.
T2S, R6E	71-595198.0000 (11/30/04 to 11/30/24)	Town of Gilbert	<u>South Recharge Facility</u> : Annual recharge of <b>CAP</b> and effluent via basins.	10,098	73-595198.0000: Gilbert	10,098	
T5N, R2E	71-595208.0000 (12/12/05 to 12/12/25)	City of Phoenix	<u>Phoenix North Gateway</u> : Annual recharge of <b>CAP</b> water via recharge wells.	1,742	73-595208.0000: Phoenix	1,742	

AWBA-Storage Facility Inventory Update

**TABLE 4A - PHOENIX AMA Underground Storage Facilities**

MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
T3N, R5W	71-550601.0000 (06/13/03 To 06/30/23)	West Maricopa Combine Inc. (#1)	West Maricopa Combine, #1 (MANAGED): Annual recharge Of CAP water within the Hassayampa River channel in the far western portion of the AMA.	25,000	none		
<b>PENDING APPLICATIONS FOR CAP WATER FACILITIES</b>							
	71-591939.0000	Carefree Water Co.	<u>Recharge Facility at Desert Forest Golf Club</u> : Recharge of <b>CAP</b> water via wells.		Carefree Water Co.		This application has not had activity in the last 2 years, and may be canceled.
	71-207702.0000	CAWCD	<u>Superstition Mtn. Recharge Project</u> : Recharge of <b>CAP</b> water via basins.	56,500	CAWCD		
<b>EFFLUENT</b>							
T1N, R5E	71-518105.0001 (08/07/01 to 03/31/08)	City of Mesa	<u>NWWRP</u> : Recharge of <b>effluent</b> at the Mesa NW Water Reclamation Plant through recharge basins located adjacent to the Salt River, downstream from GRUSP.	8,963	73-518105: Mesa	8,963	Small amount of recharge < 4mgd. This site is not expected to recharge anymore than this long-term. 08/01 permit modified for new basin design and how flows will be metered in each Phase.
T1N, R5E	71-563885.0002 (04/26/02 to 05/31/03) <b>EXPIRED</b>	City of Mesa	<u>Salt River Pima Maricopa Indian Community</u> : Annual recharge of <b>effluent</b> from the City of Mesa Northwest Wastewater Reclamation Plant via basins.	8,962	73-563885: Mesa	8,962	Poor infiltration rates and rising water levels (alert level exceedences limit storage capacity).
T2S, R5E	71-560347.0004 (05/11/04 to 05/06/23)	City of Chandler	<u>Tumbleweed Regional Park</u> : Annual recharge of <b>effluent</b> via 30 vadose zone recharge wells and ASR wells. Located in southern portion of the ESRV subbasin.	11,200 not to exceed 100,000	73-560347: Chandler	11,200 not to exceed 100,000	Initially permitted in 1997 for 5,600 AF/yr via 17 recharge wells. Vadose zone wells were not performing as well as expected. Permit was modified to add additional wells, increase the volume, and extend the duration by 5 yrs.
T1S, R5E	71-520379.0000 (01/01/95 to 10/18/13)	Town of Gilbert	<u>Riparian Preserve at Neely Ranch</u> : Recharge of <b>effluent</b> from the Gilbert Wastewater Treatment Plant through basins and an injection well. Located in southern portion of the ESRV subbasin.	3,314	73-520379: Gilbert	3,314	This facility will be phased out due to PCE contamination at a nearby property. Volume will be transferred to 71-564416 and to new projects.
T4N, R1E	71-534362.0003 (09/16/04 to 04/14/20)	AZ. – American Water Co.	<u>Sun City West Wastewater Treatment Plant</u> : Recharge of <b>effluent</b> into infiltration basins located adjacent to the Agua Fria River in the WSRV subbasin.	5,600	73-534362.0100: AAWC – Sun City 73-534362.0200: AAWC –Agua Fria 73-534362.0300:AAWC –Sun City West	3,041.50 5,600 3,041.50	Initially permitted in 1993 for 3,042.5 AF/yr. Conveyed from Del Webb. Permit was modified to increase the annual volume.
T2S, R5E	71-541455.0001 (11/21/00 to 03/02/14)	City of Chandler	<u>Chandler Intel Facility</u> : Recharge of <b>effluent</b> from the Intel plant through injection wells. Located in southern portion of the ESRV subbasin.	3,100	73-541455: Chandler	3,100	Located in South Chandler, wells recharging into middle alluvial unit.

AWBA-Storage Facility Inventory Update

**TABLE 4A - PHOENIX AMA Underground Storage Facilities**

MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
T2S, R5E	71-546845.0001 (01/24/03 to 05/02/16)	Ocotillo Mgmt. Group	<u>Ocotillo Springs</u> : Recharge of <b>effluent</b> through overflow vadose zone wells. Located in southern portion of the ESRV subbasin.	500	73-546844: Ocotillo	500	Initially permitted in 1996. Low recharge rates due to clogging of shallow vadose zone wells. Permit was modified to reduce annual volume from 2,500 to 500 AF/yr.
T4N, R1E	71-552479.0002 (12/29/04 to 12/31/24)	City of Peoria	<u>Beardsley Road Wastewater Treatment Plant</u> : Recharge of <b>effluent</b> annually through infiltration basins. Located at Peoria's WWTP at Beardsley Rd. and 111 <sup>th</sup> Ave. (WSRV subbasin).	<b>Phase I</b> , 1 <sup>st</sup> yr 2,240 <b>Phase II</b> , 5yrs 4,480 <b>Phase III</b> , 3 yrs 6,720 <b>Phase IV</b> , 7yrs 13,441 <b>Phase V</b> 4 yrs 17,920 not to exceed 210,580	73-552498: Peoria	Same as facility	Initially permitted in 1996. Permit was modified to add additional basins, increase the volume and extend the duration by 8 years.
T3N, R1W	71-562521.0002 (07/16/03 to 11/30/21)	City of Surprise	<u>City of Surprise Waste Water Treatment Facility</u> : Annual recharge of <b>effluent</b> through infiltration basins. (WSRV subbasin).	8,066	73-562521.0002: Surprise	8,066	
T2S, R5E	71-560427.0000 (05/19/00 to 12/31/17)	Pima Utilities	<u>Sun Lakes</u> : Annual recharge of <b>effluent</b> through 4 Annual Storage & Recovery wells. Located in the southern portion of the ESRV subbasin.	628	73-560428: Pima Utilities	628	Initially permitted in 1997. Permit was modified for clerical error.
T1S, R4E	71-563943.0001 (01/28/00 to 01/31/20)	City of Tempe	<u>Tempe Ken MacDonald Golf Course Recharge Facility</u> : Annual recharge of <b>effluent</b> via 6 vadose zone recharge wells. (ESRV subbasin).	3,400	73-563943: Tempe	3,400	The City of Tempe has ceased operation of the USF for 5 years.
T1N, R1W	71-566367.0000 (08/10/98 to 08/10/18)	City of Goodyear	<u>Goodyear Soil Aquifer Treatment Facility</u> : Recharge of <b>effluent</b> from the Goodyear WWTP via infiltration basins (WSRV subbasin).	3,360	73-566367: Goodyear	3,360	Facility is likely to be withdrawn because the area will be developed. Goodyear has indicated they may want to apply to increase the permit volume for the time remaining.
T2N, R1W	71-586730.0000 (03/12/03 to 03/31/23)	City of Glendale	<u>Glendale Aquifer Recharge Facility</u> : Annual recharge of <b>effluent</b> over a two-year period via basins/trenches/wells (WSRV subbasin).	7,841	73-571065: Glendale	7,841	Initially permitted as a pilot project for 4,816 Af/yr. Water level rises must stay below landfill and sand & gravel operation.
T3N, R6E	71-591940.0000 (08/10/04 to 08/10/24)	Fountain Hills Sanitary District	<u>Fountain Hills Sanitary District</u> : Annual recharge of <b>effluent</b> via ASR wells. Located in the Fountain Hill subbasin in the northeastern portion of the AMA.	2,240.6	73-575984:FHSD	2,240.6	Initially permitted as a pilot project for 1,904 AF/yr. Direct injection into aquifer.
T4N, R1E	71-591934.0000 (01/23/04 to 01/31/24)	City of Glendale	<u>City of Glendale/Arrowhead Ranch Recharge Facility</u> : Annual recharge of <b>effluent</b> via vadose zone recharge and ASR wells. (WSRV subbasin).	2,300 with maximum storage not to exceed 124,226 AF in storage at any one time.	73-581370.0000: Glendale	2,300	Initially permitted as pilot project for 4,000 AF. Wells are performing according to design. Additional wells were added for the full-scale project.

AWBA-Storage Facility Inventory Update

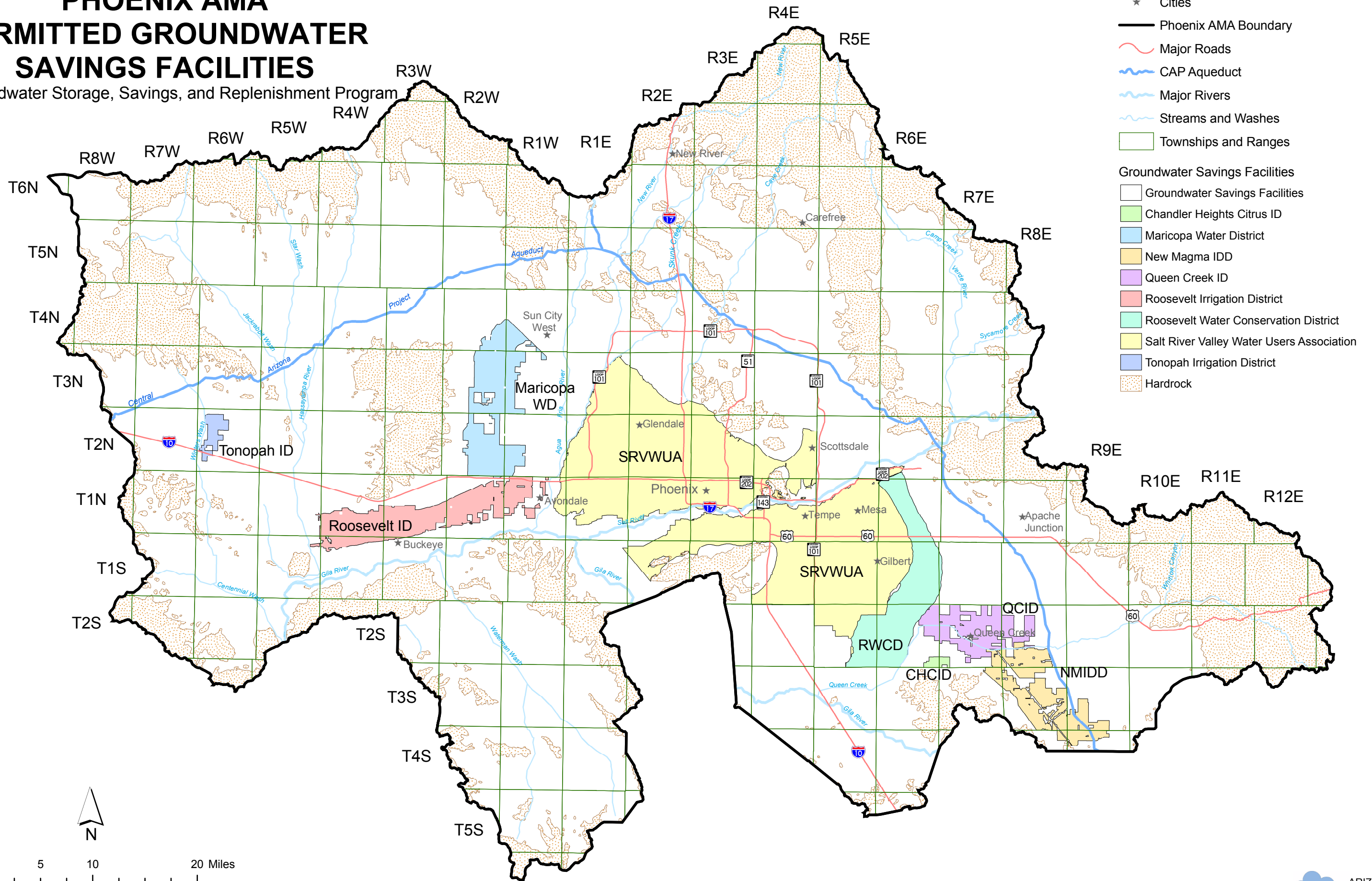
**TABLE 4A - PHOENIX AMA Underground Storage Facilities**

MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
T2S, R5E	71-583023.0000 (09/17/01 to 09/30/21)	City of Chandler (Ocotillo)	<u>Ocotillo Recharge and Recovery Facility</u> : Annual recharge of <b>effluent</b> from the Ocotillo WWTP via wells. (ESRV subbasin).	1,300	73-583023.0000: Chandler	1,300	Testing showed favorable recharge rates.
T1S, R8E	71-584469.0000 (03/07/05 to 03/07/25)	Superstition Mtns. Community Fac. No. 1	<u>Superstition Mtns. Community Facilities District #1 USE</u> : Annual recharge of <b>effluent</b> via basins and vadose zone wells. (WSRV subbasin).	2,352	73-584469.0000: SMCFD. No. 1	2,352	
T2S, R6E	71-588551.0000 (11/24/03 to 11/30/23)	City of Chandler	<u>Chandler Heights Recharge Project</u> : Annual recharge of <b>effluent</b> via infiltration basins. (WSRV subbasin).	2,240	73-588551.0000: Chandler	2,240	
T1S, R9E	71-591929.0000 (04/14/03 to 04/30/23)	Gold Canyon Sewer Co.	<u>Gold Canyon Wastewater Treatment Plant</u> : Annual recharge of <b>effluent</b> via infiltration basins. (WSRV subbasin).	1,120	73-591929.0000: Gold Canyon Sewer Co.	1,120	Effluent not delivered to the golf course is recharged. Company may sell credits earned.
T1S, R6E	71-591935.0000 (11/30/04 to 11/30/24)	Town of Gilbert	<u>Gilbert Municipal Center</u> : Annual recharge of <b>effluent</b> via vadose zone wells. (WSRV subbasin).	2,240	73-591935.0000: Gilbert	2,240	
T4N, R3E	71-595199.0002 (12/12/05 to 12/12/25)	City of Phoenix	<u>Cave Creek Wastewater Reclamation Plant Recharge Facility</u> : Annual recharge of <b>effluent</b> via vadose wells. (ESRV subbasin).	8,961	73-595199.0000: Phoenix	8,961	
T3N, R1W	71-595207.0000 (04/28/05 to 04/28/10)	City of El Mirage	<u>El Mirage Managed USE</u> : Annual recharge of <b>effluent</b> in the Agua Fria channel. (WSRV subbasin).	2,016	73-595199.0000: El Mirage	2,016	
T2N, R5W	71-205381.0000 (12/02/05 to 12/02/25)	Town of Buckeye	<u>Tartesso Water Reclamation Facility</u> : Annual recharge of <b>effluent</b> via infiltration basins. Located in the Tartesso development. (Hassayampa subbasin).	Up to 20,163	73-205381: Town of Buckeye	Up to 20,163	Recharge is limited to 50 % of the volume of groundwater pumped from wells during a year that are listed in the permit. These wells serve the communities in the Tartesso area.
<b>PENDING APPLICATIONS FOR EFFLUENT FACILITIES</b>							
	71-205388.0000	Lake Pleasant Sewer Co.	<u>Estates at Lakeside USE</u> : Annual recharge of <b>effluent</b> via 2 injection wells. Located in the Lake Pleasant subbasin.		73-205388.0000: Lake Pleasant Sewer Co.		
	71-207703.0000	Johnson Utilities LLC	<u>Pecan Recharge Facility</u> : Annual recharge of <b>effluent</b> via vadose zone and/or injection wells. (ESRV subbasin).		73-207703.0000: Johnson Utilities		
	71-207708.0000	Arizona American Water Co.- (Agua Fria)	<u>Verrado</u> : Annual recharge of <b>effluent</b> via injection wells. Located on the eastern side of the White Tank Mtns. (WSRV subbasin).		73-207708.0000: AZ American- (Agua Fria)		
	71-207709.0000	Johnson Utilities LLC	<u>Santan Recharge Facility</u> : Annual recharge of <b>effluent</b> via vadose zone recharge wells. (ESRV subbasin)		73-207709.0000: Johnson Utilities		

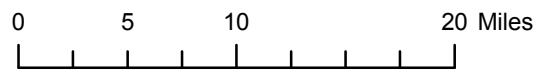


# PHOENIX AMA PERMITTED GROUNDWATER SAVINGS FACILITIES

Groundwater Storage, Savings, and Replenishment Program



- ★ Cities
  - Phoenix AMA Boundary
  - Major Roads
  - CAP Aqueduct
  - Major Rivers
  - Streams and Washes
  - Townships and Ranges
- Groundwater Savings Facilities
- Groundwater Savings Facilities
  - Chandler Heights Citrus ID
  - Maricopa Water District
  - New Magma IDD
  - Queen Creek ID
  - Roosevelt Irrigation District
  - Roosevelt Water Conservation District
  - Salt River Valley Water Users Association
  - Tonopah Irrigation District
  - Hardrock



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AWBA-Storage Facility Inventory Update

**TABLE 4B - PHOENIX AMA Groundwater Savings Facilities**

FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>CAP WATER</b>						
72-534439.0002 (03/10/98 to 12/31/06)	Tonopah Irrigation District	<u>Tonopah Irrigation District</u> : Indirect recharge of <b>CAP</b> water. Located in the Hassayampa subbasin in the far western portion of the AMA.	15,000	73-534439: CAWCD 73-534439.1: Goodyear <b>73-534439.0200: AWBA</b>	15,000 15,000 <b>15,000</b>	Applied for renewal.
72-534550.0003 (12/27/05 to 12/27/10)	Queen Creek Irrigation District	<u>Queen Creek ID</u> : Indirect recharge of <b>CAP</b> water. (ESRV subbasin)	28,000	<b>73-534550.1000: AWBA</b> 73-534550.0300: Gilbert 73-534550.0400: CAWCD	<b>28,000</b> 7,000 28,000	Renewed Permit. Original permit issued 1999.
72-534753.0000 (04/21/92 to 12/31/95)	CAWCD	<u>Chandler Heights Citrus Irrigation District</u> : Indirect recharge of up to 3,000 acre-feet annually of <b>CAP</b> water. (ESRV subbasin)	3,000	73-534753: CAWCD <b>73-534753.1000: AWBA</b>	3,000 <b>3,000</b>	In-process of extension
72-534888.0001 (02/17/04 to 12/31/07)	New Magma Irrigation & Drainage District	<u>New Magma Irrigation District</u> : Indirect recharge of <b>CAP</b> water. (ESRV subbasin)	54,000	73-534888.0100: CAWCD 73-534888.0200 :Tempe <b>73-534888.0300: AWBA</b> 73-534888.0400: WUCFD 73-534888.0500: Chandler 73-534888.0600: Resolution Copper Mining, LLC	40,000 54,000 <b>54,000</b> 20,000 20,000 20,000	Initially permitted in 1997.
72-545695.0003 (03/26/04 to 12/31/10)	RWCD	<u>Roosevelt Water Conservation District</u> : Indirect recharge of <b>CAP</b> water and effluent. Plan of operation modified to include <b>Plan 6 water</b> . (ESRV subbasin)	105,000	73-545695.1000: CAWCD 73-545695.2000: Chandler 73-545695.3002: Mesa <b>73-545695.6000: AWBA</b> 73-545695.7000: WUCFD 73-545695.8000 : Phelps Dodge 73-545695.0900: Active Resource Mgmt	50,000 40,000 100,000 <b>100,000</b> 20,000 14,00 50,000	Initially permitted in 1995.
72-553133.0001 (06/01/96 to 12/31/05)	Salt River Project	Salt River Project GSF: Indirect recharge of <b>CAP</b> water within the Salt River Project boundaries. Located in the central portion of the AMA in both the ESRV and WSRV subbasins.	200,000	73-555520: Glendale 73-557419: CAWCD 73-557648: Del Webb 73-553133.1000: Scottsdale 73-553133.2000: Peoria 73-553133.3000: Tempe 73-553133.4000: Chandler 73-553133.5000: Mesa 73-553133.6000: Phoenix <b>73-533133.7000:AWBA</b> 73-533133.8000:CFV 73-533133.0900: Gilbert	20,000 200,000 50,000 20,000 40,000 25,000 20,000 30,000 100,000 <b>100,000</b> 40,000 50,000	Applied for renewal for 100,000 and the addition of Plan 6 water (New Conservation space water); currently operating under extension of existing license. Water storage permit holders have also applied for renewals.
72-558246.0002 (02/14/06 to 06/28/09)	Maricopa Water District	<u>MWD</u> : Indirect recharge of <b>CAP</b> water within the MWD boundaries. (WSRV subbasin)	40,000	<b>73-558246.0200: AWBA</b> 73-558246.0301 AAWC Sun City 73-558246.0401 AAWC Sun City West 73-558246.0501: AAWC Agua Fria 73-558246.0601: Goodyear 73-558246.0701: Del Webb Corporation 73-558246.0800: CAWCD (pending)	<b>40,000</b> 4,189 2,372 11,093 10,000 10,000	Initially permitted in 1998. Plan of Operation was recently modified to account for surface water supplies made available through unforeseen precipitation events.
<b>EFFLUENT</b>						
72-534978.0000 (08/20/92 to 12/31/22)	LPSCO	<u>LPSCO GSF</u> : Indirect recharge of <b>effluent</b> at Suncor Farms. (WSRV subbasin)	840	73-534978: LPSCO	840	GSF inactive, farms developed.
72-571066.0000 (06/14/99 to 06/30/04) <b>EXPIRED</b>	Robson Comm.	<u>Robson GSF</u> : Indirect recharge of <b>effluent</b> for five years. (WSRV subbasin)	110.40	73-571066: PebbleCreek	110.40	PebbleCreek was required to recover 50% of effluent stored each year.



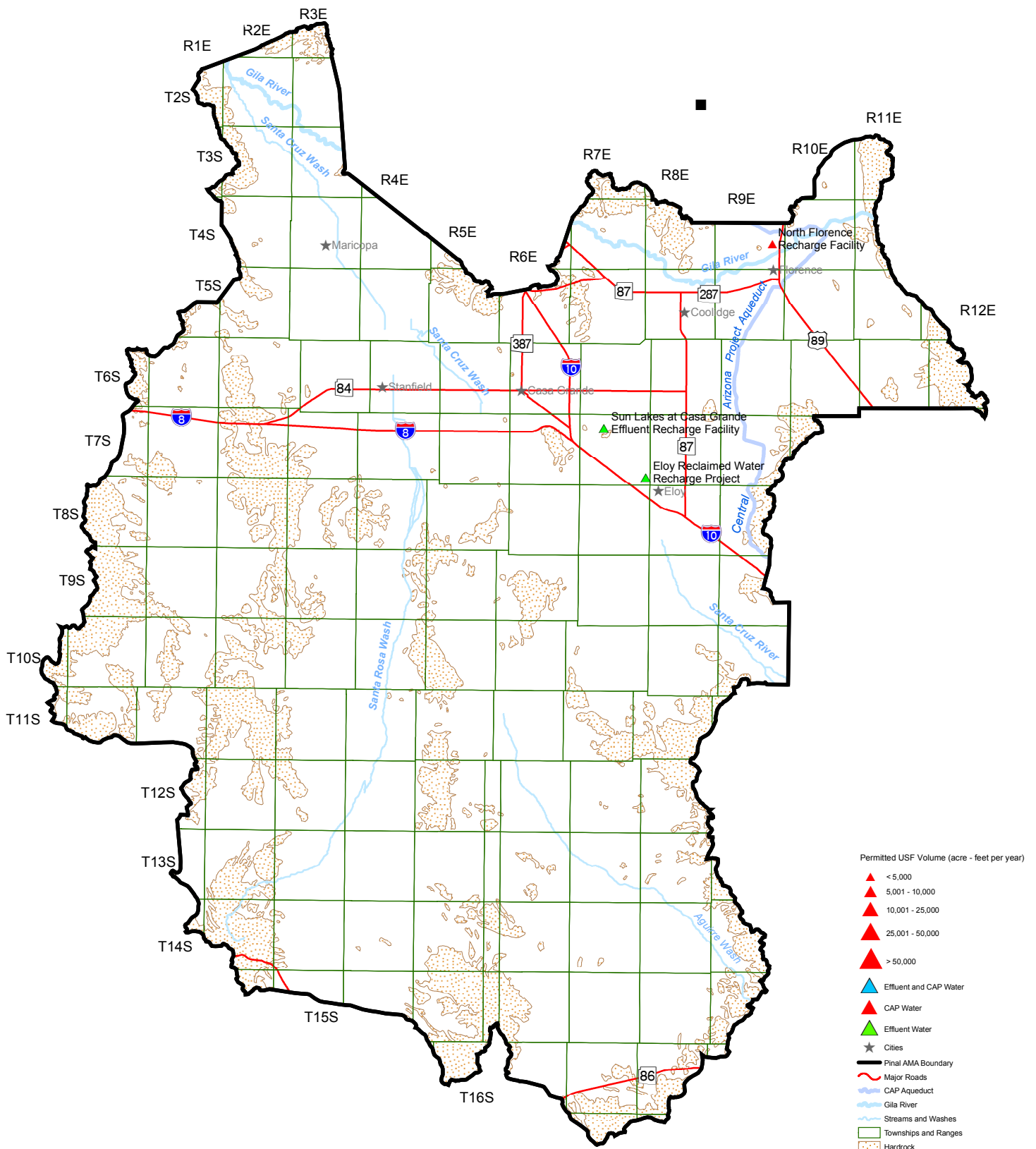
AWBA-Storage Facility Inventory Update

**TABLE 4B - PHOENIX AMA Groundwater Savings Facilities**

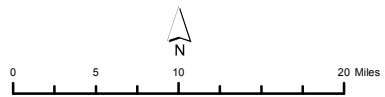
	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
	72-572386.0001 (01/21/04 to 12/31/08)	Roosevelt Irrigation District	<u>RID</u> : Indirect recharge of <b>effluent</b> water. (southwestern portion of the WSRV subbasin)	30,000 or 60,000 in years when RID is unable to lease Salt River Project wells.	73-572386.0001: Phoenix	Same as facility	Initially permitted in 2000. Permit was modified to increase the vol. to 60,000 for those years in which the RID/SRP water exchange is not in effect.
	72-545695.0003 (03/26/04 to 12/31/10)	RWCD	<u>Roosevelt Water Conservation District</u> : Indirect recharge of CAP water and <b>effluent</b> . (ESRV subbasin)	105,000	73-547123.0000: Chandler 73-545695.4000: Mesa	3,100 8,9000	Permit was modified to increase the annual volume by 5,000 af/yr.
<b>PENDING APPLICATIONS FOR EFFLUENT GROUNDWATER SAVINGS FACILITIES</b>							
	72-202387.0000	SD Farms	<u>SD Farms</u> : Indirect recharge of <b>effluent</b> from City of Surprise Treatment plant. (WSRV subbasin)		73-202387.0000: Surprise		

# PINAL AMA UNDERGROUND STORAGE FACILITIES

Underground Water Storage, Savings, and Replenishment Program



- Permitted USF Volume (acre - feet per year)
- ▲ < 5,000
  - ▲ 5,001 - 10,000
  - ▲ 10,001 - 25,000
  - ▲ 25,001 - 50,000
  - ▲ > 50,000
  - ▲ Effluent and CAP Water
  - ▲ CAP Water
  - ▲ Effluent Water
  - ★ Cities
  - Pinaleño AMA Boundary
  - Major Roads
  - CAP Aqueduct
  - Gila River
  - Streams and Washes
  - Townships and Ranges
  - Hardrock



AWBA-Storage Facility Inventory Update

TABLE 4C - PINAL AMA Underground Storage Facilities							
MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>CAP WATER</b>							
T6S R7E	71-588559.0000 (08/30/02 to 08/30/04) <b>EXPIRED</b>	Pinal Co. Aug. Authority	<u>Hohokam Recharge Facility #1</u> : (PILOT PROJECT) Recharge of <b>CAP</b> during a two year period	850	73-588559.0000: PCWAA	850	Recharging into multi-use irrigation/recharge basin. Only 500 AFA are available by contract.
<b>EFFLUENT</b>							
T4S R9E	71-519876.0001 (12/11/02 to 12/31/12)	Town of Florence	<u>North Florence Recharge Facility</u> : Annual recharge of <b>effluent</b> via infiltration basins.	135	73-519876.0000: Florence	135	Initial permit issued 1995.
T7S R7E	71-591932.0000 (02/03/04 to 02/03/24)	City of Eloy	<u>Eloy Reclaimed Water Recharge Project</u> : Annual recharge of <b>effluent</b> via infiltration basins.	2,240	73-591932.0000: Eloy	2,240	
T7S R7E	71-591938.0000 (12/10/03 to 12/31/23)	Picacho Sewer Co.	<u>Sun Lakes at Casa Grande</u> : Annual recharge 340.4 acre-feet <b>effluent</b> water via basins and vadose zone wells.	340.4	73-591938: Sun Lakes	340.4	
<b>PENDING APPLICATIONS FOR EFFLUENT FACILITIES</b>							
	71-209000.0000	Arizona City Sanitary District	Annual recharge of <b>effluent</b> via basins.		73-209000.0000: AZ City Sanitary District		



AWBA-Storage Facility Inventory Update

TABLE 4D - PINAL AMA Groundwater Savings Facilities							
	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>CAP</b>							
	72-531381.0003 (12/31/04 to 12/31/09)	Maricopa Stanfield I.D.D.	Indirect recharge of <b>CAP</b> water at MSIDD.	120,000	73-531381.1000: AWBA 73-531381.2000: PCWAA 73-531381.0300: CAWCD (pending)	120,000 120,000 120,000	GSF permit was renewed. CAWCD filed a new WS application for this GSF.
	72-531382.0002 (01/23/04 to 12/31/07)	CAIDD	Indirect recharge of <b>CAP</b> water annually at Central Arizona Irrigation and Drainage District.	110,000	73-531382:CAWCD 73-531382.1000:AWBA 73-531382.2000 Pinal County Water Augmentation Authority	110,000 110,000 25,000	Initially permitted in 1997.
	72-534489.0002 (01/12/04 to 12/31/06)	Hohokam ID	Indirect recharge of <b>CAP</b> water annually at Hohokam Irrigation District.	55,000	73-534489: CAWCD 73-552883: Eloy 73-534489.1000: AWBA 73-534489.2000: PCWAA	40,000 27,033 55,000 25,000	Initially permitted in 1997.





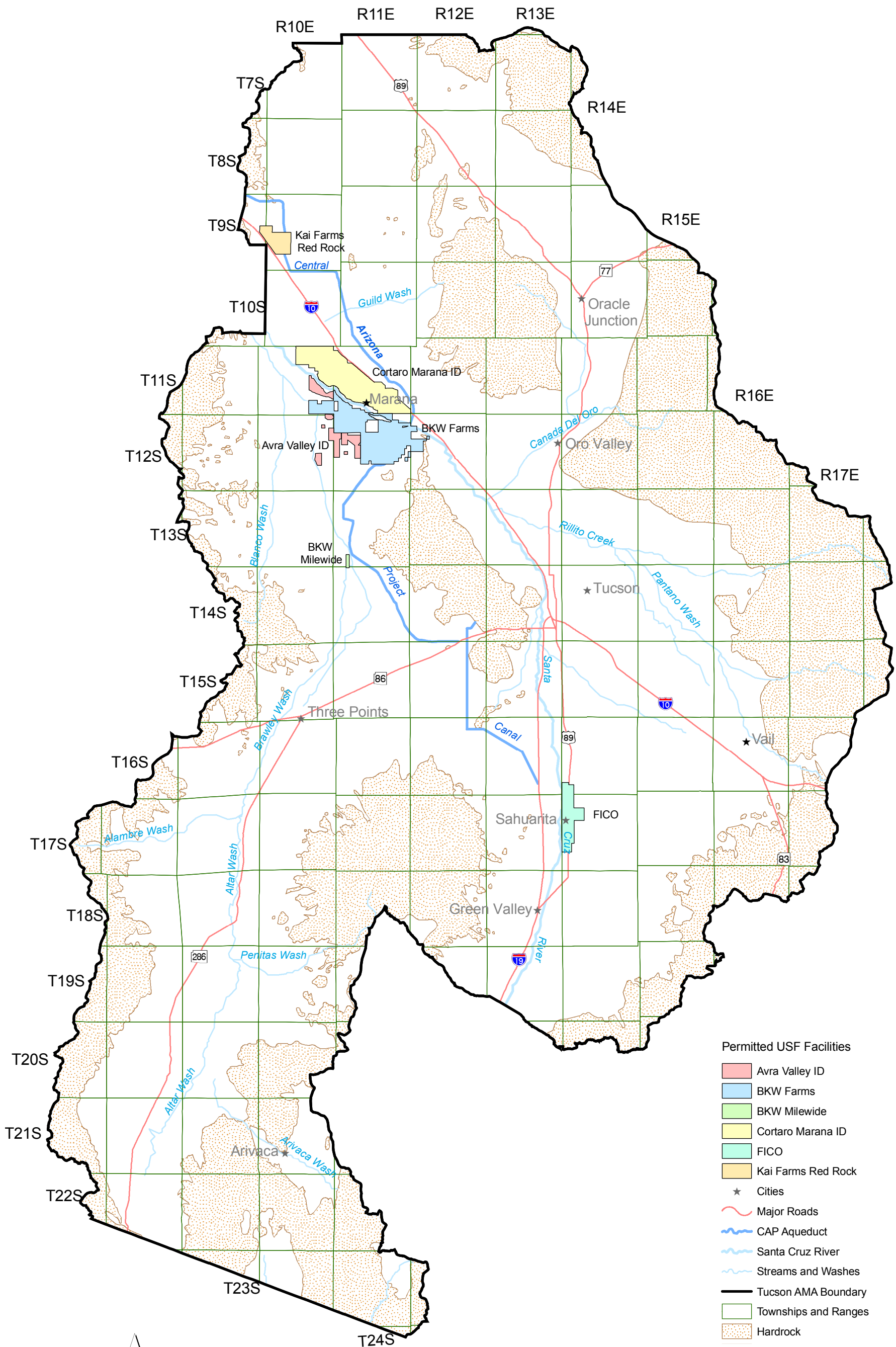
AWBA-Storage Facility Inventory Update

**TABLE 4E - TUCSON AMA Underground Storage Facilities**

MAP LOC.	FACILITY PERMIT No.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>CAP WATER</b>							
T12S R11E	71-561366.0002 (11/28/03 to 02/28/19)	CAWCD	<u>Lower Santa Cruz Replenishment Project</u> : STATE DEMONSTRATION PROJECT. Annual recharge of <b>CAP</b> via basins.	50,000, not to exceed 600,000 in storage	73-561366.0000: CAWCD <b>73-561366.0201: AWBA</b> 73-561366.0300: MDWID 73-561366.0400: Robson Communities 73-561366.05: Town of Marana	30,000 <b>50,000</b> 15,000 4,000 30,000	Initially permitted in 1999. Modified to increase vol. From 30,000 Af/Yr. High infiltration rates. High water level response in monitoring well.
T13S R11E	71-578806.0001 (01/10/05 to 10/01/25)	City of Tucson /Tucson Water	<u>CAVSARP</u> : Annual recharge of <b>CAP</b> via basins	80,000 not to exceed 1.2 M in storage	73-578806.0101:Tucson <b>73-578806.0201:AWBA</b>	80,000 <b>80,000</b>	Initially permitted as full-scale in 2001. Increased permit volume.
T12S R11E	71-564896.0000 (03/27/98 to 03/27/18)	CAWCD	<u>Avra Valley Recharge Project</u> : Annual recharge of <b>CAP</b> via basins.	11,000	73-564896.0000: CAWCD 73-564896.0100: MDWID <b>73-564896.0200: AWBA</b> 73-564896.0300: Town of Marana	11,000 11,000 <b>11,000</b> 11,000	Varied infiltration rates. High water level rise in monitor well. STATE DEMONSTRATION PROJECT.
T16S R14E	71-577501.0001 (05/24/04 to 09/06/20)	CAWCD	<u>Pima Mine Road Full-Scale Recharge Project</u> : Annual recharge of <b>CAP</b> via infiltration basins.	30,000 not to exceed 500,000 in storage	73-577501.0100: CAWCD 73-577501.0200: Tucson <b>73-577501.0300: AWBA</b> 73-577501.0401: GVWC	30,000 30,000 <b>30,000</b> 1,900	STATE DEMONSTRATION PROJECT.
<b>EFFLUENT</b>							
T13S R13E	71-520083.0000 (07/07/97 to 10/25/08)	City of Tucson, Tucson Water	<u>Sweetwater</u> : Recharge of Tucson <b>effluent</b> via infiltration basins.	6,500	73-520083: Tucson Water	6,500	"Put and Take" USF is operating as expected.
T13S R13E	71-545944.0001 (5/05/00 to 5/05/20)	City of Tucson, Tucson Water & U.S. BOR	<u>Santa Cruz Managed Recharge Project</u> : Recharge of <b>effluent</b> via managed streambed in the Santa Cruz River.	9,307	73-545943.0100:Tucson 73-545943.0200:Bureau of Reclamation	9,307 9,307	Initially permitted in 1999.
T11S R11E	71-563876.0004 (09/26/05 to 09/26/07)	Pima County Flood Control District	<u>Marana High Plains Effluent Recharge Project</u> : Annual recharge of <b>surface water</b> .	600	73-563876.0102: CMID	600	Initially permitted in 2000.
T18S R13E	71-581379.0001 (12/17/03 to 04/02/21)	Robson Ranch Quail Creek	<u>Robson Ranch Quail Creek</u> : Annual recharge of <b>effluent</b> via basins	2,240.3	73-581379:Robson Ranch Quail Creek	2,240.3	Initially permitted in 2001.
T11S R10E To T12S R12E	71-591928.0000 (11/04/03 to 11/30/23)	Tucson/ Pima County WWM/Oro Valley/ Marana/ Metropolitan DWID/Cortaro-Marana ID/Cortaro Water Users Assn./Avra Valley IDD/ Flowing Wells ID	<u>Lower Santa Cruz River Managed Recharge Project</u> : Annual recharge of <b>effluent</b> via managed streambed in Santa Cruz River from Ina Rd. to Trico Rd.	43,000, not to exceed 680,000 AF total	73-591928.0000: Tucson 73-591928.0200: MDWID 73-591928.0300: Oro Valley 73-591928.0400: Pima County WWM 73-591928.0500: USBOR	43,000 4,000 2,589 5,980 43,000	
<b>PENDING APPLICATIONS FOR EFFLUENT FACILITIES</b>							
T16S R13E	71-595209.0000	Town of Sahuarita	<u>Town of Sahuarita USF</u> : Recharge of <b>effluent</b> from the Sahuarita WWTP via basins				

# TUCSON AMA PERMITTED GROUNDWATER SAVINGS FACILITIES

Groundwater Storage, Savings, and Replenishment Program



**Permitted USF Facilities**

- Avra Valley ID
- BKW Farms
- BKW Milewide
- Cortaro Marana ID
- FICO
- Kai Farms Red Rock
- ★ Cities
- Major Roads
- CAP Aqueduct
- Santa Cruz River
- Streams and Washes
- Tucson AMA Boundary
- Townships and Ranges
- Hardrock



0 5 10 20 Miles

City of Tucson Water Resources Department



AWBA-Storage Facility Inventory Update

TABLE 4F - TUCSON AMA Groundwater Savings Facilities							
	PERMIT NO. FACILITY TYPE (DURATION)	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>CAP WATER</b>							
	72-538100.0004 (12/17/04 to 04/02/08)	Cortaro Marana Irrigation District	Indirect recharge of <b>CAP</b> water at the Cortaro-Marana Irrigation District.	20,000	73-538100.0100: STWC 73-538100.0300: MDWID 73-538100.0400: Marana 73-538100.0500: Flowing Wells	20,000 10,000 5,000  4,354	Initially permitted in 1998.
	72-538133.0002 (01/14/04 to 01/31/09)	CAWCD	Indirect recharge of <b>CAP</b> water at BKW Farms	16,614.6	73-538133.0300: Tucson <b>73-538133.0400: AWBA</b> 73-538133.0500: CAWCD 73-555750.0001:MDWID	16,614.6 <b>16,614.6</b> 16,614.6 16,614.6	Initially permitted in 1999.
	72-558092.0001 (01/14/04 to 12/31/06)	Herb Kai	<u>Kai Farms-Red Rock in Picacho</u> : Indirect recharge of <b>CAP</b> water.	11,231	73-558092.0100 : MDWID 73-558092.0200: CAWCD 73-558092.0300: STWC 73-558092.0400: Oro 73-558092.0600: Tucson 73-558092.0701: Vail WC <b>73-558092.0800: AWBA</b>	11,231 11,231 11,231 6,000 11,231 11,231 <b>11,231</b>	Initially permitted in 1996.
	72-563502.0001 (01/14/04 to 12/31/09)	CAWCD	<u>Milewide/BKW Farms</u> : Indirect recharge of <b>CAP</b>	627.2	73-563502.0000:CAWCD 73-563502.0200: Tucson	627.20 627.20	Initially permitted in 1999.
	72-564430.0001 (01/14/04 to 04/02/08)	Herb Kai	<u>Kai-Avra GSF</u> : Indirect Recharge of <b>CAP</b> at Avra Valley Irrigation District.	12,513.37	73-564430.0100:MDWID <b>73-564430.0200:AWBA</b> 73-564430.0300:Tucson	12,513.37 <b>12,513.37</b> 12,513.37	Initially permitted in 1998.
	72-584465.0001 (03/01/04 to 12/31/16)	FICO	<u>Farmers Investment Company</u> : Indirect recharge.	22,000	none		Initially permitted in 2001.



AWBA-Storage Facility Inventory Update

TABLE 4G - Outside AMA Underground Storage Facilities							
MAP LOC.	FACILITY PERMIT NO.	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
T3N R11W	71-576699.0004 (10/25/00 to 09/30/20)	Vidler Water Company	<u>Vidler Water Recharge Project</u> : Recharge of CAP water through infiltration basins and vadose zone wells.	100,000	73-576699.0100: Vidler Water Co. <b>73-576699.0200: AWBA</b>	100,000 <b>100,000</b>	Project has been experiencing excessive nitrate levels. Current study is underway to determine cause and expected duration of elevated nitrate levels
T6N R15W	71-571498.0002 (06/27/02 to 05/21/03) <b>EXPIRED</b>	Arizona Public Service	<u>Bouse Water Bank</u> : Pilot recharge project to recharge CAP water through infiltration basins.	5,000	73-571498.0002: APS	5,000	Facility commenced operation in 2002.
T4N R14W	71-571309 (05/14/00 2-year permit) <b>EXPIRED</b>	Vicksburg Farms	<u>McMullen Valley Water Conservation and Drainage District</u> : Annual recharge of CAP water via wells.	10,000			
T11N R11E	71-579155 (01/18/01 to 01/18/13)	ADOT	<u>SR260/ADOT</u> : Annual recharge of CAP water via wells.	150	73-579155: ADOT NON-RECOVERABLE	150	Facility used exclusively for a "Water Exchange" with Salt River Project to allow for use of surface water in exchange for CAP water.
T21S R21E	71-583024 (08/13/01 to 06/30/23)	City of Sierra Vista	Recharge of <b>effluent</b> not to exceed 27,383 acre-feet of storage at any one time.	4,149	73-583024: Sierra Vista	4,149	

TABLE 4H - Outside AMA Groundwater Savings Facilities							
	PERMIT NO. FACILITY TYPE (DURATION)	PERMIT HOLDER	PROJECT DESCRIPTION	FACILITY PERMIT VOLUME (AF/YR)	WATER STORAGE PERMIT NO./HOLDER	WATER STORAGE PERMIT VOLUME (AF/YR)	ADWR WATER MANAGEMENT & HYDROLOGY COMMENTS
<b>PENDING APPLICATIONS FOR CAP WATER GROUNDWATER SAVINGS FACILITIES</b>							
	72-593304.0000	Harquahala Valley Irrigation District	<u>HVID</u> : Indirect recharge of CAP water within the HVID boundaries. (Harquahala subbasin)	50,000	No applications		

## **Potential Projects**

The purpose of this section is to briefly describe, based on available information, any projects that are being proposed that have yet to file for a facility permit with ADWR. Although the Authority can store effluent in the event CAP water supplies are not available, the focus of this discussion will be on potential facilities that may be available to store CAP water. The following facilities may be important in allowing the Authority to meet its objectives in the future.

### **Phoenix AMA**

Phoenix AMA staff have met with many potential applicants regarding proposed facilities, however, most of them are for the storage of effluent. The Gila River Indian Community (Community) is expected to submit an application in the near future for a GSF on Reservation. The proposed GSF is located both within the Phoenix and Pinal AMAs. Individual water storage permits would be required for each AMA. The facility is only expected to operate for 2-3 years. The Authority intends to pursue an agreement with the Community for storage at this facility. Potential long-term storage credits accrued by the Authority would allow the State to meet a portion of its firming obligations under P.L.108-451, Sec.105 (a).

Other sites that have been identified for potential CAP storage projects include: Peoria Lakeland Village located south of Lake Pleasant, and the City of Peoria north of Lakeland Village.

### **Pinal AMA**

No additional projects, other than the proposed GSF discussed above, have been identified in the Pinal AMA.

### **Tucson AMA**

Tucson Water is exploring the possibility of constructing an additional annual storage and recovery project in the southern portion of the Avra Valley. The proposed annual storage volume at this facility is 50,000 acre-feet. No other sites have been discussed as potential projects in the Tucson AMA.

### **Outside AMAs**

No additional projects have been identified outside the AMAs.

**Conclusion**

The Authority currently holds water storage permits in all AMAs for approximately 1.3 million acre-feet. Even recognizing that in any given year there is the potential that much of this capacity may not be available for water banking purposes due to higher priority storage obligations and other factors, the Authority finds and concludes that it is likely that sufficient storage capacity exists for each area to meet the Authority's objectives.