6.1 INTRODUCTION

The Industrial Conservation Program for the Fourth Management Plan (4MP) is the same as in the Third Management Plan (3MP), with the addition of a conservation program for Large-Scale Power Plants. This program has been added in the 4MP in event of the addition of a large-scale power plant in the Prescott Active Management Area (PRAMA) in the future. The Industrial Conservation Program/Large-Scale Power Plant program is similar to the program in the 4MP for the other four Active Management Areas (AMAs). The historical objective of the Industrial Conservation Program has been to move industrial users within the PRAMA to the greatest level of water use efficiency economically attainable given the use of the latest available water conservation technology. Efficient use of groundwater and the replacement of groundwater sources with renewable supplies contribute towards the achievement and maintenance of the PRAMA safe-yield goal.

What is an Industrial User?
An industrial user is a person who uses groundwater withdrawn pursuant to a Type 1 or Type 2 non-irrigation grandfathered right (GFR) or a withdrawal permit for an industrial use *(See http://www.azwater.gov/AzDWR/WaterManagement/Assessments/documents/PRAMAAssessmentVersion2.pdf)*. These GFRs and permits (collectively referred to in this chapter as "industrial rights") have annual volumetric groundwater allotments. The total volume of Type 2 GFRs in the PRAMA was set immediately following enactment of the Code. The total volume of water associated with Type 1 GFRs can increase over time as agricultural land with IGFRs is retired from agricultural production and the IGFRs are converted to Type 1 GFRs. General Industrial Use (GIU) permits are issued by ADWR if water service cannot be secured from a municipal provider and if the use of surface water or reclaimed water, or the purchase or lease of a GFR is not economically feasible. Permits expire after a specified period of years.

An industrial user may receive groundwater from an irrigation district. However, an industrial user may not receive groundwater from an irrigation district in excess of the amount it was entitled to receive on June 12, 1980 unless it has obtained a GFR or a GIU permit. A.R.S. § 45-497(B).

There are also groundwater users that, although served by a municipal water provider, are subject to industrial program conservation requirements through the Municipal Conservation Program. These users include turf-related facilities, public rights-of-way and large-scale cooling facilities not part of a large-scale power plant, and are referred to in the Municipal Conservation Program as "individual users."

Industrial Conservation Program Requirements
The 4MP Industrial Conservation Program includes general conservation requirements that apply to all industrial users. For those Industrial Conservation Programs where a water conservation plan was required by the 3MP, an update to that plan is required within 180 days after the industrial user receives written notice from ADWR of its 4MP conservation requirements. In addition there are specific conservation requirements that apply to the following current or potential industrial users in the PRAMA:

- Turf-Related Facilities (≥10 acres)
- Sand and Gravel Facilities (>100 acre-feet/year)
- Large-Scale Power Plants (>25 megawatts)
- Large-Scale Cooling Facilities (>1,000 tons)
- New Large Landscape Users (>10,000 square feet of water intensive landscape)
- New Large Industrial Users (>100 acre-feet/year)

In addition, all industrial users are required to comply with certain conservation requirements, including avoiding waste and making diligent efforts to recycle water.

Industrial Program Goal and Objectives for the 4MP

ADWR's objective during the fourth management period is to identify water management issues in each water demand sector in each Active Management Area (AMA) and develop solutions that will increase progress in achieving the AMA goal. The industrial sector in PRAMA has historically used less groundwater than the Municipal or Agricultural sectors, and has used only about one seventh of the total legal withdrawal authority of industrial rights in the PRAMA. An industrial user may use renewable supplies; however, the majority of Industrial water use is groundwater. ADWR continues to encourage the efficient use of all sources of water, and replacement of PRAMA groundwater uses with alternative supplies in the industrial sector.

PRAMA Industrial Sector Description

Industrial water users with water rights or permits accounted for five percent of the AMA water use in 2012, or approximately 1,011 acre-feet. The industrial sector in PRAMA uses nearly all groundwater. There is only one facility, a sand and gravel operation, which has historically used surface water. All other industrial users rely on groundwater to meet their demand.

Industrial uses of groundwater in the PRAMA consist primarily of golf course and landscape watering. Turf-related facilities accounted for 64 percent of industrial water demand, followed by "other" industrial uses at 22 percent. "Other" industrial uses include turf irrigation of less than ten acres, commercial businesses, small sand and gravel operations and plant nurseries. Sand and gravel operations made up the remaining 14 percent of Industrial demand.

History of PRAMA Industrial Regulatory Programs/4MP Goals Summarized

The Industrial Conservation Programs for the various sub-sectors are based on the requirement in the Code to include a conservation program for all non-irrigation uses of groundwater. Conservation requirements are based on the use of the latest commercially available conservation technology consistent with reasonable economic return. For the 4MP the Code authorizes ADWR to include additional conservation requirements for non-irrigation uses if feasible.

Industrial Conservation Programs – History and Background

All previous ADWR management plans have included conservation requirements for industrial users. The 1MP requirements stressed water use efficiency and contained other general requirements. There were specific conservation programs only for metal mines, turf-related facilities, electric power plants and sand and gravel facilities. As a result of consultant studies done for the 2MP, additional conservation requirements were added for new large-scale cooling users, dairies, cattle feedlots, new large industrial users, and new large landscape users. In addition, there was a more specific reclaimed water incentive provision for turf-related facilities. In the 3MP, separate Industrial Conservation Program categories were created for large-scale cooling facilities, new large landscape users and new large industrial user subsectors. These three industrial water use groups were included in the "all industrial users" category in the 2MP, but were separated out to more clearly present the water use characteristics and specific conservation requirements for the third management period. The 4MP includes the same programs that made up the 3MP Industrial Conservation Program. Programs for dairies and cattle feedlots were not included in the PRAMA 3MP because those types of facilities do not exist in the PRAMA. There are six Industrial Conservation Program subsectors in the 4MP for the PRAMA: (1) turf-related facilities, (2) sand and gravel facilities, (3) large-scale power plants, (4) large-scale cooling facilities, (5) new large landscape users and (6) new large industrial users.

6.2 RELATIONSHIP OF THE INDUSTRIAL SECTOR TO ACHIEVEMENT OF THE AMA WATER MANAGEMENT GOAL

Physical description

The majority of industrial water use in the PRAMA is golf course use, followed by sand and gravel facilities. Other industrial users are various types of non-irrigation, non-domestic uses such as commercial purposes. PRAMA golf courses are located in the southern portions of the PRAMA in the Prescott and Prescott Valley areas and between the Prescott Valley and Dewey-Humboldt areas *(See Figure 6-1).* Four of the six golf courses in the PRAMA use 100 percent reclaimed water. Prescott Country Club and Quailwood Green Golf Club, both located between Prescott Valley and Dewey-Humboldt, rely on groundwater for turf-related watering. Antelope Hills Golf Course, the Hassayampa Golf Club, Stoneridge Golf Course and Prescott Lakes Golf Course rely on reclaimed water to meet their turf irrigation demands. The City of Prescott provides reclaimed water to all of these facilities except Stoneridge, which is provided reclaimed water by the Town of Prescott Valley. Since these four courses are considered municipally served, their demand does not appear in Table 6-1 in this chapter, however their use of water is depicted in the reclaimed use by the municipal sector as described in Chapters 3 and 5 of this plan. Although these four courses have used 100 percent reclaimed water historically, they still qualify as turf-related facilities and an allotment is still assigned to them. However, since they do not use any groundwater, the regulatory requirements of the Turf Program in this chapter are not imposed on them. However, their water demand is tracked for purposes of determining total PRAMA water use, and in particular, total PRAMA reclaimed water use.

Assessment

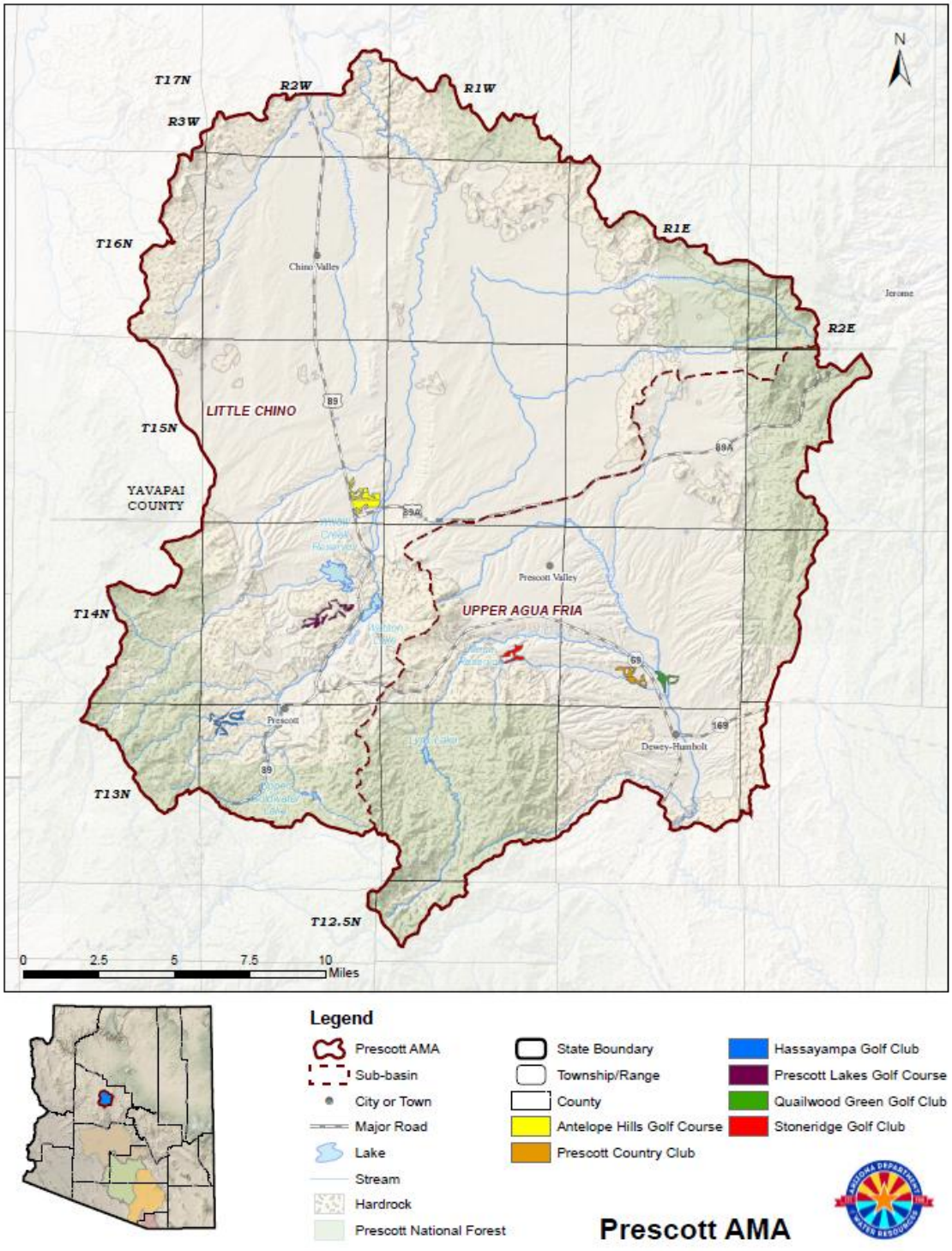
Industrial demand projections in the Assessment (ADWR, 2011) project an increase of between 400 and 1,600 acre-feet between 2010 and 2025, and an increase in industrial groundwater demand of between 350 and 1,500 acre-feet. Table 6-1 shows the historical industrial demand by source from 1985 to 2012 in the PRAMA. The industrial sector in PRAMA has historically been dependent on groundwater to meet its demand. The sum of the annual water allotments for GFRs and permits is also shown in Table 6-1. The volume of the allotment has slowly increased over the historical period to a peak in the year 2003. Allotments increase as IGFRs are conveyed to Type I GFRs. The sum of the allotments may decrease due to non-irrigation rights becoming inactive and developed, or through extinguishment of GFRs. As of 2012, the annual industrial use was only 17 percent of the total allotment. The allotment represents an allowable use of groundwater under the Code. It also represents a potential for extinguishment. Under the AWS Rules, GFRs may be extinguished to generate credits that may be used to meet the consistency with management goal criterion of the AWS Rules. Extinguishment of a Type I GFR is based on the Type I acres. Extinguishment of a Type 2 GFR is based on the Type 2 allotment. Extinguishment credits reduce over time based on the year 2025 minus the year the right is extinguished. Mineral extraction Type 2 GFRs and Groundwater Withdrawal Permits do not qualify for extinguishment credits. The portion of the 2012 industrial allotment that was used for mineral extraction purposes or was withdrawn pursuant to mineral extraction permits was 86 acre-feet.

6.3 INCENTIVES FOR THE USE OF RENEWABLE SUPPLIES AND REMEDIATED GROUNDWATER

Incentives have been developed to increase the use of non-groundwater supplies. For example, ADWR has included a reclaimed water adjustment for turf-related facilities in the management plans. When determining a turf-related facility's compliance with its maximum annual water allotment, ADWR will count each acre-foot of direct use reclaimed water or reclaimed water recovered within the area of impact of storage that is used by the facility as 0.6 acre-foot of water. This adjustment does not apply to reclaimed water recovered outside the area of impact of the stored water. In addition to the reclaimed

water adjustment, facilities using reclaimed water may apply to ADWR for an allotment addition to allow for leaching of salts below the root zone.

FIGURE 6-1
LOCATION OF GOLF COURSES
PRAMA



During the fourth management period, ADWR will continue to support the increased use of reclaimed water in all sectors including the industrial sector, although reclaimed water has not been put to use in the industrial sector in PRAMA historically.

TABLE 6-1
HISTORICAL INDUSTRIAL DEMAND AND ALLOTMENT
PRAMA

Year	Demand	Groundwater Demand	Surface Water	Reclaimed Water	Allotment
1985	641	641	0	0	4,414
1986	779	779	0	0	4,414
1987	895	895	0	0	4,715
1988	523	523	0	0	4,901
1989	669	669	0	0	4,910
1990	476	476	0	0	4,900
1991	516	516	0	0	4,956
1992	805	805	0	0	5,010
1993	704	704	0	0	4,997
1994	778	778	0	0	5,108
1995	696	696	0	0	5,106
1996	796	796	0	0	5,296
1997	731	731	0	0	5,316
1998	1,035	1,035	0	0	5,408
1999	926	926	0	0	5,413
2000	967	967	0	0	5,631
2001	1,550	1,309	241	0	5,646
2002	1,411	1,411	0	0	5,976
2003	1,608	1,542	66	0	7,927
2004	1,591	1,541	50	0	7,845
2005	1,496	1,442	54	0	7,771
2006	1,486	1,360	126	0	7,618
2007	1,630	1,562	68	0	7,934
2008	1,425	1,362	63	0	7,928
2009	1,312	1,263	49	0	7,788
2010	1,218	1,153	65	0	7,553
2011	925	895	30	0	6,137
2012	1,011	964	47	0	5,937

6.4 NON-REGULATORY EFFORTS

ADWR has a program for water management assistance in the PRAMA. Funding for the program comes from a portion of the annual withdrawal fees levied and collected from most persons withdrawing groundwater from non-exempt wells in the PRAMA. Since the Water Management Assistance Program (WMAP) began, the PRAMA has funded several projects promoting prudent water management within the PRAMA *(See Chapter 9 of this plan)*.

6.5 INDUSTRIAL CONSERVATION PROGRAMS DESCRIPTION

The 4MP includes regulatory programs for six sub-sectors of industrial uses:

- All Industrial Users
- Turf-Related Facilities
- Sand and Gravel Facilities
- Large-Scale Power Plants
- Large-Scale Cooling Facilities
- New Large Landscape Users
- New Large Industrial Users

Each Industrial Conservation Program is discussed under a separate subsection. The industrial sub-sector regulatory requirements follow the sub-sector program descriptions, in the same order in which each industrial sub-sector is discussed, and last are any applicable appendices. In general, each of the subsections contains all or some of the following: (1) an introduction, (2) program goals and objectives (3) water use history by the subsector, (4) issues and objectives, (5) program description.

6.6 ALL INDUSTRIAL USERS CONSERVATION PROGRAM DESCRIPTION

6.6.1 Introduction

The conservation requirements in this section apply to all industrial water users. In addition to these requirements, certain industrial users are also required to comply with conservation requirements specific to their type of water use under other sections of this chapter. For example, a sand and gravel facility must comply with the requirement in this section to use plants from the ADWR Low Water Use/Drought Tolerant Plant List for the PRAMA *(see http://www.azwater.gov/azdwr/WaterManagement/AMAs/PrescottAMAFourthManagementPlan.htm)* for any landscaping at the facility, if applicable, and, in addition, must comply with the conservation requirements in Section 6.13 of this chapter.

The following industrial users are required to comply with the conservation requirements for all industrial users in this section, as well as conservation requirements for their specific type of water use in other sections of this chapter: turf-related facilities, sand and gravel facilities, large-scale power plants, large-scale cooling facilities, new large landscape users, and new large industrial users. All remaining industrial users are referred to in this section as "other industrial users" and are required to comply only with the conservation requirements for all industrial users in this section.

6.6.2 Water Use by "Other Industrial Users"

Many different types of commercial and manufacturing uses are included in the "other industrial user" category. "Other industrial users" include health care facilities, resorts, restaurants, office buildings, shopping malls, and laundries. Water uses associated with this category commonly include cooling, landscaping, sanitary, kitchen, and industrial process use.

It is uncertain whether water use by other industrial users will grow. ADWR held other industrial use constant in two of the projection scenarios in the Assessment and included modest growth by other industrial users in the third scenario. It is anticipated that most future industrial development will be served by municipal providers because commercial and industrial development generally occurs within their service areas.

6.6.3 All Industrial User Program Description

The 4MP conservation program for all industrial users is identical to the 3MP program. All industrial users are required to avoid waste and make diligent efforts to recycle water. Single-pass cooling or heating is not allowed unless the water is reused.

Industrial users that are not regulated as turf-related facilities or new large landscape users are required to use plants listed in the ADWR Low Water Use/Drought Tolerant Plant List for the PRAMA for landscaping where feasible and water with efficient irrigation systems. Improving irrigation efficiency can be a source of major water savings whether the plants have high or low water needs. ADWR encourages all facilities to irrigate efficiently regardless of the type of vegetation planted. In addition, since January 1, 2002, industrial users have been prohibited from serving groundwater to vegetation planted in a public right-of-way on or after January 1, 2002 unless the plants are on the ADWR Low Water Use/Drought Tolerant Plant List for the PRAMA, and have been prohibited from serving groundwater to a water feature in the right-of-way if installed on or after January 1, 2002.

6.7 TURF-RELATED FACILITIES

6.7.1 Introduction

A turf-related facility is a facility with 10 or more acres of water-intensive landscaped area. Golf courses, parks, schools, cemeteries, and common areas within residential developments are examples of facilities that often qualify as turf-related facilities. Because "irrigation" is defined in the Code as water applied for the purpose of growing crops for sale or consumption, turf-related watering for recreational and aesthetic purposes is considered a non-irrigation water use rather than an irrigation use. Turf-related facilities apply water for growing turfgrass and other landscaping plants and for filling and maintaining water levels in bodies of water. Water application efficiency is determined by the type of water application system that is utilized, maintenance of the system, water application scheduling, site topography, soil type, weather conditions, and water quality.

Turf-related facilities regulated under the Industrial Conservation Program obtain groundwater pursuant to Type 1 or Type 2 non-irrigation grandfathered rights or groundwater withdrawal permits. In addition, some turf-related facilities are served groundwater by municipal water providers and are subject to the conservation requirements set forth in this section through provisions of the Municipal Conservation Program *(see Chapter 5 of this plan)*. Municipally-served facilities are called individual users.

6.7.2 Turf Program Goals and Objectives

For the 4MP, the Code allows ADWR to include additional conservation requirements for non-irrigation uses if feasible. ADWR has not changed the Turf-Related Facilities Program from the program included in the 3MP. Since the 1MP, the Turf-Related Facilities Program has included a maximum annual allotment for turf-related facilities, stressed water use efficiency and provided an incentive for the use of reclaimed water. ADWR allows facility managers flexibility in selecting conservation techniques most appropriate to each facility. During the development of each management plan through the 3MP, ADWR conducted extensive data collection and analysis to determine whether additional reductions in turf-related facility allotments appeared feasible. Flexibility has been given in each management plan to turf-related facilities to account for varying weather conditions. First, a three year averaging of water use was incorporated and then later, in some AMAs, a turf-related facility flexibility account. In each management plan prior to the 4MP, ADWR has increased the incentive to use reclaimed water for landscape irrigation. The objective is to reduce groundwater pumping for turf-related watering and replace that groundwater with reclaimed water to the maximum extent feasible to assist in moving the PRAMA to achieve its goal of safe-yield by 2025.

6.7.3 Turf-Related Water Use History

ADWR has identified six turf-related facilities in the PRAMA, all golf courses. Four of the six golf courses in the PRAMA rely entirely on reclaimed water from large municipal water providers to meet their landscape watering needs. Although ADWR identifies them as turf-related facilities, they are not required to comply with an allotment if no groundwater is used for landscape watering purposes at a the facility during a year. The other two golf courses are industrial users and do use groundwater. Parks,

cemeteries, schools and residential common areas with 10 or more acres of water-intensive landscaping are also subject to regulation as turf-related facilities, but none have been identified to date within the PRAMA. ADWR has information indicating that there are some schools in the PRAMA that have more than 10 acres of water intensive landscaping. During the fourth management period, ADWR will seek to identify any additional turf-related facilities in the PRAMA and notice them of the appropriate conservation requirements. Historical water use in each of the industrial subsectors is shown in Table 6-2.

TABLE 6-2
HISTORICAL INDUSTRIAL DEMAND BY SUBSECTOR
PRAMA

Year	Turf	Sand & Gravel	Other	TOTAL
1985	0	135	506	641
1986	0	90	689	779
1987	0	70	825	895
1988	438	34	51	523
1989	389	74	205	669
1990	349	83	45	476
1991	399	53	63	516
1992	313	377	114	805
1993	343	115	246	704
1994	357	254	167	778
1995	391	152	153	696
1996	502	107	187	796
1997	434	83	215	731
1998	409	402	223	1,035
1999	456	235	235	926
2000	463	149	355	967
2001	819	241	490	1,550
2002	872	0	539	1,411
2003	802	66	740	1,608
2004	776	50	765	1,591
2005	783	54	659	1,496
2006	793	126	567	1,486
2007	649	175	806	1,630
2008	645	186	594	1,425
2009	594	167	551	1,312
2010	576	133	509	1,218
2011	612	130	184	925
2012	646	147	218	1,011

6.7.4 Turf-Related Facilities Program Description

6.7.4.1 Maximum Annual Water Allotment

Base Allotment

The core of the conservation program for turf-related facilities is the maximum annual water allotment. The allotment is calculated differently for different types of facilities, but in most cases there is a direct relationship between the number of acres to which water is applied and the volume of the allotment. The

total acreage of turf, low water use landscaped area and water surface area is multiplied by an acre-foot per acre rate to determine the allotment.

The allotment for all turf-related facilities in the PRAMA is calculated by determining the actual acreage within the facility in each of the three landscaping categories mentioned above, and then multiplying the number of acres by the appropriate application rate *(See Table 6-3)*. The approach used for these facilities allows expansion of landscaped area. Beginning with the 1MP, ADWR recognized that the latest conservation technology for golf courses includes course design which concentrates water-intensive landscaping into areas which come into play and water management practices which adjust water application schedules for weather conditions and seasons of highest play. The allotment for golf course acreage that came into existence after December 31, 1984 is therefore capped to encourage efficient design, construction, water application, and overseeding practices. These caps are described below.

Pre-1985 golf courses. Several limitations apply to the maximum annual water allotment for pre-1985 golf courses. In determining the number of water surface acres in existence within a facility, the total surface area of any bodies of water added to the facility after December 31, 1984 and not filled and refilled entirely with direct use reclaimed water or reclaimed water recovered within the area of impact of a storage project is limited to an area calculated by multiplying the number of holes present within the turf acres that came into existence within the facility after December 31, 1984 by 0.14 acre per hole. Also, the allotment for any turf acres and low water use landscaped area that were added to the facility after December 31, 1984 cannot exceed an amount calculated by multiplying the number of holes present within those acres by 24.5 acre-feet of water per hole, plus any allotment additions.

TABLE 6-3
ANNUAL APPLICATION RATES FOR TURF-RELATED FACILITIES
PRAMA

Type of Use	Applicable Rate (acre-feet per acre)
Turf	4.9
Water Surface Acres	5.5
Low Water Use Landscaping	1.5

Post-1984 golf courses. Several limitations also apply to the maximum annual water allotment for post-1984 golf courses. In determining the number of water surface acres in existence within a facility, the total surface area of all bodies of water not filled and refilled entirely with direct use effluent and effluent recovered within the area of impact is limited to an area calculated by multiplying the number of holes present within the facility during the year by 0.14 acre per hole. Also, the allotment for turf acres and low water use landscaped area within a post-1984 golf course cannot exceed an amount calculated by multiplying the number of holes present within the facility by 24.5 acre-feet of water per hole, plus any allotment additions.

Golf courses may expand or develop any number of water-intensive landscaped acres and low water use landscaped area. However, water use must not exceed the maximum annual water allotment, which assumes acreage restrictions. Although the allotment is calculated on a per acre basis, the facility manager has discretion on how to apply the allotment within the facility.

Golf courses may expand or develop any number of water-intensive landscaped acres and low water use landscaped area. However, water use must not exceed the maximum annual water allotment, which assumes acreage restrictions. Although the allotment is calculated on a per acre basis, the facility manager has discretion on how to apply the allotment within the facility.

Allotment Additions
Under certain circumstances, a turf-related facility is entitled to an addition to its base allotment. In some cases, the allotment addition is effective only for one year; in other cases, the allotment addition is effective for a longer period. The following are the allotment additions allowed in the 4MP:

Allotment Addition for Establishment of Newly Turfed Area
An allotment addition is given to turf-related facilities for the establishment of newly planted turf. The allotment addition is equal to 0.8 acre-feet of water per acre of newly turfed area, and is limited to the year in which the turf is planted. For golf courses, the allotment addition is limited to an amount calculated by multiplying the number of holes present within the newly turfed area by four acre-feet of water.

Allotment Addition for Revegetation
A revegetation allotment addition is available to facilities that want to establish low water use or other site-adapted landscaping plants which will need only temporary supplemental water application after construction of a new or renovated facility. This allotment addition of up to 1.5 acre-feet per acre for up to a maximum of three calendar years is quantified and granted on an individual basis through an application process. The quantity and duration of the allotment adjustment is determined through ADWR's evaluation of each application. This adjustment is separate from the low water use landscaping component included in the maximum annual water allotment calculation, and is not included in the allotment cap for new landscaped areas within golf courses.

Allotment Addition for Filling Bodies of Water
New turf-related facilities receive a one-time allotment addition to fill bodies of water used within the facility. The allotment addition is equal to the volume used for initial filling of the body of water and is given only for the year in which the body of water is filled. Any facility may also apply for an allotment addition to refill a body of water which has been emptied for maintenance work to eliminate or reduce seepage losses. The allotment addition may be given only for the year in which the body of water is refilled. The allotment addition will not be granted for any body of water or portion of a body of water that is excluded from the calculation of a golf course's maximum annual water allotment. Removed

Acreage Addition
Conservation requirements for the fourth management period also provide an incentive to remove turfed acreage from a pre-1985 turf-related facility. If turfed acreage or water surface area in existence as of December 31, 1984 is removed, the allotment for the facility does not decrease.

Allotment Addition for Leaching
When high levels of total dissolved solids are present in the water supply, a turf-related facility may need an additional amount of water for leaching, or deep percolation, to prevent salts from accumulating in the root zone. If salts are allowed to accumulate in the soil, salinity may eventually reach levels toxic to turfgrass. If a facility's water supply has a concentration of 1,000 milligrams per liter of total dissolved solids (approximately 1.5 millimhos per centimeter of electrical conductivity) or greater, the turf-related facility may apply to ADWR for an allotment addition for leaching.

6.7.4.2 Additional Conservation Requirements
All post-1984 turf-related facilities are required to update their water conservation plan within 180 days after notification of the conservation requirements. The plan update must outline the water management practices and technologies the facility will utilize to maximize water use efficiency. All turf-related facilities that are not golf courses are required to design, construct, and maintain grounds in a manner that will minimize water-intensive landscaped areas consistent with reasonable use and enjoyment of the

facility. Golf courses have a capped maximum annual allotment which assumes water-efficient design and management.

6.7.4.3 Reclaimed Water Use Adjustment

Currently in the PRAMA, no reclaimed water is used by industrial turf-related facilities. However, most municipally served turf-related facilities in PRAMA use 100 percent reclaimed water. Reclaimed water's high nutrient content makes it an excellent supply for turf-related watering, as long as the nutrient load is carefully matched to plant needs and over-application of potential groundwater pollutants is avoided.

To encourage the maximum use of reclaimed water on turf-related facilities during the fourth management period, ADWR has maintained the reclaimed water incentive that was included in the 3MP. While the maximum annual water allotment will not change, each acre-foot of reclaimed water will be counted as 0.6 acre-foot of water when compliance with the maximum annual water allotment is determined. This adjustment does not apply to reclaimed water stored in a storage facility pursuant to a water storage permit and recovered outside the area of impact of the stored water. In addition to the reclaimed water adjustment, facilities using reclaimed water may apply to ADWR for an allotment addition to allow for leaching of salts below the root zone.

6.7.4.4 Monitoring and Reporting Requirements

The 4MP includes monitoring and reporting requirements for all turf-related facilities. All turf-related facility water use will be assumed to be for landscape watering purposes unless other water uses are metered separately. For example, if water for domestic uses at a park is not metered, it will count against the facility's allotment. This provision encourages facilities to install enough meters to ensure that turf-related watering is accurately measured and reported.

6.8 SAND AND GRAVEL FACILITIES

6.8.1 Introduction

Sand and gravel facilities are facilities that produce sand and gravel and use more than 100 acre-feet of water from any source in a calendar year. Sand and gravel facilities mine unconsolidated stream deposits to produce construction materials. The aggregate must be sorted according to grain size and washed to remove fine-grained particles. Aggregate washing accounts for the bulk of water use by sand and gravel producers. In addition to using water for washing, water is used for the following purposes: (1) to produce ready-mix concrete, bricks, blocks, and asphaltic concrete; (2) to control dust; (3) to wash the outside of vehicles; (4) to wash the inside of mixer drums; (5) to wash other equipment; (6) to cool equipment; (7) to cool material; and (8) for domestic purposes.

Presently, there are two sand and gravel facilities in the PRAMA; however, one uses 100 percent surface water and the other has relied entirely on reclaimed water supplied by the City of Prescott for the past few years.

6.8.2 Sand and Gravel Facility Program Description

ADWR has not changed the Sand and Gravel Facility Program from the program included in the 3MP. The 4MP includes requirements for recycling wash water because implementation of recycling improves water use efficiency. All sand and gravel operations can apply these techniques. In addition to recycling wash water, sand and gravel facility operators must implement two additional conservation measures, one related to water used for dust control and the other related to cleanup activities. The facility operator must choose the conservation measure to be implemented in each category from a list of approved measures. The measures chosen must be the most appropriate for the facility for the fourth management period.

As in the 3MP, sand and gravel operators will be required to evaluate specific water-saving methods and submit a conservation plan to ADWR during the fourth management period. The conservation plan must be submitted to the director within 180 days after notification of the conservation requirements.

Implementation of water conservation practices or technologies can result in increased profits. Sand and gravel facility operators will analyze conservation methods to identify those which will result in a positive economic return. Operators will be required to perform an economic feasibility analysis of three potential conservation practices; disposal pond surface area reduction, use of clarifiers and the use of an alternative water supply to groundwater. The following potential costs and savings must be analyzed in the economic feasibility analysis:

- Labor (including planning, construction, operation, maintenance, and management time);
- Equipment (values amortized over the projected life of the equipment);
- Land value (including value of mineral reserves);
- Water costs (including pumping costs, well maintenance, and withdrawal taxes);
- Costs for chemicals and raw materials;
- Fuel or energy costs;
- Industrial wastewater disposal costs;
- Sewage disposal costs;
- Changes in revenue caused by changing production rate, minimizing "down-time," or increasing the size of reserves;
- Costs associated with regulatory permitting.

6.9 LARGE-SCALE POWER PLANTS

6.9.1 Introduction

ADWR regulates power plants that produce or are designed to produce more than 25 megawatts of electricity. Two types of electric power plants are regulated in the 4MP: steam electrical plants and combustion turbine plants. Steam electrical plants use cooling towers to dissipate excess heat that builds up in the steam electrical generation process. Combustion turbine plants do not use steam to generate electricity. Rather than using steam to drive a turbine, combustion turbines use compressed air. Steam electric power plants use more water than combustion turbine plants. Regardless of whether the plant is a steam electric power plant or a combustion turbine plant, the major consumptive use of water at electrical plants is evaporation from cooling towers. Because of the large volume of water used in towers to condense steam, conservation requirements for the electric power plants require facilities to achieve a high level of efficiency in cooling tower operation. Some large-scale power plants such as combustion turbines utilize cooling towers for dissipation of heat for auxiliary loads. These are regulated in this sub-sector, but the conservation requirements are similar to the Large-Scale Cooling Facility Program.

Currently there are no large-scale power plants located in the PRAMA. This program has been added to the PRAMA for the 4MP in the event that a large-scale power plant is built in the PRAMA during the fourth management period. The conservation program for Large-Scale Power Plants is similar to the program described in the 4MP for the other four AMAs.

6.9.2 Large-Scale Power Plant Conservation Program Description

6.9.2.1 Steam electric power plants

The 4MP requires steam electric power plants to achieve an annual average of 15 cycles of concentration in cooling towers. The cycles of concentration requirement applies only when cooling towers are dissipating heat created during the generation of electricity. In addition to achieving 15 cycles of

concentration, facilities must divert the maximum possible volume of on-site wastewater (other than blowdown water and sanitary wastewater) to the cooling process so long as this steam does not have a negative impact on the cycles of concentration or any other environmental requirement.

Facilities may be granted adjustments to their full cycles of concentration requirements in cases where, due to the quality of recirculating water, adhering to the 15 cycles of concentration standard is likely to result in equipment damage or blowdown water exceeding environmental discharge standards. Cooling towers at power plants are exempted from cycles of concentration requirements during the first 12 months in which reclaimed water constitutes more than 50 percent of tower water supply. After this period, facilities may request an adjustment to full cycles of concentration requirements for reclaimed water-served towers based on the water quality of the reclaimed water supply.

Facilities may apply to the director to use alternative conservation technologies in place of achieving 15 cycles of concentration if the use of the proposed alternative technologies will result in equal or greater water savings. Facilities may also request a waiver from conservation requirements on the basis that cooling tower blowdown water is completely reused. Facilities must periodically measure and annually report blowdown water volumes, make-up water volumes, and the chemical concentration of blowdown and make-up water. In addition, facilities must report the amount of electricity generated, periods when they are not generating electricity, and the volume of water used for purposes other than electric power generation.

6.9.2.2 Combustion Turbine Plants

Cooling towers associated with combustion turbine power plants with a capacity of 250 tons or more have the following requirements:

- Fully operational cooling towers with 250 tons or more of cooling capacity must achieve either 120 mg/L of silica or 1,200 mg/L of total hardness in recirculating water, whichever is reached first, before blowing down;
- If needed, a facility may apply for an alternative blowdown standard for any towers using reclaimed water. During the initial 12-month period during which 50 percent or more of the water used by a tower is reclaimed water, the tower is exempt from blowdown standards;
- If needed, a facility may apply for an alternative blowdown standard for any tower if compliance with blowdown requirements would likely result in damage to cooling towers or associated equipment or exceedence of environmental discharge standards because of the accumulation of limiting constituent other than silica or total hardness.
- Facilities must record monthly and report annually the volumes of tower make-up water and blowdown water and the concentrations of silica, total hardness, or approved alternative constituent, in both make-up water and blowdown water.

6.10 LARGE-SCALE COOLING FACILITIES

6.10.1 Introduction

Currently, there are no large-scale cooling facilities subject to conservation requirements in the PRAMA. However, ADWR has elected to continue to include this program in the 4MP. For the 4MP ADWR has not changed the Large-Scale Cooling Facility Conservation Program from the program included in the 3MP.

The purpose of cooling tower operation is to cool water that has absorbed the heat load of a heat-generating process. Cooling towers are present at a variety of commercial, industrial, and institutional facilities. Large-scale cooling facilities are defined as facilities with an aggregate cooling capacity of a

minimum of 1,000 tons. The minimum cooling unit that is added to create the aggregate total of 1,000 tons is 250 tons in size. Most large-scale cooling facilities are served by municipal water providers. These facilities are termed individual users. Water providers are responsible for the individual users' compliance with industrial conservation requirements unless they have notified ADWR of the existence of the individual user as provided in section 5-709 of the Municipal Conservation Requirements *(See Chapter 5 of this plan*) or ADWR has given the Individual user notice of the conservation requirements, in which case the individual user is responsible for compliance. Large-scale cooling facilities served by their own wells are regulated directly by ADWR and are responsible for complying with industrial conservation requirements.

6.10.2 Large-Scale Cooling Facility Conservation Program

The following 4MP conservation requirements apply to cooling towers that are located at large-scale cooling facilities and that have 250 tons or more of cooling capacity:

- Fully operational cooling towers with 250 tons or more of cooling capacity must achieve either 120 mg/L of silica or 1,200 mg/L of total hardness in recirculating water, whichever is reached first, before blowing down;
- If needed, a facility may apply for an alternative blowdown standard for any towers using reclaimed water. During the initial 12-month period during which 50 percent or more of the water used by a tower is reclaimed water, the tower is exempt from blowdown standards;
- If needed, a facility may apply for an alternative blowdown standard for any tower if compliance with blowdown requirements would likely result in damage to cooling towers or associated equipment or exceedence of environmental discharge standards because of the accumulation of limiting constituent other than silica or total hardness.
- Facilities must record monthly and report annually the volumes of tower make-up water and blowdown water and the concentrations of silica, total hardness, or approved alternative constituent, in both make-up water and blowdown water.

6.11 NEW LARGE LANDSCAPE USERS

6.11.1 Introduction

No new large landscape users served by their own wells, rather than a municipal water provider, were identified during the third management period. However, ADWR has elected to continue to include this program in the 4MP. For the 4MP, ADWR has not changed the New Large Landscape Users Program included in the 3MP.

New large landscape users are industrial users with a substantial water-intensive landscaped area that was planted after January 1, 1990. The conservation program differentiates between two types of new large landscape users: non-residential facilities that are hotels or motels, and non-residential facilities that are not hotels or motels. If the facility is not a hotel or motel, conservation requirements apply to landscapable areas in excess of 10,000 square feet. If the facility is a hotel or motel, requirements apply to areas in excess of 20,000 square feet. If a facility has ten or more acres of water-intensive landscaped area it is defined as a turf-related facility and is subject to specific conservation requirements discussed in Section 6.7 of this chapter.

6.11.2 New Large Landscape User Conservation Program Description

In addition to the requirements that apply to all industrial users, new large landscape users must limit the percentage of water-intensive landscaped area above a specified square footage. The facility must limit its water intensive landscaped area to the greater of the following: 1) 10,000 square feet (20,000 square feet for hotels and motels) plus twenty percent of the area in excess of 10,000 square feet (20,000 square feet

for hotels and motels); or 2) the total surface area of all bodies of water within the facility that qualify as water intensive landscaped area and that are allowed under the Lakes Bill, A.R.S. § 45-131, *et seq*.

Water-intensive landscaping includes not only high water using plants such as turf but also bodies of water such as ponds. However, it does not include any area of land watered exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact, bodies of water used primarily for swimming, bodies of water filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact and bodies of water allowed under an interim water use permit pursuant to the Lakes Bill (A.R.S. §§ 45-131-139) if the body of water will be filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact after the permit expires. If 100 percent wastewater is used to water the landscape, the requirements do not apply. For example, if there is sufficient cooling tower blowdown water and grey water available from the operations of a hotel, this wastewater could be used to water any amount of water-intensive landscaped area up to 10 acres. Once a water-intensive landscaped area equals or exceeds 10 acres in size, it is defined as a turf-related facility and is subject to regulation under that program.

6.12 NEW LARGE INDUSTRIAL USERS

6.12.1 Introduction

ADWR has not identified any new large industrial users in the PRAMA. However, ADWR has elected to continue to include this program in the 4MP. For the 4MP ADWR has not modified the New Large Industrial Users Program included in the 3MP.

New large industrial users are industrial users that use in excess of 100 acre-feet of water per year and commenced use after January 1, 2015.

6.12.2 New Large Industrial User Conservation Program Description

In addition to the requirements that apply to all industrial users, new large industrial users must prepare and submit a water conservation plan to the director. However, if the user is required to submit a conservation plan under another section of this chapter, it can combine and submit one plan.

The water conservation plan must show how much water conservation can be achieved at the facility. It must identify how water is used at the facility and what can be done to conserve it in major water use areas. The plan must also detail an employee water conservation education program at the facility and describe when conservation measures will be implemented.

6.13 INDUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR ALL INDUSTRIAL USERS

6-1301 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes, unless the context otherwise requires, the following words and phrases used in this chapter shall have the following meanings:

1. *"1MP" means First Management Plan for the PRAMA.*

2. *"2MP" means Second Management Plan for the PRAMA.*

3. *"3MP" means Third Management Plan for the PRAMA.*

4. *"4MP" means Fourth Management Plan for the PRAMA.*

5. *"5MP" means the Fifth Management Plan for the PRAMA.*

6. *"ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA" means the list of low water use / drought tolerant plants found on ADWR's website, http://www.azwater.gov/azdwr/WaterManagement/AMAs/PrescottAMAFourthManagementPlan.htm including any modifications to the list.*

7. *"Industrial process purposes" means water that is used by an industrial user directly in the creation or manufacture of a product.*

8. *"Industrial use" means a non-irrigation use of water not supplied by a city, town or private water company, including animal industry use and expanded animal industry use.*

9. *"Industrial user" means a person who uses water for industrial uses.*

10. *"PRAMA" means the Prescott Active Management Area.*

11. *"Reclaimed water" has the same definition as effluent in A.R.S.§ 45-101*

12. *"Single pass cooling and heating" means the use of water without recirculation to increase or decrease the temperature of equipment, a stored liquid or a confined air space.*

13. *"Wastewater" means water that is discharged after an industrial or municipal use, excluding reclaimed water.*

6-1302 Conservation Requirements

Beginning January 1, 2017, or upon commencement of water use, whichever is later, and continuing thereafter until the first compliance date for any substitute conservation requirement in the 5MP, an industrial user who uses groundwater shall comply with the following requirements:

1. *Avoid waste; use only the amount of water from any source, including reclaimed water, reasonably required for each industrial use; and make diligent efforts to recycle water.*

2. *Do not use water for non-residential single-pass cooling or heating purposes unless the water is reused for other purposes.*

3. *Use plants listed in the ADWR Low Water Use/Drought Tolerant Plant List for the PRAMA for landscaping to the maximum extent feasible, and water with a water efficient irrigation system. An industrial user regulated as a turf-related facility under sections 6-1401, et seq., or as a new large landscape user under section 6-1801, et seq., is exempt from this requirement.*

4. *Do not serve or use groundwater for the purpose of watering landscaping plants planted on or after January 1, 2002 within any publicly owned right-of-way of a highway, street, road, sidewalk, curb or shoulder which is used for travel in any ordinary mode, including pedestrian travel, unless the plants are listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA. The director may waive this requirement upon request from the industrial user if the industrial user demonstrates to the satisfaction of the director that plants listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA cannot grow in the publicly owned right-of-way because of high elevation or low light conditions, such as a freeway underpass. This requirement does not apply to any portion of a residential lot that extends into a publicly owned right-of-way.*

5. *Do not serve or use groundwater for the purpose of maintaining water features, including fountains, waterfalls, ponds, watercourses, and other artificial water structures, installed after January 1, 2002 within any publicly owned right-of-way of a highway, street, road, sidewalk, curb or shoulder which is used for travel in any ordinary mode, including pedestrian travel. This requirement does not apply to any portion of a residential lot that extends into a publicly owned right-of-way.*

6-1303 Monitoring and Reporting Requirements

A. Requirements

For calendar year 2017, or the calendar year in which the facility first begins to use water, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute monitoring and reporting requirement in the 5MP, an industrial user who uses groundwater shall, except as provided for in subsection B below, include the following information in its annual report required by A.R.S. § 45-632:

1. *The total quantity of water by source, including reclaimed water, withdrawn, diverted or received during the reporting year for industrial process purposes, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

2. *The total quantity of water by source, including reclaimed water, withdrawn, diverted or received during the reporting year for purposes other than industrial process purposes, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

3. *An estimate of the quantity of wastewater generated during the reporting year.*

4. *An estimate of the quantity of wastewater recycled during the reporting year.*

5. *A description of the primary purposes for which water from any source, including reclaimed water, is used.*

6. *The number of acres of land that were planted with plants listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA during the calendar year as a result of removal of plants not listed on ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA. An industrial user regulated as a turf-related facility under section 6-1401, et seq., or as a new large landscape user under section 6-1801, et seq., is exempt from this requirement.*

B. Exemption

An industrial user who holds a Type 1 or Type 2 non-irrigation grandfathered right or a groundwater withdrawal permit in the amount of 10 or fewer acre-feet per year, is exempt from the requirements set forth in subsection A of this section, unless the industrial user holds more than one such right or permit in the aggregate amount of more than 10 acre-feet per year and withdraws more than 10 acre-feet of groundwater during the calendar year pursuant to those rights or permits.

6-1304 Remediated Groundwater Accounting for Conservation Requirements

A. Accounting

Groundwater withdrawn pursuant to an approved remedial action project under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or Title 49, Arizona Revised Statutes, and used by a person subject to a conservation requirement established under this chapter, shall be accounted for consistent with the accounting for surface water for purposes of determining the person's compliance with the conservation requirement, subject to the provisions of subsections B through D of this section.

B. Amount of Groundwater Eligible for Accounting

For each approved remedial action project, the annual amount of groundwater that is eligible for the remediated groundwater accounting provided in subsection A of this section is the project's annual authorized volume. The annual authorized volume for a remedial action project approved on or after June 15, 1999 is the maximum annual volume of groundwater that may be withdrawn pursuant to the project, as specified in a consent decree or other document approved by the United States Environmental Protection Agency (EPA) or the Arizona Department of Environmental Quality (ADEQ). The annual authorized volume for a project approved prior to June 15,1999 is the highest annual use of groundwater withdrawn pursuant to the project prior to January 1, 1999, except that if a consent decree or other document approved by the EPA or ADEQ specifies the maximum annual volume of groundwater that may be withdrawn pursuant to the project, the project's annual authorized volume is the maximum annual volume of groundwater specified in that document. The director may modify the annual authorized volume for a remedial action project as follows:

1. *For an approved remedial action project associated with a treatment plant that was in operation prior to June 15, 1999, a person may request an increase in the annual*

authorized volume at the same time the notice is submitted pursuant to subsection C of this section. The director shall increase the annual authorized volume up to the maximum treatment capacity of the treatment plant if adequate documentation is submitted to the director demonstrating that an increase is necessary to further the purpose of the remedial action project and the increase is not in violation of the consent decree or other document approved by the EPA or ADEQ.

2. *A person may request an increase in the annual authorized volume of an approved remedial action project at any time if it is necessary to withdraw groundwater in excess of the annual authorized volume to further the purpose of the project. The director shall increase the annual authorized volume up to the maximum volume needed to further the purpose of the project if adequate documentation justifying the increase is submitted to the director and the increase is not in violation of the consent decree or other document approved by the EPA or ADEQ.*

3. *The director shall modify the annual authorized volume of an approved remedial action project to conform to any change in the consent decree or other document approved by the EPA or ADEQ if the person desiring the modification gives the director written notice of the change within thirty days after the change. The notice shall include a copy of the legally binding agreement changing the consent decree or other document approved by the EPA or ADEQ.*

C. Notification

To qualify for the remediated groundwater accounting provided in subsection A of this section, the person desiring the accounting must notify the director in writing of the anticipated withdrawal of groundwater pursuant to an approved remedial action project under CERCLA or Title 49, Arizona Revised Statutes, prior to the withdrawal. At the time the notice is given, the person desiring the accounting must be using remediated groundwater pursuant to the approved remedial action project or must have agreed to do so through a consent decree or other document approved by the EPA or ADEQ. The notice required by this subsection shall include all of the following:

1. *A copy of a document approved by ADEQ or the EPA, such as the Remedial Action Plan (RAP), Record of Decision (ROD) or consent decree, authorizing the remediated groundwater project. Unless expressly specified in the document, the person shall include in the notice the volume of groundwater that will be pumped annually pursuant to the project, the time period to which the document applies, and the annual authorized volume of groundwater that may be withdrawn pursuant to the project.*

2. *The purpose for which the remediated groundwater will be used.*

3. *The name and telephone number of a contact person.*

4. *Any other information required by the director.*

D. Monitoring and Reporting Requirements

To qualify for the remediated groundwater accounting for conservation requirements as provided in subsection A of this section, groundwater withdrawn pursuant to the approved remedial action project must be metered separately from groundwater withdrawn in

association with another groundwater withdrawal authority for the same or other end use. A person desiring the remediated groundwater accounting for conservation requirements shall indicate in its annual report under A.R.S. § 45-632 the volume of water withdrawn and used during the previous calendar year that qualifies for the accounting.

6.14 INDUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR TURF-RELATED FACILITIES

6-1401 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes, and section 6-1301 of this chapter, unless the context otherwise requires, the following words and phrases used in sections 6-1401 through 6-1405 shall have the following meanings:

1. *"Body of water" means a constructed body of water or interconnected bodies of water, including a lake, pond, lagoon, or swimming pool, that has a surface area greater than 12,320 square feet when full, and that is filled or refilled primarily for landscape, scenic, recreational purposes or regulatory storage.*

2. *"Common area" means an area or areas which is owned and operated as a single integrated facility and which is used for recreational or open space purposes. A common area is maintained for the benefit of the residents of a housing development.*

3. *"Contiguous" means in contact at any point along a boundary, or part of the same master planned community. Two parcels of land are contiguous if they are separated only by one or more of the following: a road, easement or right-of-way.*

4. *"Direct use reclaimed water" means reclaimed water transported directly from a facility regulated pursuant to Title 49, Chapter 2, Arizona Revised Statutes, to an end user. Direct use reclaimed water does not include reclaimed water that has been stored pursuant to Title 45, Chapter 3.1, Arizona Revised Statutes.*

5. *"Golf course" means a turf-related facility used for playing golf with a minimum of nine holes and including any practice areas.*

6. *"Hole" means a component of a golf course consisting of a tee and a green. A practice area or driving range is not a hole.*

7. *"Landscape watering" means the application of water from any source, including reclaimed water, to a water-intensive landscaped area, a low water use landscaped area or revegetation acres within a turf-related facility.*

8. *"Low water use landscaped area" means an area of land of at least one acre in aggregate, which is an integral part of a turf-related facility, watered by a permanent water application system and planted primarily with plants listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA. Mature vegetation planted in a low water use landscaped area must cover at least 50 percent of the area.*

9. *"Newly turfed area" means, for a calendar year, an area of land planted with a turfgrass species which was not planted with any turfgrass species during the preceding calendar year.*

10. *"Post-1984 turf-related facility" means a turf-related facility that was neither in operation as of December 31, 1984 nor substantially commenced as of December 31, 1984.*

11. *"Pre-1985 turf-related facility" means a turf-related facility that was either in operation as of December 31, 1984, or substantially commenced as of December 31, 1984, and includes any expanded or modified portion of such a facility.*

12. *"Reclaimed water recovered within the area of impact" means reclaimed water that has been stored pursuant to Title 45, Chapter 3.1, Arizona Revised Statutes and recovered within the area of impact of the stored water. For purposes of this definition, "area of impact" has the same meaning as prescribed by A.R.S. § 45-802.01.*

13. *"Revegetation acres" means acreage contiguous to a turf-related facility that has been approved by the director as qualifying for a revegetation allotment addition.*

14. *"Substantially commenced as of December 31, 1984" means, with regard to the construction of a turf-related facility, that the owner or operator of the facility had obtained all pre-construction permits and approvals required by federal, state or local governments for the facility by December 31, 1984, or had made a substantial capital investment in the physical on-site construction of the facility by December 31, 1984.*

15. *"Total cemetery area" means an area of land being used for cemetery-related purposes, including any area of land covered by grave markers or by cemetery-related buildings, walks, pathways, and landscaping, but not including roads, parking lots, and any areas of land being held for future expansion of the cemetery.*

16. *"Turf acres" means an area of land that is watered with a permanent water application system and planted primarily with plants not listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA.*

17. *"Turf-related facility" means any facility, including a school, park, cemetery, golf course or common area of a housing development, with a water-intensive landscaped area of ten or more acres.*

18. *"Water-intensive landscaped area" means, for a calendar year, the turf acres and water surface acres within a turf-related facility.*

19. *"Water surface acres" means the total surface area of all bodies of water that are an integral part of a turf-related facility. Bodies of water used primarily for swimming purposes are not an integral part of the water-intensive landscaped area of a turf-related facility.*

6-1402 Conservation Requirements for Turf-Related Facilities

A. Maximum Annual Water Allotment

Beginning with calendar year 2017, or the calendar year in which landscape watering commences, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute conservation requirement in the 5MP, an industrial user who uses groundwater at a turf-related facility during the calendar year shall not withdraw, divert or receive water for landscape watering purposes at the facility during a calendar year in an amount which exceeds the turf-related facility's maximum annual water allotment for the year as calculated pursuant to section 6-1403.

B. Conservation Plan for Post-1984 Turf-Related Facilities

No later than 180 days after receiving official notice of these conservation requirements, an industrial user who uses groundwater at a post-1984 turf-related facility shall prepare an updated conservation plan for the facility which contains an accurate and detailed description of the conservation technologies, including management practices, that are applied at the facility when water is used for landscape watering purposes. The industrial user shall maintain the plan until the first compliance date for any substitute conservation requirement in the 5MP.

C. Limiting Water-Intensive Landscaped Area Within Post-1984 Turf-Related Facilities that are not Golf Courses

1. *Beginning on January 1, 2017, or upon commencement of landscape watering, whichever occurs later, and continuing until the first compliance date for any substitute requirement in the 5MP, an industrial user who uses groundwater at a turf-related facility that is not a golf course shall design, construct, and maintain the grounds of the facility in a manner that minimizes the water-intensive landscaped area of the facility consistent with the use of the facility. All of the facility's water-intensive landscaping shall be located in those areas directly associated with the turf-related facility's primary purpose.*

2. *Beginning on January 1, 2017, or upon commencement of landscape watering, whichever is later, and continuing until the effective date of any substitute conservation requirement in the 5MP, an industrial user who uses groundwater at a turf-related facility that is a cemetery shall limit the water-intensive landscaped area within any portion of the facility that was neither in operation as of December 31, 1984 nor substantially commenced as of December 31, 1984 so that no more than 75 percent of the total area within that portion of the cemetery is planted with plants not listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA. This requirement shall not apply to any expanded portion of a cemetery that was in operation as of December 31, 1984 or that was substantially commenced as of December 31, 1984 if the expanded portion of the cemetery was under the same ownership as the cemetery as of December 31, 1984.*

6-1403 Calculation of Maximum Annual Water Allotment for Turf-Related Facilities

A. Turf-Related Facilities that are Not Golf Courses

For each calendar year, the maximum annual water allotment for a turf-related facility that is not a golf course shall be calculated by multiplying the number of acres in existence within the facility during the calendar year in each of the categories listed in Table 6-4, by the applicable application rate listed in Table 6-4 and then adding together the products plus any allotment additions as determined under subsection D of this section.

B. Pre-1985 Turf-Related Facilities that are Golf Courses

For each calendar year, the maximum annual water allotment for a pre-1985 turf-related facility that is a golf course shall be calculated by multiplying the number of acres in existence within the facility during the calendar year in each of the categories listed in Table 6-4 by the applicable application rate listed in Table 6-4 and then adding together the products plus any allotment additions as determined under subsection D of this section. The maximum annual water allotment is subject to the following limitations:

1. *In determining the number of water surface acres in existence within the facility during the calendar year, the total surface area of any bodies of water added to the facility after December 31, 1984 and not filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact shall be limited to an area calculated by multiplying the number of holes added to the facility after December 31, 1984 by 0.14 acre per hole. For purposes of this paragraph, a body of water filled and refilled pursuant to an interim water use permit issued under A.R.S. § 45-133 shall be deemed to be filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact if the body of water will be filled and refilled exclusively with one of those types of reclaimed water after the permit expires.*

2. *The total allotment for any turf acres and low water use landscaped area added to the facility after December 31, 1984 shall not exceed an amount calculated by multiplying the number of holes added to the facility after December 31, 1984 by 24.5 acre-feet of water per hole, plus any allotment additions allowed under subsection D of this section.*

C. Post-1984 Turf-Related Facilities that are Golf Courses

The maximum annual water allotment for a post-1984 turf-related facility that is a golf course shall be calculated by multiplying the number of acres in existence within the facility during the calendar year in each of the categories listed in Table 6-4 by the applicable application rate listed in Table 6-4 and then adding together the products, plus any allotment additions as determined under subsection D of this section. The maximum annual water allotment is subject to the following limitations:

1. *In determining the number of water surface acres in existence within the facility during the year, the total surface area of all bodies of water not filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact shall be limited to an area calculated by multiplying the number of holes present within the facility during the year by 0.14 acre per hole. For purposes of this paragraph, a body of water filled and refilled pursuant to an interim water use permit issued under A.R.S. § 45-133 shall be deemed to be filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact if the body of water will be filled and refilled exclusively with one of those types of reclaimed water after the permit expires.*

2. *The total allotment for turf acres and low water use landscaped area within the facility during the year shall not exceed an amount calculated by multiplying the number of holes present within the facility during the year by 24.5 acre-feet of water per hole, plus any allotment additions allowed under subsection D of this section.*

D. Allotment Additions

1. *Newly Turfed Area Establishment Addition*

   For any year in which a turfgrass species is planted at a turf-related facility, the facility shall receive an allotment addition of 0.8 acre-foot of water per acre of newly turfed area. For golf courses, the newly turfed area establishment addition shall not exceed an amount calculated by multiplying the number of holes present within the newly turfed area by 4 acre-feet of water.

2. *Revegetation Addition*

   The owner or operator of a turf-related facility may apply to the director for an allotment addition to revegetate areas within and around the facility after initial construction or renovation of new acres. The director may allow up to an additional 1.5 acre-feet of water per acre for up to three years if the following conditions apply to the acres for which the revegetation addition is sought:

   a. *The plants which are planted within the revegetation area are listed in ADWR's Low Water Use/Drought Tolerant Plant List for the PRAMA or were adapted to the site conditions prior to construction;*

   b. *The aggregate area to be watered exceeds one acre and has at least 50 percent vegetative cover at maturity;*

   c. *An allotment is not provided for the revegetation area under subsection A, B or C of this section; and*

   d. *All of the water applied to the revegetation acres is measured and reported as part of the total water use of the facility.*

3. *Body of Water Fill and Refill Addition*

   a. *A turf-related facility shall receive a one-time body of water fill allotment addition equal to the volume of water used for the initial filling of any new body of water added after January 1, 2017 within the facility. The facility shall receive the allotment addition only for the calendar year in which the body of water is filled. An allotment addition shall not be given for any body of water or portion of a body of water within a golf course that is excluded from the calculation of a golf course's maximum annual water allotment under subsection B, paragraph 1 or subsection C, paragraph 1.*

   b. *If a body of water at a turf-related facility is drained or partially drained to allow for repairs to reduce water losses, the owner or operator of the facility may apply to the director for an addition to the facility's maximum annual water allotment in the amount of water necessary to refill the body of water. The director shall grant the allotment addition if the director determines that draining the body of water was necessary to allow for repairs to reduce water losses. The facility shall receive the allotment addition only for the calendar year in which the body of water is filled. An allotment addition shall not be given for any body of water or portion of a body of water within a golf course that is excluded from the calculation of the golf course's*

maximum annual water allotment under subsection B, paragraph 1 or subsection C, paragraph 1.

4. *Removed Acreage Addition*

A pre-1985 turf-related facility that removes acres of water-intensive landscaped area that were in existence within the facility on or before December 31, 1984, shall receive an allotment addition equal to the allotment the acres would have received pursuant to the 4MP if they had not been removed, provided that the acres were given a water allotment in the 1MP, the 2MP, or the 3MP.

5. *Leaching Allotment Addition*

The owner or operator of a turf-related facility may apply to the director for an allotment addition for leaching purposes. The director shall approve the application if the water supply used for landscape watering at the facility contains at least 1,000 milligrams per liter of total dissolved solids. If the director approves an allotment addition for leaching purposes, the director shall calculate the additional allotment as follows:

Leaching Allotment Addition: $$\left(\frac{1}{1 - \left(\frac{EC_w}{5EC_e - EC_w} \right)} - 1 \right) \times \frac{CU}{0.75}$$

Where:

Ec_w *= electrical conductivity of water used*

Ec_e *= Tolerance of the grass species grown to the soil salinity in electrical conductivity of the soil saturation extract*

CU = Consumptive use requirement for the grass species

Any allotment addition granted under this paragraph shall remain in effect until the water supply used for landscape watering at the facility contains less than 1,000 milligrams per liter of total dissolved solids, or until the first compliance date for the facility's conservation requirements in the 5MP, whichever occurs first.

E. Combined Allotments for Contiguous Facilities

The maximum annual water allotments for contiguous turf-related facilities under one ownership or operation may be combined. All or a portion of the combined maximum water allotment may be applied to any part of the contiguous facilities.

F. *Nothing in this section shall be construed as authorizing the use of more groundwater or surface water than may be used pursuant to any groundwater or appropriable water rights or permits associated with the use. Nor shall this section be construed as authorizing the use of groundwater or surface water in any manner that violates Chapter 1 or Chapter 2 of Title 45, Arizona Revised Statutes.*

6-1404 Compliance with Maximum Annual Water Allotment

A. Reclaimed Water Use Adjustment

For purposes of determining compliance with the maximum annual water allotment requirement, the director shall count each acre-foot of direct use reclaimed water or reclaimed water recovered within the area of impact used at the facility for landscape watering purposes during the calendar year as 0.6 acre-foot of water.

B. *A turf-related facility is in compliance with its maximum annual water allotment for a given calendar year if the director determines that either of the following apply:*

1. *The amount of water from any source, including reclaimed water, used by the facility for landscape watering purposes during that calendar year does not exceed the facility's maximum annual water allotment for that year, or*

2. *The aggregate amount of water from any source, including reclaimed water, used by the facility for landscape watering purposes during that calendar year and the preceding two calendar years divided by three does not exceed the sum of the maximum annual water allotments for those three years divided by three.*

6-1405 Monitoring and Reporting Requirements

A. *An industrial user who uses water at a turf-related facility that commences landscape watering within any new turfed acres, low water use landscaped area or water surface acres after January 1, 2017 shall submit to the director documentation of the new acres no later than 90 days after commencing landscape watering to the new acres or receiving notice of these conservation requirements, whichever is later. The scale of the submitted documents, extent of turf acres, water surface acres, and low water use landscaped area must clearly be shown. Documentation may consist of one or more of the following:*

1. *As-built plans certified by a registered professional such as a civil engineer, golf course designer or landscape architect.*

2. *Aerial photography at a scale no smaller than 1"=200'.*

3. *A survey of the facility certified by a registered professional such a civil engineer or land surveyor.*

4. *Any other documentation upon approval by the director.*

B. *For calendar year 2017, or the calendar year in which landscape watering commences, whichever occurs later, and for each calendar year thereafter until the first compliance date for any substitute monitoring and reporting requirement in the 5MP, an industrial user who uses groundwater at a turf-related facility shall include in the annual reports required by A.R.S. § 45-632 the following information:*

1. *The total quantity of water by source, disaggregated by source, withdrawn, diverted, or received during the calendar year for landscape watering purposes at the facility, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

2. *The total amount of reclaimed water, disaggregated by source, direct use reclaimed water, reclaimed water recovered within the area of impact, and reclaimed water recovered outside the area of impact that was withdrawn or received during the calendar year for landscape watering purposes at the facility as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

3. *The number of turf acres within the facility during the calendar year, not including newly turfed area.*

4. *The number of acres of total water surface area within the facility during the calendar year.*

5. *The number of acres of low water use landscaped area within the facility during the calendar year.*

6. *The number of acres of newly turfed area within the facility during the calendar year.*

7. *The number of turf acres removed within the facility during the calendar year.*

8. *The number of acres of total water surface area added or removed within the facility during the calendar year.*

9. *The number of acres of low water use landscaped area added or removed within the facility during the calendar year.*

10. *If the facility is a golf course, the length of the course as measured from the back of each tee ground farthest from the associated green, then down the center line of the hole to the center of the green.*

11. *The number of acres approved by the director for a revegetation addition pursuant to section 6-1403, subsection D, paragraph 2 within the facility during the calendar year.*

12. *The quantity of water used to fill or refill a body of water within the facility during the calendar year for which an allotment addition is sought pursuant to section 6-1403, subsection D, paragraph 3.*

13. *If the facility is a golf course, the number of holes within the facility during the calendar year.*

14. *If the facility is a golf course, the number of holes added during the calendar year.*

15. *If the facility is a golf course that qualifies as a pre-1985 turf-related facility, the number of acres of turf acres, low water use landscaped area and water surface acres added to the facility after December 31, 1984, and the number of holes added to the facility after December 31, 1984.*

16. *An estimate of the quantity of water from any source, including reclaimed water, used for each purpose other than landscape watering purposes at the facility during the reporting year. Any water used at the facility that is not measured separately from the water used for landscape watering shall be counted by the director as water used by the facility for*

landscape watering for purposes of calculating the compliance with the maximum annual water allotment.

C. *A single annual report may be filed for contiguous turf-related facilities if the maximum annual water allotments of the facilities are combined pursuant to section 6-1403, subsection E. The annual report shall report water use and landscaped areas of the contiguous facilities as required in subsection B of this section.*

TABLE 6-4
APPLICATION RATES FOR TURF-RELATED FACILITIES
PRESCOTT ACTIVE MANAGEMENT AREA

From 2016 until the first compliance date for any substitute requirement in the 5MP

	Application Rate - Turf Acre
All Facilities	*4.9 acre-feet per acre per calendar year*

	Application Rate - Total Water Surface Area
All Facilities	*5.5 acre-feet per acre per calendar year*

	Application Rate - Low Water Use Landscaped Area
All Facilities	*1.5 acre-feet per acre per calendar year*

6.15 INDUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR SAND AND GRAVEL FACILITIES

6-1501 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes and section 6-1301 of this chapter, unless the context otherwise requires, the following words and phrases used in sections 6-1502 and 6-1503 shall have the following meanings:

1. *"Alternative water supply" means a water source other than groundwater of drinking water quality.*

2. *"Sand and gravel facility" means a facility that produces sand and gravel and that uses more than 100 acre-feet of water from any source per calendar year. For purposes of this definition, the annual water use shall include all water used by the facility regardless of the nature of the use.*

3. *"Rock out method" means agitating rock inside concrete truck mixer drums for the purpose of cleaning excess concrete from the drums.*

4. *"Wash water" means water used for washing or sorting sand, gravel, or other aggregates.*

6-1502 Conservation Requirements

A. Standard Conservation Requirements

Beginning on January 1, 2017, or upon commencement of water use, whichever occurs later, and continuing thereafter until the first compliance date for any substitute conservation requirements in the 5MP, an industrial user who uses groundwater at a sand and gravel facility shall comply with the following conservation requirements:

1. *If sufficient land area for construction and operation of disposal ponds is available at a reasonable price, the industrial user shall construct disposal ponds at the sand and gravel facility. All wash water, all water used for wet scrubbers at asphalt plants, all runoff from cleanup operations and all drainage from sand and gravel piles shall be discharged or diverted into the disposal ponds unless prohibited by state or federal environmental regulations. The disposal ponds shall contain a barge pump or sump pump of sufficient capacity, together with any necessary additional equipment, to assure the maximum reclamation of the water. The water shall be reclaimed and reused at the sand and gravel facility unless prohibited by state or federal regulations.*

2. *If sufficient land area for the construction and operation of disposal ponds is not available at a reasonable price, clarifiers shall be used at the sand and gravel facility for reclaiming wash water, all water used for wet scrubbers at asphalt plants, runoff from cleanup operations and all drainage from sand and gravel piles. The clarifiers shall be designed and operated to assure the maximum reclamation of water. The water shall be reclaimed and reused at the sand and gravel facility unless prohibited by state or federal regulations.*

3. *At least one of the following techniques or technologies designed to reduce water use for dust control shall be implemented at the sand and gravel facility:*

    a. *The placement of binding agents on all haul roads;*

    b. *The paving of all haul roads;*

    c. *The placement of recycled asphalt on all haul roads;*

    d. *The placement of medium sized aggregate or "pea gravel" on all haul roads; or*

    e. *A technology or technique designed to reduce water use for dust control not included in subparagraphs a through d of this paragraph that demonstrates water savings equivalent to any of the technologies or techniques listed in subparagraphs a through d, and that has been approved by the director.*

    The industrial user shall have sole discretion in determining whether to implement more than one of the above technologies.

4. *At least one of the following techniques or technologies designed to reduce water use for cleaning shall be implemented at the sand and gravel facility:*

    a. *Use of metered timers for truck washing and other cleanup activities;*

    b. *Use of the "rock out method" of cleaning concrete from truck mixer drums;*

c. Use of concrete set-arresting agent chemical applications to clean concrete from truck mixer drums; or

d. A technology or technique designed to reduce water use for cleaning that is not included in subparagraphs a through c of this paragraph that demonstrates water savings equivalent to any of the measures listed in subparagraphs a through c and that has been approved by the director.

The industrial user shall have sole discretion in determining whether to implement more than one of the above technologies.

B. Substitute Conservation Requirements

1. An industrial user who uses groundwater at a sand and gravel facility may apply to the director to use conservation technologies other than the standard conservation requirements prescribed in subsection A of this section. The director may approve the use of substitute conservation technologies if both of the following apply:

a. The industrial user has submitted a detailed description of the proposed substitute technologies and the water savings that can be achieved by the use of those technologies, and;

b. The director determines that the proposed substitute conservation technologies will result in a water savings equal to or greater than the savings that would be achieved by the standard conservation requirements prescribed in subsection A.

2. If the director approves an industrial user's request to use conservation technologies other than the standard conservation requirements prescribed in subsection A of this section, the industrial user shall comply with the substitute conservation technologies approved by the director beginning on the date determined by the director and continuing until the first compliance date for any substitute conservation requirement in the 5MP.

C. Conservation Plan

1. Not later than 180 days after receiving notice of these conservation requirements, an industrial user who uses water at a sand and gravel facility, including an industrial user who acquires ownership of an existing sand and gravel facility after the first compliance date of the 4MP, shall submit to the director a plan to improve the efficiency of water use at the facility on a form provided by the director. The plan shall analyze the economic feasibility of implementing all of the following at the facility:

a. Disposal pond surface area reduction;

b. The use of clarifiers for recycling water;

c. Use of a renewable water supply if such a supply is available within a one mile radius of the facility.

2. The economic analysis must analyze the potential costs and savings associated with the following:

a. Labor (including planning, construction, operation, maintenance, and management time);
b. Equipment (values amortized over the projected life of the equipment);
c. Land value (including value of mineral reserves);
d. Water costs (including pumping costs, well maintenance, and withdrawal taxes);
e. Costs for chemicals and raw materials,
f. Fuel or energy costs;
g. Industrial wastewater disposal costs;
h. Sewage disposal costs;
i. Changes in revenue caused by changing production rate, minimizing "down-time" or increasing the size of reserves;
j. Regulatory permitting costs.

6-1503 Monitoring and Reporting Requirements

For calendar year 2017, or the calendar year in which the sand and gravel facility first commences using water, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute monitoring and reporting requirement in the 5MP, an industrial user who uses water at a sand and gravel facility shall include the following information in its annual reports required by A.R.S. § 45-632.

1. *The quantity of water reclaimed from disposal ponds or clarifiers during the calendar year, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

2. *The quantity of water from any source, including reclaimed water, supplied to the wash plant during the calendar year, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

3. *The quantity of water from any source, including reclaimed water, supplied to the asphalt plant during the calendar year, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

4. *The aggregate surface area of any disposal ponds.*

5. *The average depth of any disposal ponds.*

6. *The estimated quantity of water from any source, including reclaimed water, used during the calendar year for:*

    a. *Industrial process purposes. Water used for industrial process purposes includes water used for sanitary waste disposal but does not include water for cooling and cleaning purposes.*

    b. *Non-domestic cooling purposes.*

    c. *Non-domestic cleaning purposes. Water use for non-domestic purposes includes truck washing, truck mixer drum washing, or other non-domestic cleaning purposes.*

    d. *Road dust control.*

e. Landscape watering.

f. Other purposes.

7. The tonnage of material washed during the calendar year.

6.16 INUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR LARGE-SCALE POWER PLANTS

6-1601 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes and section 6-1301 of this chapter, unless the context otherwise requires, the following words and phrases shall have the following meanings:

1. "Blowdown water" means water discharged from a cooling tower recirculating water stream to control the buildup of minerals or other impurities in the recirculating water.

2. "Combustion turbine electric power plant" means an industrial facility that produces or is designed to produce more than 25 megawatts of electricity by utilizing an internal combustion engine in which the expanding gases from the combustion chamber drive the blades of a turbine which turns a generator to produce electricity

3. "Conservative mineral constituent" means a component of recirculating water in a cooling tower, the concentration of which is not significantly modified by precipitation, loss to the atmosphere or the addition of treatment chemicals.

4. "Continuous blowdown and make-up" means patterns in cooling tower operation that include continuous blowdown and make-up or frequent periodic blowdown and make-up of recirculating water.

5. "Cycles of concentration" means the ratio of the concentration of total dissolved solids, other conservative mineral constituent or electrical conductivity in the blowdown water to the concentration of this same constituent or electrical conductivity in the make-up water. This can be calculated by dividing the total make-up water by the total blowdown water.

6. "Reclaimed water-served cooling tower" means a cooling tower served by a make-up water supply that on an annual average basis consists of 50 percent or more reclaimed water.

7. "Fully operational cooling tower" means a cooling tower that is functioning to dissipate heat from a large-scale power plant that is generating electricity.

8. "Large-scale power plant" means an industrial facility that produces or is designed to produce more than 25 megawatts of electricity including Steam electric power plants and combustion turbine plants.

9. "Limiting constituent" means a chemical, physical, or biological constituent present in recirculating cooling tower water that, due to potential physical or biological factors or due to potential exceedence of any federal, state, or local environmental standards upon

discharge as blowdown, should not be allowed to accumulate in recirculating cooling tower water above a certain concentration.

10. *"Make-up water" means the water added back into the cooling tower recirculating water stream to replace water lost to evaporation, blowdown, or other mechanisms of water loss.*

11. *"Steam electric power plant" means an industrial facility that produces or is designed to produce more than 25 megawatts of electricity by utilizing the Rankin Steam Cycle in which water is heated, turns into steam and spins a steam turbine which drives an electrical generator.*

6-1602 Conservation Requirements for Steam Electric Power Plants

A. Conservation Requirements

Beginning on January 1, 2017 or upon commencement of water use, whichever occurs later, and continuing thereafter until the first compliance date for any substitute conservation requirement in the 5MP, an industrial user who uses groundwater at a steam electric power plant shall comply with the following requirements:

1. *An annual average of 15 or more cycles of concentration shall be achieved during periods when the steam electric power plant is generating electricity.*

2. *The maximum amount of wastewater feasible, excluding blowdown water and sanitary wastewater, shall be diverted to the cooling process so long as this stream does not have a negative impact on the cycles of concentration or any other environmental requirement.*

B. Cycles of Concentration Adjustment Due to the Quality of Recirculating Water

An industrial user who uses groundwater at a steam electric power plant may apply to the director for an adjustment to the cycles of concentration requirements set forth in subsection A of this section if compliance with the cycles of concentration requirements would likely result in damage to cooling towers or associated equipment or exceedence of federal, state or local environmental discharge standards because of the quality of recirculating water. To apply for an adjustment to the cycles of concentration requirements based on recirculating water quality, an industrial user shall submit a request in writing to the director that includes the following information:

1. *Historic, current and projected water quality data for the relevant constituent(s).*

2. *Documentation describing the potential damage to cooling towers or associated equipment, or documentation of environmental standards that are likely to be exceeded, whichever applies.*

The director shall grant the request if the director determines that compliance with the cycles of concentration requirements set forth in subsection A of this section would likely result in damage to cooling towers or associated equipment or exceedence of federal, state, or local environmental discharge standards because of the quality of recirculating water. Any cycles of concentration adjustment granted pursuant to this subsection shall apply only while the quality of recirculating water would cause compliance with the cycles of concentration

requirements to likely result in damage to cooling towers or associated equipment or exceedence of federal, state or local environmental discharge standards.

C. Exemption and Cycles of Concentration Adjustment Due to the Quality of Reclaimed Water Make-up Water Supplies

1. The cycles of concentration requirements set forth in subsections A and B of this section do not apply to any reclaimed water-served cooling tower at a steam electric power plant during the first 12 consecutive months in which more than 50 percent of the water supplied to the cooling tower is reclaimed water.

2. Within 30 days after the 12-month exemption period expires, the industrial user who uses water at the steam electric power plant may apply to the director for a cycles of concentration adjustment to lower the cycles of concentration requirement for the reclaimed water-served cooling tower if compliance with the requirement would not be possible due to the presence of a limiting constituent in the reclaimed water supplying the tower. To apply for an alternative cycles of concentration requirement to address such a limiting constituent, an industrial user shall submit a request in writing to the director that includes the following information:

a. The limiting constituent(s) that is present in the reclaimed water supplying the tower that results in the need to blow down a greater annual volume of water than that required in subsection A of this section.

b. Documentation describing the concentration at which this limiting constituent(s) should be blown down and the reason for the alternative cycles of concentration.

The director shall grant the request if the director determines that the presence of a limiting constituent in the reclaimed water supplying the cooling tower results in the need to blow down a greater annual volume of water than that required in subsection A of this section. Any cycles of concentration adjustment granted pursuant to this paragraph shall apply only while the tower qualifies as a reclaimed water-served cooling tower.

D. Substitute Conservation Requirements

1. An industrial user who uses groundwater at a steam electric power plant may apply to the director to use conservation technologies other than the standard conservation requirements prescribed in subsection A of this section. The director may approve the use of substitute conservation technologies if both of the following apply:

a. The industrial user has submitted a detailed description of the proposed substitute technologies and the water savings that can be achieved by the use of those technologies, and;

b. The director determines that the proposed substitute conservation technologies will result in a water savings equal to or greater than the savings that would be achieved by the standard conservation requirements prescribed in subsection A.

2. If the director approves an industrial user's request to use conservation technologies other than the standard conservation requirements prescribed in subsection A of this section, the industrial user shall comply with the substitute conservation technologies

approved by the director beginning on the date determined by the director and continuing until the first compliance date for any substitute conservation requirement in the 5MP.

E. Waiver

An industrial user who uses groundwater at a steam electric power plant may apply to the director for a waiver of any applicable conservation requirement in subsection A of this section by submitting a detailed, long-term plan for beneficial reuse of 100 percent of blowdown water outside the cooling circuit, including an implementation schedule. Reuse of blowdown water includes the discharge of blowdown water into pipes, canals, or other means of conveyance if the discharged water is transported to another location at the plant or off the plant for reuse.

The director shall grant a waiver request if the director determines that implementation of the plan will result in the beneficial reuse of 100 percent of blowdown water outside the cooling circuit. If a waiver request is granted, the industrial user shall implement the plan in accordance with the implementation schedule submitted to and approved by the director.

6-1603 Conservation Requirements for Combustion Turbine Electric Power Plants

A. *Beginning on January 1, 2017 or upon commencement of water use, whichever occurs later, and continuing thereafter until the first compliance date for any substitute conservation requirement in the 5MP, an industrial user who uses groundwater at a combustion turbine electric power plant shall comply with the following requirement:*

Each fully operational cooling tower with greater than or equal to 250 tons of cooling capacity at the combustion turbine electric power plant facility shall achieve a cycles of concentration level that results in blowdown water being discharged at an average annual minimum of either 120 milligrams per liter (mg/L) silica or 1,200 mg/L total hardness, whichever is reached first.

B. Exemptions and Alternative Blowdown Standards

1. *The requirement set forth in subsection A of this section does not apply to a combustion turbine electric power plant in any year in which the beneficial reuse exceeds the conservation requirement.*

2. *The requirement set forth in subsection A of this section does not apply to any reclaimed water-served cooling tower at a combustion turbine electric power plant during the first 12 consecutive months in which more than 50 percent of the water supplied to the cooling tower is reclaimed water.*

   Within 30 days after the 12-month period expires, the person using water at the reclaimed water-served cooling tower may apply to the director to use an alternative blowdown level from that required in subsection A of this section if compliance with the blowdown requirement would not be possible due to the presence of a limiting constituent other than silica or total hardness in the reclaimed water supplying the cooling tower. To apply for an alternative blowdown level to address such a limiting constituent, an industrial user shall submit a request in writing to the director which includes the following information:

a. The limiting constituent other than silica or total hardness that is present in the reclaimed water supplying the cooling tower which results in the need to blow down a greater annual volume of water than that required under subsection A of this section.

b. Documentation describing the concentration at which this limiting constituent should be blown down and the reason for the alternative blowdown level.

The director shall grant the request if the director determines that the presence of a limiting constituent other than silica or total hardness in the reclaimed water supplying the cooling tower results in the need to blow down a greater annual volume of water than that required under subsection A of this section. Any alternative blowdown level granted pursuant to this paragraph shall apply only while the cooling tower qualifies as a reclaimed water-served cooling tower.

3. A combustion turbine electric power plant may apply to the director to use an alternative blowdown level from that required in subsection A of this section if compliance with the blowdown requirement would likely result in damage to cooling towers or associated equipment or exceedence of federal, state or local environmental discharge standards because of the accumulation of a limiting constituent other than silica or total hardness in recirculating water. To apply for an alternative blowdown level for such a limiting constituent, an industrial user shall submit a request in writing to the director which includes the following information:

a. Historic, current and projected water quality data for the relevant limiting constituent(s).
b. Documentation describing the potential damage to cooling towers or associated equipment, or documentation of environmental standards that are likely to be exceeded, whichever applies.

The director shall grant the request if the director determines that compliance with the blowdown level set forth in subsection A of this section would likely result in damage to cooling towers or associated equipment or exceedence of federal, state, or local environmental discharge standards because of the accumulation of a limiting constituent other than silica or total hardness in recirculating water.

6-1604 Monitoring and Reporting Requirements

A. Monitoring and Reporting Requirements for Steam Electric Power Plants

1. For calendar year 2017 or the calendar year in which water use first commences, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute requirement in the 5MP, an industrial user who uses groundwater at a steam electric power plant shall include in its annual report required by A.R.S. § 45-632 the following information:

a. Source of water providing make-up water to each cooling tower at the facility.

b. For each cooling tower at the facility that is exempt from cycles of concentration requirements pursuant to section 6-1602, subsection C, paragraph 1 or for which a

cycles of concentration adjustment was granted pursuant to section 6-1602, subsection C, paragraph 2, the percentage of water served to the tower during the year that was reclaimed water.

c. For all fully operational cooling towers subject to cycles of concentration requirements under section 6-1602, subsection A:

i. The total quantity of blowdown water discharged from the cooling towers for each month or partial month when the facility was generating electricity during the calendar year.

ii. The total quantity of make-up water used at cooling towers for each month or partial month when the facility was generating electricity during the calendar year.

iii. The weighted average concentration of total dissolved solids or other conservative mineral constituent in make-up water and blowdown water at the cooling towers for each month or partial month when the facility was generating electricity during the calendar year, either:

1) Determined by direct analysis, or

2) Calculated based on average monthly electrical conductivity readings if the following conditions have been met: (a) correlations between electrical conductivity and total dissolved solids or between electrical conductivity and another conservative mineral constituent have been established over a period of one year or more in make-up and blowdown water and (b) documentation of these correlations has been provided to the director.

d. For each large-scale steam electric power plant that is exempt from cycles of concentration requirements pursuant to section 6-1602, subsection C, paragraph 1, or for which an adjusted cycles of concentration requirement was granted pursuant to section 6-1602, subsection B or section 6-1602, subsection C, paragraph 2:

i. The total quantity of blowdown water discharged from the cooling tower for each month or partial month when the facility was generating electricity during the calendar year.

ii. The total quantity of make-up water used at the cooling tower for each month or partial month when the facility was generating electricity during the calendar year.

iii. The weighted average concentration of total dissolved solids or other conservative mineral constituent in make-up water and blowdown water at the cooling tower for each month or partial month when the facility was generating electricity during the calendar year, either:

1) Determined by direct analysis, or

2) Calculated based on average monthly electrical conductivity readings if the following conditions have been met: (a) correlations between electrical

conductivity and total dissolved solids or between electrical conductivity and another conservative mineral constituent have been established over a period of one year or more in make-up and blowdown water and (b) documentation of these correlation has been provided to the director.

e. The amount of electricity generated each month or each partial month when the facility was generating electricity during the calendar year.

2. All water measurements required in this section shall be made with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et. seq.

B. Monitoring and Reporting Requirements for Combustion Turbine Electric Power Plants

For calendar year 2017, or the calendar year in which water use first commences, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute monitoring and reporting requirement in the 5MP, an industrial user who uses groundwater at a large-scale electric power plant that is a combustion turbine electric power plant shall include in its annual reports required by A.R.S. § 45-632 the following information for all cooling towers with 250 tons or more of cooling capacity at the facility:

1. Capacity in tons of each cooling tower.

2. For each cooling tower at the facility that is exempt from the requirements of 6-1603, subsection A pursuant to section 6-1603, subsection B, paragraph 2 or for which an alternative blowdown level has been granted, pursuant to section 6-1603, subsection B, paragraph 2, the percentage of water served to the cooling tower during the year that was reclaimed water.

3. The quantity of water from any source, specified by source, that was used for make-up water on an annual basis during the calendar year as measured with a measuring device in accordance with ADWR's measuring device rules. A.A.C. R12-15-901, et seq.

4. The quantity of water that was blown down on a annual basis during the calendar year as measured with a measuring device in accordance with ADWR's measuring device rules. A.A.C. R12-15-901, et seq.

5. The average annual concentrations of silica, total hardness or other approved limiting constituent established under section 6-1603, subsection B, paragraph 2 or 3, in make-up and blowdown water during the calendar year, reported in mg/L or other measurement units established under section 6-1603, subsection B, paragraph 2 or 3, and either:

a. Determined by direct analysis; or

b. Calculated based on average monthly electrical conductivity readings for those portions of each month when cooling towers were fully operational if the following conditions have been met: (a) correlations between electrical conductivity and silica, between electrical conductivity and total hardness or between electrical conductivity and another approved limiting constituent established pursuant to section 6-1603 subsection B, paragraph 2 or 3, have been established over a period of one year or more in make-up and blowdown water; and (b) documentation of these correlations has been provided to the director.

6.17 INDUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR LARGE-SCALE COOLING FACILITIES

6-1701 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes and section 6-1301 of this chapter, unless the context otherwise requires, the following words and phrases used in section 6-1702 and 6-1703 shall have the following meanings:

1. *"Blowdown water" means water discharged from a cooling tower recirculating water stream to control the buildup of minerals or other impurities in the recirculating water.*

2. *"Conservative mineral constituent" means a component of recirculating water in a cooling tower, the concentration of which is not significantly modified by the addition of treatment chemicals.*

3. *"Cycles of concentration" means the ratio of the concentration of a conservative mineral constituent or electrical conductivity in the blowdown water to the concentration of this same constituent or electrical conductivity in the make-up water.*

4. *"Reclaimed water-served cooling tower" means a cooling tower served by a make-up water supply which on an annual average basis consists of 50 percent or more reclaimed water.*

5. *"Fully operational cooling tower" means a cooling tower that is functioning to dissipate heat.*

6. *"Large-scale cooling facility" means a facility that has control over cooling operations with a total combined cooling capacity greater than or equal to 1,000 tons. For the purposes of this definition, the minimum cooling tower size which shall be used to determine total facility cooling capacity is 250 tons. A large-scale cooling facility does not include a large-scale power plant that utilizes cooling towers to dissipate heat.*

7. *"Large-scale power plant" means an industrial facility that produces or is designed to produce more than 25 megawatts of electricity.*

8. *"Limiting constituent" means a chemical, physical, or biological constituent present in recirculating cooling tower water, which, due to potential physical or biological factors or due to potential exceedence of any federal, state, or local environmental standards upon discharge as blowdown, should not be allowed to accumulate in recirculating cooling tower water above a certain concentration.*

9. *"Make-up water" means the water added back into the cooling tower recirculating water stream to replace water lost to evaporation, blowdown, or other mechanisms of water loss.*

6-1702 Conservation Requirements

A. Conservation Requirements for Large-Scale Cooling Facilities

Beginning on January 1, 2017, or upon commencement of water use, whichever occurs later, and continuing thereafter until the first compliance date for any substitute conservation requirement in the 5MP, an industrial user who uses water at a large-scale cooling facility shall comply with the following requirement:

Each fully operational cooling tower with greater than or equal to 250 tons of cooling capacity at the facility shall achieve a cycles of concentration level that results in blowdown water being discharged at an average annual minimum of either 120 milligrams per liter (mg/L) silica or 1,200 mg/L total hardness, whichever is reached first.

B. Exemptions and Alternative Blowdown Standards

1. *The requirement set forth in subsection A of this section does not apply to a large-scale cooling facility in any year in which 100 percent of facility blowdown water is beneficially reused.*

2. *The requirement set forth in subsection A of this section does not apply to any reclaimed water-served cooling tower at a large-scale cooling facility during the first 12 consecutive months in which more than 50 percent of the water supplied to the cooling tower is reclaimed water.*

   After the 12-month period expires, the person using water at the reclaimed water-served cooling tower may apply to the director to use an alternative blowdown level from that required in subsection A of this section if compliance with the blowdown requirement would not be possible due to the presence of a limiting constituent other than silica or total hardness in the reclaimed water supplying the cooling tower. To apply for an alternative blowdown level to address such a limiting constituent, an industrial user shall submit a request in writing to the director which includes the following information:

   a. *The limiting constituent other than silica or total hardness that is present in the reclaimed water supplying the cooling tower which results in the need to blow down a greater annual volume of water than that required under subsection A of this section.*

   b. *Documentation describing the concentration at which this limiting constituent should be blown down and the reason for the alternative blowdown level.*

   The director shall grant the request if the director determines that the presence of a limiting constituent other than silica or total hardness in the reclaimed water supplying the cooling tower results in the need to blow down a greater annual volume of water than that required under subsection A of this section. Any alternative blowdown level granted pursuant to this paragraph shall apply only while the cooling tower qualifies as a reclaimed water-served cooling tower.

3. *An industrial user may apply to the director to use an alternative blowdown level from that required in subsection A of this section if compliance with the blowdown requirement would likely result in damage to cooling towers or associated equipment or exceedence of federal, state or local environmental discharge standards because of the accumulation of a limiting constituent other than silica or total hardness in recirculating water. To apply for an alternative blowdown level for such a limiting constituent, an*

industrial user shall submit a request in writing to the director which includes the following information:

a. Historic, current and projected water quality data for the relevant limiting constituent(s).
b. Documentation describing the potential damage to cooling towers or associated equipment, or documentation of environmental standards that are likely to be exceeded, whichever applies.

The director shall grant the request if the director determines that compliance with the blowdown level set forth in subsection A of this section would likely result in damage to cooling towers or associated equipment or exceedence of federal, state, or local environmental discharge standards because of the accumulation of a limiting constituent other than silica or total hardness in recirculating water.

6-1703 Monitoring and Reporting Requirements

For calendar year 2017, or the calendar year in which water use first commences, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute monitoring and reporting requirement in the 5MP, an industrial user who uses groundwater at a large-scale cooling facility shall include in its annual reports required by A.R.S. § 45-632 the following information for all cooling towers with 250 tons or more of cooling capacity at the facility:

1. Capacity in tons of each cooling tower.

2. Number of days per month that each cooling tower was fully operational.

3. For each cooling tower at the facility that is exempt from cycles of concentration requirements under section 6-1702, subsection B, paragraph 2 or for which an alternative blowdown level has been granted pursuant to section 6-1702, subsection B, paragraph 2, the percentage of water served to the cooling tower during the year that was reclaimed water.

4. The quantity of water from any source, specified by source, that was used for make-up water on a monthly basis during the calendar year as measured with a measuring device in accordance with ADWR's measuring device rules. A.A.C. R12-15-901, et seq.

5. The quantity of water that was blown down on a monthly basis during the calendar year as measured with a measuring device in accordance with ADWR's measuring device rules. A.A.C. R12-15-901, et seq.

6. The average monthly concentrations of silica, total hardness or other approved limiting constituent established under section 6-1702, subsection B, paragraph 2 or 3, in make-up and blowdown water for those portions of each month when cooling towers were fully operational during the calendar year, reported in mg/L or other measurement units established under section 6-1702, subsection B, paragraph 2 or 3, and either:

a. Determined by direct analysis; or

b. Calculated based on average monthly electrical conductivity readings for those portions of each month when cooling towers were fully operational if the following conditions have been met: (a) correlations between electrical conductivity and silica, between electrical conductivity and total hardness or between electrical conductivity and another approved limiting constituent established pursuant to section 6-1702 subsection B, paragraph 2 or 3, have been established over a period of one year or more in make-up and blowdown water; and (b) documentation of these correlations has been provided to the director.

6.18 INDUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR NEW LARGE LANDSCAPE USERS

6-1801 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes and section 6-1301 of this chapter, unless the context otherwise requires, the following words and phrases used in sections 6-1802 and 6-1803 shall have the following meanings:

1. "Direct use reclaimed water" means reclaimed water that is transported directly from a facility regulated pursuant to Title 49, Chapter 2, Arizona Revised Statutes, to an end user. Direct use reclaimed water does not include reclaimed water that has been stored pursuant to Title 45, Chapter 3.1, Arizona Revised Statutes.

2. "Landscapable area" means the entire area of a lot less any areas covered by structures, parking lots, roads or any other area not physically capable of being landscaped.

3. "New large landscape user" means a non-residential facility that has a water-intensive landscaped area in excess of 10,000 square feet and that has landscaping planted and maintained after January 1, 1990, or bodies of water, other than bodies of water used primarily for swimming purposes, filled and maintained after January 1, 1990, or both. The following facilities are excluded from this definition: schools, parks, cemeteries, golf courses, common areas of housing developments and public recreational facilities.

4. "Reclaimed water recovered within the area of impact" means reclaimed water that has been stored pursuant to Title 45, Chapter 3.1, Arizona Revised Statutes, and recovered within the area of impact of storage. For the purposes of this definition, "area of impact" has the same meaning as prescribed by A.R.S. § 45-802.01.

5. "Water-intensive landscaped area" means, for the calendar year in question, all of the following areas within a non-residential facility:

a. Any area of land that is planted primarily with plants not listed in ADWR's Low Water Use/Drought Tolerant Plant List for PRAMA and watered with a permanent water application system, except any area of land that is watered exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact.

b. The total water surface area of all bodies of water within the facility, except bodies of water used primarily for swimming purposes, bodies of water filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact, and bodies of water allowed under an interim water use permit

pursuant to A.R.S. § 45-133 if the bodies of water will be filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact after the permit expires.

6-1802 Conservation Requirements

A. Conservation Requirements for New Large Landscape Users that are not Hotels or Motels

Beginning on January 1, 2017, and continuing thereafter until the first compliance date for any substitute conservation requirement in the 5MP, the water-intensive landscaped area within a new large landscape user that is not a hotel or motel shall not exceed the greater of the following: 1) an area calculated by adding 10,000 square feet plus 20 percent of the facility's landscapable area in excess of 10,000 square feet; or 2) the total water surface area of all bodies of water within the facility that are allowed under A.R.S. § 45-131, et seq., and that qualify as water-intensive landscaped area.

B. Conservation Requirements for New Large Landscape Users that are Hotels or Motels

Beginning on January 1, 2017, and continuing thereafter until the first compliance date for any substitute conservation requirement in the 5MP, the water-intensive landscaped area within a new large landscape user that is a hotel or motel shall not exceed the greater of the following: 1) an area calculated by adding 20,000 square feet plus 20 percent of the facility's landscapable area in excess of 20,000 square feet; or 2) the total water surface area of all bodies of water within the facility that are allowed under A.R.S.§ 45-131, et seq, and that qualify as water-intensive landscaped area.

C. Waiver of Conservation Requirements for the Use of 100 Percent Wastewater

The conservation requirements set forth in subsections A and B of this section shall not apply to a new large landscape user in any year in which all of the water used for landscaping purposes within the facility is wastewater.

6-1803 Monitoring and Reporting Requirements

For calendar year 2017, or the calendar year in which the facility first begins to use water, whichever is later, and for each calendar year thereafter until the first compliance date for any substitute monitoring and reporting requirement in the 5MP, an industrial user that applies groundwater to a new large landscape user shall include the following information in its annual reports required by A.R.S. § 45-632:

1. *The total quantity of water from any source, including reclaimed water, withdrawn, diverted or received for use on the facility during the calendar year for landscape watering purposes, including bodies of water filled or refilled during the calendar year, as measured with a measuring device in accordance with ADWR's measuring device rules, A.A.C. R12-15-901, et seq.*

2. *The total amount of landscapable area within the facility.*

3. *The total amount of water-intensive landscaped area at the facility broken down into the area planted primarily with plants not listed in ADWR's Low Water Use/Drought Tolerant Plant List for PRAMA (except any area watered exclusively with direct use*

reclaimed water or reclaimed water recovered within the area of impact) and the surface area of all bodies of water (except bodies of water used primarily for swimming purposes, bodies of water filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact, and bodies of water allowed under an interim water use permit if the bodies of water will be filled and refilled exclusively with direct use reclaimed water or reclaimed water recovered within the area of impact after the permit expires).

6.19 INDUSTRIAL CONSERVATION REQUIREMENTS AND MONITORING AND REPORTING REQUIREMENTS FOR NEW LARGE INDUSTRIAL USERS

6-1901 Definitions

In addition to the definitions set forth in Chapters 1 and 2 of Title 45 of the Arizona Revised Statutes and section 6-1301of this chapter, the phrase "new large industrial user" as used in section 6-1902 shall mean an industrial user that begins using more than 100 acre-feet of water per year for industrial purposes after January 1, 2015.

6-1902 Conservation Requirements

A. *No later than 180 days after receiving official notice of these conservation requirements, or within 180 days after the end of the first calendar year in which the facility first uses more than 100 acre-feet of water for industrial purposes, whichever is later, a new large industrial user shall submit to the director a plan to improve the efficiency of water use by the facility. The plan shall:*

1. *Specify the level of water conservation that can be achieved assuming the use of the latest commercially available technology consistent with reasonable economic return;*

2. *Identify water uses and conservation opportunities within the facility, addressing water used for the following categories as appropriate: landscaping; space cooling; process-related water use, including recycling; and sanitary and kitchen uses;*

3. *Describe an ongoing water conservation education program for employees; and*

4. *Include an implementation schedule.*

B. *If a person required to submit a plan under subsection A of this section is required to submit a conservation plan under another section of this chapter, the person may combine the plans into a single conservation plan.*

Bibliography

ADWR. (2011). *Draft Verson 2 Demand and Supply Assessment, Prescott Active Management Area.* ADWR.