

*Presented below are water quality standards that are in effect for Clean Water Act purposes.*

*EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.*

**Chapter 11. Department of Environmental Quality - Water Quality Standards**  
Effective June 10, 2025

The attached WQS document is in effect for Clean Water Act purposes except for the following provisions:

- R18-11-108.03 Narrative Nutrient Criteria for Lakes and Reservoirs
  - A. The narrative nutrient criteria in this Section apply to those lakes and reservoirs categorized in Appendix B.
  - B. The narrative water quality standard for nutrients at R18-11-108(A)(6) is met when, based on a minimum of two lake sample events conducted during the peak season based on lake productivity, the results show an average chlorophyll-a value below the applicable threshold for designated use and lake and reservoir category in subsection (D).
    1. The mean chlorophyll-a concentration is less than the lower value in the target range chlorophyll-a for the lake and reservoir category, or
    2. The mean chlorophyll-a concentration is within the target range for the lake and reservoir category and:
      - a. The mean blue green algae count is at or below 20,000 per milliliter, and
      - b. The blue green algae count is less than 50 percent of the total algae count, and
      - c. There is no evidence of nutrient-related impairments such as:
        - i. An exceedance of dissolved oxygen or pH standards;
        - ii. A fish kill coincident with a dissolved oxygen or pH exceedance;
        - iii. A fish kill or other aquatic organism mortality coincident with algal toxicity;
        - iv. Secchi depth is less than the lower value prescribed for the lake and reservoir category;
        - v. A nuisance algal bloom is present in the limnetic portion of the lake or reservoir; or
        - vi. The concentration of total phosphorous, total nitrogen, or total Kjehldal nitrogen (TKN) is greater than the upper value in the range prescribed for the lake and reservoir category; or
    3. For a shallow lake. In addition to meeting the mean chlorophyll-a concentrations in subsections (B)(1) or (2), submerged aquatic vegetation covers 50 percent or less of the lake bottom and there is less than a 5 mg/L swing in diel dissolved oxygen concentration measured within the photic zone.
  - C. The following threshold ranges apply during the peak season for lake productivity:
    1. Warm water lakes peak season, April – October;
    2. Cold water lakes peak season, May – September.
  - D. The following table lists the numeric targets for lakes and reservoirs.

NUMERIC TARGETS FOR LAKES AND RESERVOIRS										
Designated Use	Lake Category	Chl- <i>a</i> (µg/L)	Secchi Depth (m)	Total Phosphorus (µg/L)	Total Nitrogen (mg/L)	Total Kjehldal Nitrogen (TKN) (mg/L)	Blue-Green Algae (per ml)	Blue-Green Algae (% of total count)	Dis-solved Oxygen (mg/L)	pH (SU)
FBC and PBC	Deep	10-15	1.5-2.5	70-90	1.2-1.4	1.0-1.1	20,000			6.5-9.0
	Shallow	10-15	1.5-2.0	70-90	1.2-1.4	1.0-1.1				
	Igneous	20-30	0.5-1.0	100-125	1.5-1.7	1.2-1.4				
	Sedimentary	20-30	1.5-2.0	100-125	1.5-1.7	1.2-1.4				
	Urban	20-30	0.5-1.0	100-125	1.5-1.7	1.2-1.4				
A&Wc	All	5-15	1.5-2.0	50-90	1.0-1.4	0.7-1.1		<50	7 (top m)	6.5-9.0
A&Ww	All (except urban lakes)	25-40	0.8-1.0	115-140	1.6-1.8	1.3-1.6			6 (top m)	
	Urban	30-50	0.7-1.0	125-160	1.7-1.9	1.4-1.7				
A&Wedw	All	30-50	0.7-1.0	125-160	1.7-1.9	1.4-1.7				6.5-9.0
DWS	All	10-20	0.5-1.5	70-100	1.2-1.5	1.0-1.2	20,000			5.0-9.0

- R18-11-115(B):
  5. Natural adaptive processes have enabled a viable, balanced population of aquatic life to exist in a surface water where the level of a pollutant is greater than the numeric water quality standard to protect aquatic life prescribed in Appendix A;
- EPA disapproved site-specific copper criteria in Appendix C for Bright Angel Wash and Transept Canyon, as shown below in underlined text.

**Appendix C. Site-specific Standards**

Watershed	Surface Water	Surface Water Description & Location	Parameter	Site-Specific Criterion	EPA Decision	Site-Specific Criterion in Effect
CG	Bright Angel Wash	South Rim Grand Canyon National Park WWTP at 36°02'59"/112°09'02" to Coconino Wash	Copper (D)	<u>42.5 µg/L (A&amp;Wedw)</u>	Disapproved	None
CG	Transept Canyon	North Rim Grand Canyon WWTP at 36°12'20"/112°03'35" to 1 km downstream	Copper (D)	<u>42.5 µg/L (A&amp;Wedw)</u>	Disapproved	None

The following provisions have been updated since the 2016 WQS and are in effect for Clean Water Act purposes:

- R18-11-101, added or updated definitions:
  - Complete Mixing: The location at which concentration of a pollutant across a transect of a surface water differs by less than five percent
  - Critical Flow Condition: updated to “Critical flow conditions of the receiving water”
  - Critical flow conditions of the receiving water: The hydrologically based receiving water low flow averages that the director uses to calculate and implement applicable water quality criteria:
    - a. For acute aquatic water quality standard criteria, the receiving water critical condition is represented as the lowest one-day average flow event expected to occur once every ten years, on average (1Q10).
    - b. For chronic aquatic water quality standard criteria, the receiving water critical flow condition is represented as the lowest seven-consecutive-day average flow expected to occur once every 10 years, on average (7Q10), or
    - c. For human health based water quality standard criteria, in order to simulate long-term exposure, the receiving water critical flow condition is the harmonic mean flow.
  - Pollutant Minimization Program: A structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings.
  - Reference Condition: “A set of abiotic physical stream habitat, water quality, and site selection criteria established by the Director that describe the typical characteristics of stream sites in a region that are least disturbed by environmental stressors. From these criteria, the Director identifies reference biological assemblages of macroinvertebrates and algae and calculates the Arizona Indexes of Biological Integrity.”
  - Surface Waters”: ““Navigable waters” as defined in A.R.S. §49-201(22).” Please note that the A.R.S. has been renumbered, this section is now A.R.S. §49-201(53): “WOTUS” means waters of the state that are also navigable waters as defined by section 502(7) of the Clean Water Act.
  - Variance: “a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the variance.”
  - Zone of initial dilution: A small area in the immediate vicinity of an outfall structure in which turbulence is high and causes rapid mixing with the surrounding water
  - Zone of passage: [Removed]

- The baseline characterization paragraph has been moved from section R18-11-107.01 B(3)(C) to R18-11-107.01 B(3)(A).
- The antidegradation provision at R18-11-107.01(c)(4) has been updated to:

A discharge regulated under a § 404 permit that may affect existing water quality of an OAW requires a determination by the Director to ensure that existing water quality is maintained and protected and any water quality impacts are temporary. Temporary water quality impacts are those impacts that occur for a period of six months or less and are not regularly occurring. The form of such a determination shall be as follows:

- a. For Corps-issued § 404 permits, an individual § 401 water quality certification.
- b. For Director-issued § 404 permits, a § 404 permit action, wherein the Director shall conduct a water quality evaluation as a part of the state's requirements for issuing § 404 permits and in accordance with this section.

- The antidegradation provision at R18-11-107.01(D) has been updated to:

Antidegradation review of a § 404 permit shall be conducted as follows:

1. For a Corps-issued § 404 permit. The Director shall conduct the antidegradation review of any discharge authorized under a nationwide or regional § 404 permit as part of the § 401 water quality certification prior to issuance of the nationwide or regional permit. The Director shall conduct the antidegradation review of an individual § 404 permit if the discharge may degrade existing water quality in an OAW or a water listed on the 303(d) List of impaired waters. For regulated discharges that may degrade water quality in an OAW or a water that is on the 303(d) List of impaired waters, the Director shall conduct the antidegradation review as part of the § 401 water quality certification process.
2. For a Director-issued § 404 permit. The Director shall conduct the antidegradation review of any discharge authorized under a general § 404 permit as a part of its determination whether to issue a general permit in accordance with state requirements for issuing a § 404 general permit and with this section. The Director shall conduct the antidegradation review of an individual § 404 permit as part of the § 404 permit action in accordance with state requirements for issuing a § 404 permit and in accordance with this section.

- R18-11-109: Numeric Water Quality Standards:
  - Body Contact (FBC and PBC) designated uses. The *E. coli* criteria is comprised of two sets of criteria values expressed in colony forming units per 100 milliliters of water (cfu/100mL)—the geometric mean and the single sample maximum or statistical threshold value. Arizona did not change the geometric mean criteria of 126 cfu/100ml. Arizona revised section R18-11-109 of its WQS as follows:

- “Single sample maximum” (SSM) is revised to “statistical threshold value” (STV).
  - The FBC criteria STV is revised to 410 cfu/100 mL. This corresponds to the 90th percentile of the water quality distribution used to derive the 2012 EPA criteria. The previous FBC SSM was 235 cfu/100 mL
  - Arizona revised its Partial Body Contact (PBC) criteria STV to 576 cfu/100 mL from 575 cfu/100 mL.
  - The footnote to R18-11-109 section G has been moved to R18-11-109 section B.
  - F. Nutrient criteria. The following are water quality standards for total phosphorus and total nitrogen (expressed in milligrams per liter (mg/L)) that apply to the surface waters listed below. A minimum of 10 samples, each taken at least 10 days apart in a consecutive 12- month period, are required to determine a 90th percentile. Not more than 10 percent of the samples may exceed the 90th percentile value listed below. The Director will apply these water quality standards for total phosphorus and total nitrogen to the surface waters listed below, and to their perennial tributaries, if listed.
- R18-11-114: Mixing Zones has been updated to:
    - A. The Director may establish a mixing zone for a point source discharge to a surface water as a
      - condition of an individual AZPDES permit on a pollutant-by-pollutant basis. A mixing zone is prohibited in an ephemeral water or where there is no water for dilution, or as prohibited pursuant to subsection (H) of this section.
    - B. The owner or operator of a point source seeking the establishment of a mixing zone shall
      - submit a request to the Director for a mixing zone as part of an application for an AZPDES permit. The request shall include:
        1. An identification of the pollutant for which the mixing zone is requested;
        2. A proposed outfall design;
        3. A definition of the boundary of the proposed mixing zone. For purposes of this subsection,
          - the boundary of a mixing zone is where complete mixing occurs; and
        4. A complete and detailed description of the existing physical, biological, and chemical
          - conditions of the receiving water and the predicted impact of the proposed mixing zone on those conditions. The description shall also address the factors listed in subsection (D) of this section that the Director must consider when deciding to grant or deny a request and shall address the mixing zone requirements in subsection (H) of this section.
    - C. The Director shall consider the following factors when deciding whether to grant or deny a

request for a mixing zone:

1. The assimilative capacity of the receiving water;
2. The likelihood of adverse human health effects;
3. The location of drinking water plant intakes and public swimming areas;
4. The predicted exposure of biota and the likelihood that resident biota will be adversely affected;
5. Bioaccumulation;
6. Whether there will be acute toxicity in the mixing zone, and, if so, the size of the zone of initial dilution;
7. The known or predicted safe exposure levels for the pollutant for which the mixing zone is requested;
8. The size of the mixing zone;
9. The location of the mixing zone relative to biologically sensitive areas in the surface water;
10. The concentration gradient of the pollutant within the mixing zone;
11. Sediment deposition;
12. The potential for attracting aquatic life to the mixing zone; and
13. The cumulative impacts of other mixing zones and other discharges to the surface water.

D. Director determination.

1. The Director shall deny a request to establish a mixing zone if a water quality standard will be violated outside the boundaries of the proposed mixing zone.
2. If the Director approves the request to establish a mixing zone, the Director shall establish the mixing zone as a condition of an AZPDES permit. The Director shall include any mixing zone condition in the AZPDES permit that is necessary to protect human health and the designated uses of the surface water.

E. Any person who is adversely affected by the Director's decision to grant or deny a request for a mixing zone may appeal the decision under A.R.S. § 49-321 et seq. and A.R.S. § 41-1092 et seq.

F. The Director shall reevaluate a mixing zone upon issuance, reissuance, or modification of the AZPDES permit for the point source or a modification of the outfall structure.

G. Mixing zone requirements.

1. A mixing zone shall be as small as practicable in that it shall not extend beyond the point  
in the waterbody at which complete mixing occurs under the critical flow conditions of the discharge and of the receiving water.
2. The total horizontal area allocated to all mixing zones on a lake shall not exceed 10 percent  
of the surface area of the lake.
3. Adjacent mixing zones in a lake shall not overlap or be located closer together than the  
greatest horizontal dimension of the largest mixing zone.
4. The design of any discharge outfall shall maximize initial dilution of the wastewater in a  
surface water.
5. The size of the zone of initial dilution in a mixing zone shall prevent lethality to organisms  
passing through the zone of initial dilution. The mixing zone shall prevent acute toxicity and lethality to organisms passing through the mixing zone.

H. The Director shall not establish a mixing zone in an AZPDES permit for the following persistent, bioaccumulative pollutants:

1. Chlordane,
2. DDT and its metabolites (DDD and DDE),
3. Dieldrin,
4. Dioxin,
5. Endrin,
6. Endrin aldehyde,
7. Heptachlor,
8. Heptachlor epoxide,
9. Lindane,
10. Mercury,
11. Polychlorinated biphenyls (PCBs), and
12. Toxaphene.

- R18-11-122: Variances has been updated to:

A. Upon request, the Director may establish, by rule, a discharger-specific or water segment(s)-

specific variance from a water quality standard if requirements pursuant to this section are met.

B. A person who requests a variance must demonstrate all of the following information:

1. Identification of the specific pollutant and water quality standard for which a variance is sought.
2. Identification of the receiving surface water segment or segments to which the variance would apply.
3. A detailed discussion of the need for the variance, including the reasons why compliance with the water quality standard cannot be achieved over the term of the proposed variance, and any other useful information or analysis to evaluate attainability.
4. A detailed discussion of the discharge control technologies that are available for achieving compliance with the water quality standard for which a variance is sought.
5. Documentation that more advanced treatment technology than applicable technology-based effluent limitations is necessary to achieve compliance with the water quality standard for which a variance is sought.
6. A detailed description of proposed interim discharge limitations and pollutant control activities that represent the highest level of treatment achievable by a point source discharger or dischargers during the term of the variance.
7. Documentation that the proposed term is only as long as necessary to achieve the highest attainable condition.
8. Documentation that is appropriate to the type of use to which the variance would apply as follows:
  - a. For a water quality standard variance to a use specified in Clean Water Act § 101(a)(2), documentation must include demonstration of at least one of the following factors that preclude attainment of the use during the term of the variance:
    - i. Naturally occurring pollutant concentrations prevent attainment of the use;
    - ii. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met;
    - iii. That human-caused conditions or sources of pollution prevent the attainment of the water quality standard for which the variance is sought and either (1) it is not possible to remedy the conditions or sources of

- pollution or (2) remedying the human-caused conditions would cause more environmental damage to correct than to leave in place;
- iv. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use;
  - v. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses;
  - vi. That installation and operation of each of the available discharge technologies more advanced than those required to comply with technology-based effluent limitations to achieve compliance with the water quality standard would result in substantial and widespread economic and social impact; or
  - vii. Actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented.

b. For a water quality standard variance to a use other than those uses specified in Clean

Water Act § 101(a)(2), documentation must justify how consideration and value of the water subject to the use appropriately supports the variance and term. A demonstration consistent with (B)(8)(a) of this section may be used to satisfy this requirement.

9. For a waterbody segment(s)-specific variance, the following information is required

before the Director may issue a variance, in addition to all other required documentation pursuant to this section:

- a. Identification and documentation of any cost-effective and reasonable best management practices for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and water body or waterbody segment(s) specified in the variance that could be implemented to make progress towards attaining the underlying designated use and criterion; and
- b. If any variance pursuant to (B)(9)(a) of this section previously applied to the water body or waterbody segment(s), documentation must also demonstrate whether and to what extent best management practices for nonpoint source controls were implemented to address the pollutant(s) or water quality parameter(s) subject to the water quality variance and the water quality progress achieved.

10. For a discharger-specific variance, the following information is required before the

Director may issue a variance, in addition to all other required documentation pursuant to this section:

- a. Identification of the permittee subject to the variance;
- b. For an existing point source discharge, a detailed description of the existing discharge control technologies that are used to achieve compliance with applicable water quality standards. For a new point source discharge, a detailed description of the proposed discharge control technologies that will be used to achieve compliance with applicable water quality standards; and
- c. Documentation that the existing or proposed discharge control technologies will comply with applicable technology-based effluent limitations.

C. The Director shall consider the following factors when deciding whether to grant or deny a

variance request:

1. Bioaccumulation,
2. The predicted exposure of biota and the likelihood that resident biota will be adversely affected,
3. The known or predicted safe exposure levels for the pollutant for which the variance is requested, and
4. The likelihood of adverse human health effects.

D. The variance shall represent the highest attainable condition of the water body or water body

segment applicable throughout the term of the variance.

E. A variance shall not result in any lowering of the currently attained ambient water quality,

unless the variance is necessary for restoration activities, consistent with (B)(8)(a)(vii) of this section. The Director must specify the highest attainable condition of the water body or waterbody segment as a quantifiable expression of one of the following:

1. The highest attainable interim criterion,
2. The interim effluent condition that reflects the greatest pollutant reduction achievable; or

3. If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time of the issuance of the variance, and the adoption and implementation of a Pollutant Minimization Program.

F. A variance shall not modify the underlying designated use and criterion. A variance is only a

time limited exception to the underlying standard. For discharge-specific variances, other point source dischargers to the surface water that are not granted a variance shall still meet all applicable water quality standards.

G. Point source discharges shall meet all other applicable water quality standards for which a variance is not granted.

H. The Director may not grant a variance for a point source discharge to an OAW listed in R18-11-112(G).

I. Each variance established by the Director is subject to review and approval by the Regional Administrator.

J. The term of the water quality variance may only be as long as necessary to achieve the highest attainable condition and must be consistent with the supporting documentation in subsection (E) of this section. The variance term runs from the approval of the variance by the Regional Administrator.

K. The Director shall reevaluate, in its triennial review, whether each variance continues to represent the highest attainable condition. Comment on the variance shall be considered regarding whether the variance continues to represent the highest attainable condition. If the Director determines that the requirements of the variance do not represent the highest attainable condition, then the Director shall modify or repeal the variance in its triennial review rulemaking.

L. If the variance is modified by rulemaking, the requirements of the variance shall represent the highest attainable condition at the time of initial adoption of the variance, or the highest attainable condition identified during the current reevaluation, whichever is more stringent.

M. Upon expiration of a variance, point source dischargers shall comply with the water quality standard.

N. The following are discharger-specific variances adopted by the Director: 1.[Reserved]

O. The following are water body and waterbody segment-specific variances adopted by the Director: 1. [Reserved]

- The following aquatic life criteria for acrolein, carbaryl, demeton, diazinon, and nonylphenol:

Parameter	CAS Number	A&Wc Acute (µg/L)	A&Wc Chronic (µg/L)	A&Ww Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wedw Acute (µg/L)	A&Wedw Chronic (µg/L)	A&We Acute (µg/L)
Acrolein	107028	3	3	3	3	3	3	3
Carbaryl	52252	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Demeton	8065483	-	0.1	-	0.1	-	0.1	-
Diazinon	333415	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Nonylphenol	104405	28	6.6	28	6.6	28	6.6	28

- The following updates to nomenclature in Appendix A:

Action	2016 Arizona WQS	2019 Submittal Arizona WQS
Name Change	p,p'-Dichlorodiphenyltrichloroethane (DDT) and metabolites (DDD) and (DDE)	DDT and its breakdown products
CAS Number Addition	Tritium - NA	10028178
CAS Number Addition	Methylmercury- NA	22967926
CAS Number Addition	Strontium- NA	7440246
Spelling Change	Tributylin	Tributyltin

- The following updates to nomenclature in Appendix B:

Surface Water	2016 Arizona WQS	2019 Submittal Arizona WQS
<b>Colorado - Grand Canyon Watershed (CG)</b>		
Grand Wash	Headwaters to Lake Mead	Headwaters to Colorado River
Grapevine Wash	Headwaters to Lake Mead	Headwaters to Colorado River
Short Creek	Headwaters to confluence with Virgin River	Headwaters to confluence with Fort Pearce Wash
<b>Bill Williams Watershed (BW)</b>		
Cottonwood Canyon	Below Bear Trap Spring to confluence at Smith Canyon	Below Bear Trap Spring to confluence at Sycamore Creek
<b>Colorado - Lower Gila Watershed (CL)</b>		

Mohave Wash	Headwaters to Lake Havasu	Headwaters to Lower Colorado River
Middle Gila Watershed (MG)		
Lynx Creek	Below confluence with unnamed tributary to confluence with Agua Fria River	Below confluence with unnamed tributary at 34°34'29"/112°21'07" to confluence with Agua Fria River
New River	Headwaters to Interstate 17	Headwaters to Interstate 17 at 33°54'19.5"/112°08'46"
Santa Cruz – Rio Magdalena – Rio Sonoyta Watershed (SC)		
Flux Canyon	Headwaters to confluence with Alum Canyon	Headwaters to confluence with Alum Gulch
Lemmon Canyon Creek	Below unnamed tributary to confluence with Sabino Canyon Creek	Below unnamed tributary at 32°23'48"/110°47'49 to confluence with Sabino Canyon Creek
Madera Canyon Creek*	Below unnamed tributary to confluence with the Santa Cruz River	Below unnamed tributary at 31°43'42"/110°52'51 to confluence with the Santa Cruz River
Rose Canyon Creek	Headwaters to Rose Canyon Lake	Headwaters to confluence with Sycamore Canyon
Sabino Canyon*	Headwaters to confluence with unnamed tributary at 32°23'28"/110°47'03"	Headwaters to 32°23'20"/110°47'06"
Sabino Canyon*	Below unnamed tributary to confluence with Tanque Verde River	Below 32°23'20"/110°47'06" to confluence with Tanque Verde River
Sonoita Creek	Below groundwater upwelling point to confluence with the Santa Cruz River	Below 1600 feet downstream of Town of Patagonia WWTP outfall groundwater upwelling point to confluence with the Santa Cruz River
Three R Canyon	Headwaters to 31°28'26"/110°46'04"	Headwaters to Unnamed Trib to Three R Canyon at 31°28'26"/110°46'04"
Three R Canyon	From 31°28'26"/110°46'04" to 31°28'28"/110°47'15"	From 31°28'26"/110°46'04" to 31°28'28"/110°47'15" (Cox Gulch)

Three R Canyon	From 31°28'28"/110°47'15" to confluence with Sonoita Creek	From (Cox Gulch) 31°28'28"/110°47'15" to confluence with Sonoita Creek
Vekol Wash	Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations	Headwater to Santa Cruz Wash: Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations
Rose Canyon Creek	Headwaters to Rose Canyon Lake	Headwaters to confluence with Sycamore Canyon
Sabino Canyon*	Headwaters to confluence with unnamed tributary at 32°23'28"/110°47'03"	Headwaters to 32°23'20"/110°47'06"
Sabino Canyon*	Below unnamed tributary to confluence with Tanque Verde River	Below 32°23'20"/110°47'06" to confluence with Tanque Verde River
Sonoita Creek	Below groundwater upwelling point to confluence with the Santa Cruz River	Below 1600 feet downstream of Town of Patagonia WWTP outfall groundwater upwelling point to confluence with the Santa Cruz River
Three R Canyon	Headwaters to 31°28'26"/110°46'04"	Headwaters to Unnamed Trib to Three R Canyon at 31°28'26"/110°46'04"
Three R Canyon	From 31°28'26"/110°46'04" to 31°28'28"/110°47'15"	From 31°28'26"/110°46'04" to 31°28'28"/110°47'15" (Cox Gulch)
Three R Canyon	From 31°28'28"/110°47'15" to confluence with Sonoita Creek	From (Cox Gulch) 31°28'28"/110°47'15" to confluence with Sonoita Creek
	Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations	Headwater to Santa Cruz Wash: Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations
Williams Ranch Tanks	31°55'14"/110°25'31"	Removal of waterbody
San Pedro – Willcox Playa – Rio Yaqui Watershed (SP)		
Dry Canyon	Headwaters to confluence with Abbot Canyon	Headwaters to confluence with Whitewater Draw

San Pedro River	U.S./ Mexico Border to Redington	U.S./ Mexico Border to Buehman Canyon
San Pedro River	From Redington to confluence with the Gila River	From Buehman canyon to confluence with the Gila River
<b>Salt River Watershed (SR)</b>		
Black River, North Fork of East Fork	Headwaters to confluence with Black River, East Fork	Headwaters to confluence with Boneyard Creek
<b>Upper Gila Watershed (UG)</b>		
Frye Canyon Creek	Highline Canal Headwaters to terminus near San Simon River	Frye Mesa reservoir to terminus at Highline Canal
<b>Verde River Watershed (VR)</b>		
Sycamore Creek	Headwaters to confluence with Verde River	Headwaters to confluence with Verde River at 34°04'42"/111°42'14"

- The following updates to nomenclature in Appendix B:

<b>Table 7. Name Changes to Waterbodies in Appendix B</b>	
<b>Waterbody Name (2016)</b>	<b>Waterbody Name (2019)</b>
<b>Bill Williams Watershed</b>	
Cottonwood Canyon Creek	Cottonwood Canyon
<b>Colorado - Grand Canyon Watershed</b>	
Agate Canyon Creek	Agate Canyon
Hakatai Canyon Creek	Hakatai Canyon
Olo Creek	Olo Canyon
Ruby Canyon Creek	Ruby Canyon
Sapphire Canyon Creek	Sapphire Canyon
Serpentine Canyon Creek	Serpentine Canyon
Turquoise Canyon Creek	Turquoise Canyon
YPG pond	Yuma Proving Ground Pond
<b>Little Colorado Watershed</b>	
Black Canyon Creek	Black Canyon
Blue Ridge Reservoir	Cragin Reservoir
<b>Middle Gila Watershed</b>	
Lower Lake Pleasant	Lake Pleasant, Lower
Indian School Park Lake	Steele Indian School Pond
<b>Santa Cruz – Rio Magdalena – Rio Sonoyta Watershed</b>	
Palisade Canyon Creek	Palisade Canyon
Sabino Canyon Creek	Sabino Canyon
Santa Cruz Wash	Santa Cruz River

Soldier Lake	Soldier Tank
Sycamore Canyon Creek	Sycamore Canyon
<b>San Pedro – Willcox Playa – Rio Yaqui Watershed</b>	
Blackwater Draw	Black Draw
Booger Canyon Creek	Booger Canyon
Fourmile Canyon Creek	Fourmile Creek
Goudy Canyon Creek	Goudy Canyon Wash
Greenbrush Draw	Greenbush Draw
Horse Camp Canyon Creek	Horse Camp Canyon
Miller Canyon Creek	Miller Canyon
Golf Course Pond	Mountain View Golf Course Pond
Rattlesnake Canyon	Rattlesnake Creek
Redfield Canyon Creek	Redfield Canyon
Rucker Canyon Creek	Rucker Canyon
Swamp Springs Canyon Creek	Swamp Springs Canyon
Virgus Canyon Creek	Virgus Canyon
Ward Canyon Creek	Ward Canyon
<b>Salt River Watershed</b>	
Pool Corral Lake	Pole Corral Lake
<b>Upper Gila Watershed</b>	
Buckalou Creek	Buckelew Creek
Cluff Ranch Pond #1	Cluff Reservoir #1
Cluff Ranch Pond #3	Cluff Reservoir #3
Lower George’s Reservoir	Georges Tank
Del Monte Wash	Del Monte Gulch
Del Monte Wash (EDW)	Del Monte Gulch (EDW)
Hell Canyon Tank	Hells Canyon Tank
Jacks Canyon Wash	Jacks Canyon
Jacks Canyon Wash (EDW)	Jacks Canyon (EDW)
Stone Dam Lake	Masonry Number 2 Reservoir

The Lake Tank in the Middle Gila Watershed was reorganized alphabetically in Appendix B using “the” instead of “lake”.



## **Replacement Check List**

For rules filed within the

4th Quarter

October 1 – December 31, 2016

# THE ARIZONA ADMINISTRATIVE CODE

Within the stated calendar quarter, this Chapter contains all rules made, amended, repealed, renumbered, and recodified; or rules that have expired or were terminated due to an agency being eliminated under sunset law.

These rules were either certified by the Governor's Regulatory Review Council or the Attorney General's Office; or exempt from the rulemaking process, and filed with the Office of the Secretary of State. Refer to the historical notes for more information.

Please note that some rules you are about to remove may still be in effect after the publication date of this Supplement. Therefore, all superseded material should be retained in a separate binder and archived for future reference.

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## **Title 18. Environmental Quality**

### **Chapter 11. Department of Environmental Quality - Water Quality Standards**

#### **Supplement 16-4**

#### **Sections, Parts, Exhibits, Tables or Appendices modified**

R18-11-106, R18-11-109, R18-11-110, R18-11-112, R18-11-115, R18-11-121, Appendix A, B and C

REMOVE Supp. 08-4  
Pages: 1 - 77

REPLACE with Supp. 16-4  
Pages: 1 - 63

*The agency's contact person who can answer questions about rules in Supp. 16-4:*

Agency: Department of Environmental Quality, Water Quality Division

Address: 1110 W. Washington St., Phoenix, AZ 85007

Telephone: (602) 771-4836 (Toll-free number in Arizona: (800) 234-5677)

Fax: (602) 771-4834

*Disclaimer: Please be advised the person listed is the contact of record as submitted in the rulemaking package for this supplement. The contact and other information may change and is provided as a public courtesy.*

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## **PUBLISHER**

**Arizona Department of State**

**Office of the Secretary of State, Public Services Division**

## PREFACE

Under Arizona law, the Department of State, Office of the Secretary of State (Office), accepts state agency rule filings and is the publisher of Arizona rules. The Office of the Secretary of State does not interpret or enforce rules in the Administrative Code. Questions about rules should be directed to the state agency responsible for the promulgation of the rule.

Scott Cancelosi, Director  
PUBLIC SERVICES DIVISION  
December 31, 2016

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### **RULES**

A.R.S. § 41-1001(17) states: “‘Rule’ means an agency statement of general applicability that implements, interprets, or prescribes law or policy, or describes the procedures or practice requirements of an agency.”

### **THE ADMINISTRATIVE CODE**

The Arizona Administrative Code is where the official rules of the state of Arizona are published. The Code is the official codification of rules that govern state agencies, boards, and commissions. Virtually everything in your life is affected in some way by rules published in the Arizona Administrative Code, from the quality of air you breathe to the licensing of your dentist. This chapter is one of more than 230 in the Code compiled in 21 Titles.

### **ADMINISTRATIVE CODE SUPPLEMENTS**

Rules filed by an agency to be published in the Administrative Code are updated quarterly. Supplement release dates are printed on the footers of each chapter:

First Quarter: January 1 - March 31  
Second Quarter: April 1 - June 30  
Third Quarter: July 1 - September 30  
Fourth Quarter: October 1 - December 31

For example, the first supplement for the first quarter of 2016 is cited as Supp. 16-1.

### **HOW TO USE THE CODE**

Rules may be in effect before a supplement is released by the Office. Therefore, the user should refer to issues of the Arizona Administrative Register for recent updates to rule Sections.

### **ARTICLES AND SECTIONS**

Rules in chapters are divided into Articles, then Sections. The “R” stands for “rule” with a sequential numbering and lettering system separated into subsections.

### **HISTORICAL NOTES AND EFFECTIVE DATES**

Historical notes inform the user when the last time a Section was updated in the Administrative Code. Be aware, since the Office publishes each quarter by entire chapters, not all Sections are updated by an agency in a supplement release. Many times just one Section or a few Sections may be updated in the entire chapter.

### **ARIZONA REVISED STATUTE REFERENCES**

The Arizona Revised Statutes (A.R.S.) are available online at the Legislature’s website, [www.azleg.gov](http://www.azleg.gov). An agency’s authority note to make rules is often included at the beginning of a chapter. Other Arizona statutes may be referenced in rule under the A.R.S. acronym.

### **SESSION LAW REFERENCES**

Arizona Session Law references in the introduction of a chapter can be found at the Secretary of State’s website, [www.azsos.gov/services/legislative-filings](http://www.azsos.gov/services/legislative-filings).

### **EXEMPTIONS FROM THE APA**

It is not uncommon for an agency to be exempt from the steps outlined in the rulemaking process as specified in the Arizona Administrative Procedures Act, also known as the APA (Arizona Revised Statutes, Title 41, Chapter 6, Articles 1 through 10). Other agencies may be given an exemption to certain provisions of the Act.

An agency’s exemption is written in law by the Arizona State Legislature or under a referendum or initiative passed into law by Arizona voters.

When an agency files an exempt rulemaking package with our Office it specifies the law exemption in what is called the preamble of rulemaking. The preamble is published in the Arizona Administrative Register online at [www.azsos.gov/rules](http://www.azsos.gov/rules), click on the Administrative Register link.

In the Administrative Code the Office includes editor’s notes at the beginning of a chapter indicating that certain rulemaking Sections were made by exempt rulemaking. Exempt rulemaking notes are also included in the historical note at the end of a rulemaking Section.

The Office makes a distinction to certain exemptions because some rules are made without receiving input from stakeholders or the public. Other exemptions may require an agency to propose exempt rules at a public hearing.

### **EXEMPTIONS AND PAPER COLOR**

If you are researching rules and come across rescinded chapters on a different paper color, this is because the agency filed a Notice of Exempt Rulemaking. At one time the office published exempt rules on either blue or green paper. Blue meant the authority of the exemption was given by the Legislature; green meant the authority was determined by a court order. In 2001 the Office discontinued publishing rules using these paper colors.

### **PERSONAL USE/COMMERCIAL USE**

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*Public Services managing rules editor, Rhonda Paschal, assisted with the editing of this chapter.*

**TITLE 18. ENVIRONMENTAL QUALITY**

**CHAPTER 11. DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER QUALITY STANDARDS**

**ARTICLE 1. WATER QUALITY STANDARDS FOR SURFACE WATERS**

*Tables in Article 1, Appendix A have been updated and now include historical notes (Supp. 16-4).*

*Article 1, consisting of Appendices A through C, repealed April 24, 1996 (Supp. 96-2).*

*Article 1, consisting of Section R18-11-103, reserved effective April 24, 1996 (Supp. 96-2).*

*Article 1, consisting of Sections R18-11-105 and R18-11-106, and Appendices A and B, adopted April 24, 1996 (Supp. 96-2).*

*Article 1, consisting of Sections R18-11-101 and R18-11-102, R18-11-104, R18-11-107 through R18-11-109, R18-11-111 through R18-11-113, R18-11-115, R18-11-117 and R18-11-118, R18-11-120 and R18-11-121, amended effective April 24, 1996 (Supp. 96-2).*

*Article 1, consisting of Sections R18-11-101 through R18-11-121 and Appendices A through C, adopted effective February 18, 1992 (Supp. 92-1).*

*Article 1, consisting of Section R18-11-101, repealed effective February 18, 1992 (Supp. 92-1).*

*Article 1 consisting of Section R9-21-101 renumbered as Article 1, Section R18-11-101 (Supp. 87-3).*

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*Article 2, consisting of Sections R18-11-201 through R18-11-214 and Appendices A and B, repealed effective February 18, 1992 (Supp. 92-1).*

*Article 2 consisting of Sections R9-21-201 through R9-21-214 and Appendices A and B renumbered as Article 2, Sections R18-11-201 through R18-11-214 and Appendices A and B (Supp. 87-3).*

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Article 3 heading repealed effective April 24, 1996 (Supp. 96-2).

Article 3, consisting of Sections R18-11-301 through R18-11-304 repealed effective February 18, 1992 (Supp. 92-1).

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## ARTICLE 1. WATER QUALITY STANDARDS FOR SURFACE WATERS

### R18-11-101. Definitions

The following terms apply to this Article:

1. “Acute toxicity” means toxicity involving a stimulus severe enough to induce a rapid response. In aquatic toxicity tests, an effect observed in 96 hours or less is considered acute.
2. “Agricultural irrigation (AgI)” means the use of a surface water for crop irrigation.
3. “Agricultural livestock watering (AgL)” means the use of a surface water as a water supply for consumption by livestock.
4. “Annual mean” is the arithmetic mean of monthly values determined over a consecutive 12-month period, provided that monthly values are determined for at least three months. A monthly value is the arithmetic mean of all values determined in a calendar month.
5. “Aquatic and wildlife (cold water) (A&Wc)” means the use of a surface water by animals, plants, or other cold-water organisms, generally occurring at an elevation greater than 5000 feet, for habitation, growth, or propagation.
6. “Aquatic and wildlife (effluent-dependent water) (A&Wedw)” means the use of an effluent-dependent water by animals, plants, or other organisms for habitation, growth, or propagation.
7. “Aquatic and wildlife (ephemeral) (A&We)” means the use of an ephemeral water by animals, plants, or other organisms, excluding fish, for habitation, growth, or propagation.
8. “Aquatic and wildlife (warm water) (A&Ww)” means the use of a surface water by animals, plants, or other warm-water organisms, generally occurring at an elevation less than 5000 feet, for habitation, growth, or propagation.
9. “Arizona Pollutant Discharge Elimination System (AZPDES)” means the point source discharge permitting program established under 18 A.A.C. 9, Article 9.
10. “Assimilative capacity” means the difference between the baseline water quality concentration for a pollutant and the most stringent applicable water quality criterion for that pollutant.
11. “Clean Water Act” means the Federal Water Pollution Control Act [33 U.S.C. 1251 to 1387].
12. “Criteria” means elements of water quality standards that are expressed as pollutant concentrations, levels, or narrative statements representing a water quality that supports a designated use.
13. “Critical flow condition” means the lowest flow over seven consecutive days that has a probability of occurring once in 10 years (7 Q 10).
14. “Deep lake” means a lake or reservoir with an average depth of more than 6 meters.
15. “Designated use” means a use specified in Appendix B of this Article for a surface water.
16. “Domestic water source (DWS)” means the use of a surface water as a source of potable water. Treatment of a surface water may be necessary to yield a finished water suitable for human consumption.
17. “Effluent-dependent water (EDW)” means a surface water, classified under R18-11-113, that consists of a point source discharge of wastewater. An effluent-dependent water is a surface water that, without the point source discharge of wastewater, would be an ephemeral water.
18. “Ephemeral water” means a surface water that has a channel that is at all times above the water table and flows only in direct response to precipitation.
19. “Existing use” means a use attained in the waterbody on or after November 28, 1975, whether or not it is included in the water quality standards.
20. “Fish consumption (FC)” means the use of a surface water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, clams, turtles, crayfish, and frogs.
21. “Full-body contact (FBC)” means the use of a surface water for swimming or other recreational activity that causes the human body to come into direct contact with the water to the point of complete submergence. The use is such that ingestion of the water is likely and sensitive body organs, such as the eyes, ears, or nose, may be exposed to direct contact with the water.
22. “Geometric mean” means the  $n$ th root of the product of  $n$  items or values. The geometric mean is calculated using the following formula:
 
$$GM_Y = \sqrt[n]{(Y_1)(Y_2)(Y_3)\dots(Y_n)}$$
23. “Hardness” means the sum of the calcium and magnesium concentrations, expressed as calcium carbonate (CaCO<sub>3</sub>) in milligrams per liter.
24. “Igneous lake” means a lake located in volcanic, basaltic, or granite geology and soils.
25. “Intermittent water” means a stream or reach that flows continuously only at certain times of the year, as when it receives water from a spring or from another surface source, such as melting snow.
26. “Mixing zone” means an area or volume of a surface water that is contiguous to a point source discharge where dilution of the discharge takes place.
27. “Oil” means petroleum in any form, including crude oil, gasoline, fuel oil, diesel oil, lubricating oil, or sludge.
28. “Outstanding Arizona water (OAW)” means a surface water that is classified as an outstanding state resource water by the Director under R18-11-112.
29. “Partial-body contact (PBC)” means the recreational use of a surface water that may cause the human body to come into direct contact with the water, but normally not to the point of complete submergence (for example, wading or boating). The use is such that ingestion of the water is not likely and sensitive body organs, such as the eyes, ears, or nose, will not normally be exposed to direct contact with the water.
30. “Perennial water” means a surface water that flows continuously throughout the year.
31. “Pollutant” means fluids, contaminants, toxic wastes, toxic pollutants, dredged spoil, solid waste, substances and chemicals, pesticides, herbicides, fertilizers and other agricultural chemicals, incinerator residue, sewage, garbage, sewage sludge, munitions, petroleum products, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and mining, industrial, municipal, and agricultural wastes or any other liquid, solid, gaseous, or hazardous substance. A.R.S § 49-201(29)
32. “Practical quantitation limit” means the lowest level of quantitative measurement that can be reliably achieved during a routine laboratory operation.
33. “Reference condition” means a set of ecological measurements from a population of relatively undisturbed waterbodies within a region that establish a basis for making comparisons of biological condition among samples.

EPA has approved the addition of a new definition for several items in section R18-11-101 since the 2016 WQS. Please refer to the cover sheet for updated language that is in effect for CWA purposes.

## Department of Environmental Quality – Water Quality Standards

34. “Regional Administrator” means the Regional Administrator of Region IX of the U.S. Environmental Protection Agency.
35. “Regulated discharge” means a point-source discharge regulated under an AZPDES permit, a discharge regulated by a § 404 permit, and any discharge authorized by a federal permit or license that is subject to state water quality certification under § 401 of the Clean Water Act.
36. “Riffle habitat” means a stream segment where moderate water velocity and substrate roughness produce moderately turbulent conditions that break the surface tension of the water and may produce breaking wavelets that turn the surface water into white water.
37. “Run habitat” means a stream segment where there is moderate water velocity that does not break the surface tension of the water and does not produce breaking wavelets that turn the surface water into white water.
38. “Sedimentary lake” means a lake or reservoir in sedimentary or karst geology and soils.
39. “Shallow lake” means a lake or reservoir, excluding an urban lake, with a smaller, flatter morphology and an average depth of less than 3 meters and a maximum depth of less than 4 meters.
40. “Significant degradation” means:
- The consumption of 20 percent or more of the available assimilative capacity for a pollutant of concern at critical flow conditions, or
  - Any consumption of assimilative capacity beyond the cumulative cap of 50 percent of assimilative capacity.
41. “Surface water” means a water of the United States and includes the following:
- A water that is currently used, was used in the past, or may be susceptible to use in interstate or foreign commerce;
  - An interstate water, including an interstate wetland;
  - All other waters, such as an intrastate lake, reservoir, natural pond, river, stream (including an intermittent or ephemeral stream), creek, wash, draw, mudflat, sandflat, wetland, slough, backwater, prairie pot-hole, wet meadow, or playa lake, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce, including any such water:
    - That is or could be used by interstate or foreign travelers for recreational or other purposes;
    - From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    - That is used or could be used for industrial purposes by industries in interstate or foreign commerce;
  - An impoundment of a surface water as defined by this definition;
  - A tributary of a surface water identified in subsections (41)(a) through (d); and
  - A wetland adjacent to a surface water identified in subsections (41)(a) through (e).
42. “Total nitrogen” means the sum of the concentrations of ammonia (NH<sub>3</sub>), ammonium ion (NH<sub>4</sub><sup>+</sup>), nitrite (NO<sub>2</sub>), and nitrate (NO<sub>3</sub>), and dissolved and particulate organic nitrogen expressed as elemental nitrogen.
43. “Total phosphorus” means all of the phosphorus present in a sample, regardless of form, as measured by a persulfate digestion procedure.
44. “Toxic” means a pollutant or combination of pollutants, that after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism, either directly from the environment or indirectly by ingestion through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations in the organism or its offspring.
45. “Urban lake” means a manmade lake within an urban landscape.
46. “Use attainability analysis” means a structured scientific assessment of the factors affecting the attainment of a designated use including physical, chemical, biological, and economic factors.
47. “Wadeable” means a surface water can be safely crossed on foot and sampled without a boat.
48. “Wastewater” does not mean:
- Stormwater,
  - Discharges authorized under the De Minimus General Permit,
  - Other allowable non-stormwater discharges permitted under the Construction General Permit or the Multi-sector General Permit, or
  - Stormwater discharges from a municipal storm sewer system (MS4) containing incidental amounts of non-stormwater that the MS4 is not required to prohibit.
49. “Wetland” means an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. A wetland includes a swamp, marsh, bog, cienega, tinaja, and similar areas.
50. “Zone of passage” means a continuous water route of volume, cross-sectional area, and quality necessary to allow passage of free-swimming or drifting organisms with no acutely toxic effect produced on the organisms.

**Historical Note**

Former Section R9-21-101 repealed, new Section R9-21-101 adopted effective January 29, 1980 (Supp. 80-1).  
 Amended effective April 17, 1984 (Supp. 84-2).  
 Amended effective January 7, 1985 (Supp. 85-1).  
 Amended by adding subsection (C) effective August 12, 1986 (Supp. 86-4). Former Section R9-21-101 renumbered without change as Section R18-11-101 (Supp. 87-3). Former Section R18-11-101 repealed, new Section R18-11-101 adopted effective February 18, 1992 (Supp. 92-1). Amended effective April 24, 1996 (Supp. 96-2). Deleted first definition to R18-11-101(32) “Navigable Water”, previously printed in error (Supp. 96-3). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-102. Applicability**

- The water quality standards prescribed in this Article apply to surface waters.
- The water quality standards prescribed in this Article do not apply to the following:
  - A waste treatment system, including an impoundment, pond, lagoon, or constructed wetland that is a part of the waste treatment system;

2. A man-made surface impoundment and any associated ditch and conveyance used in the extraction, beneficiation, or processing of metallic ores that is not a surface water or is located in an area that once was a surface water but is no longer a surface water because it has been and remains legally converted, including:
    - a. A pit,
    - b. Pregnant leach solution pond,
    - c. Raffinate pond,
    - d. Tailing impoundment,
    - e. Decant pond,
    - f. Pond or a sump in a mine pit associated with dewatering activity,
    - g. Pond holding water that has come into contact with a process or product and that is being held for recycling,
    - h. Spill or upset catchment pond, or
    - i. A pond used for onsite remediation;
  3. A man-made cooling pond that is neither created in a surface water nor results from the impoundment of a surface water; or
  4. A surface water located on tribal lands.
- Historical Note**  
 Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-103. Repealed****Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Repealed effective April 24, 1996 (Supp. 96-2).

**R18-11-104. Designated Uses**

- A. The Director shall adopt or remove a designated use or subcategory of a designated use by rule.
- B. Designated uses of a surface water may include full-body contact, partial-body contact, domestic water source, fish consumption, aquatic and wildlife (cold water), aquatic and wildlife (warm water), aquatic and wildlife (ephemeral), aquatic and wildlife (effluent-dependent water), agricultural irrigation, and agricultural livestock watering. The designated uses for specific surface waters are listed in Appendix B of this Article.
- C. Numeric water quality criteria to maintain and protect water quality for the designated uses are prescribed in Appendix A, R18-11-109, R18-11-110, and R18-11-112. Narrative water quality standards to protect all surface waters are prescribed in R18-11-108.
- D. If a surface water has more than one designated use listed in Appendix B, the most stringent water quality criterion applies.
- E. The Director shall revise the designated uses of a surface water if water quality improvements result in a level of water quality that permits a use that is not currently listed as a designated use in Appendix B.
- F. In designating uses of a surface water and in establishing water quality criteria to protect the designated uses, the Director shall take into consideration the applicable water quality standards for downstream surface waters and shall ensure that the water quality standards that are established for an upstream surface water also provide for the attainment and maintenance of the water quality standards of downstream surface waters.
- G. A use attainability analysis shall be conducted prior to removal of a designated use or adoption of a subcategory of a designated use that requires less stringent water quality criteria.

- H. The Director may remove a designated use or adopt a subcategory of a designated use that requires less stringent water quality criteria, provided the designated use is not an existing use and it is demonstrated through a use attainability analysis that attaining the designated use is not feasible for any of the following reasons:
  1. A naturally-occurring pollutant concentration prevents the attainment of the use;
  2. A natural, ephemeral, intermittent, or low-flow condition or water level prevents the attainment of the use;
  3. A human-caused condition or source of pollution prevents the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
  4. A dam, diversion, or other type of hydrologic modification precludes the attainment of the use, and it is not feasible to restore the surface water to its original condition or to operate the modification in a way that would result in attainment of the use;
  5. A physical condition related to the natural features of the surface water, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, precludes attainment of an aquatic life designated use; or
  6. Controls more stringent than those required by § 301 (b) and § 306 of the Clean Water Act [33 U.S.C. § 1311 and § 1316] are necessary to attain the use and implementation of the controls would result in substantial and widespread economic and social impact.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1).

**R18-11-105. Tributaries; Designated Uses**

The following water quality standards apply to a surface water that is not listed in Appendix B but that is a tributary to a listed surface water.

1. The aquatic and wildlife (ephemeral) and partial-body contact standards apply to an unlisted tributary that is an ephemeral water.
2. The aquatic and wildlife (cold water), full-body contact, and fish consumption standards apply to an unlisted tributary that is a perennial or intermittent surface water and is above 5000 feet in elevation.
3. The aquatic and wildlife (warm water), full-body contact, and fish consumption standards apply to an unlisted tributary that is a perennial or intermittent surface water and is below 5000 feet in elevation.

**Historical Note**

Adopted effective April 24, 1996 (Supp. 96-2). Section heading amended per instructions of the Department of Environmental Quality, August 9, 1996 (Supp. 96-3).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1).

**R18-11-106. Net Ecological Benefit**

- A. The Director may, by rule, modify a water quality standard on the ground that there is a net ecological benefit associated with the discharge of effluent to support or create a riparian and aquatic habitat in an area where water resources are limited. The Director may modify a water quality standard for a pollutant if it is demonstrated that:
  1. The discharge of effluent creates or supports an ecologically valuable aquatic, wetland, or riparian ecosystem in an area where these resources are limited;

2. The ecological benefits associated with the discharge of effluent under a modified water quality standard exceed the environmental costs associated with the elimination of the discharge of effluent;
3. The cost of treatment to achieve compliance with a water quality standard is so high that it is more cost effective to eliminate the discharge of effluent to the surface water. The discharger shall demonstrate that it is feasible to eliminate the discharge of effluent that creates or supports the ecologically valuable aquatic, wetland, or riparian ecosystem;
4. The discharge of effluent to the surface water will not cause or contribute to a violation of a water quality standard that has been established for a downstream surface water;
5. All practicable point source discharge control programs, including local pretreatment, waste minimization, and source reduction programs are implemented; and
6. The discharge of effluent does not produce or contribute to the concentration of a pollutant in the tissues of aquatic organisms or wildlife that is likely to be harmful to humans or wildlife through food chain concentration.

- B.** The Director shall not modify a water quality criterion for a pollutant to be less stringent than a technology-based effluent limitation that applies to the discharge of that effluent. The discharge of effluent shall, at a minimum, comply with applicable technology-based effluent limitations.

**Historical Note**

Adopted effective April 24, 1996 (Supp. 96-2). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**R18-11-107. Antidegradation**

- A.** The Director shall, using R18-11-107.01 and this Section, determine whether there is degradation of water quality in a surface water on a pollutant-by-pollutant basis.
- B.** Tier 1: The level of water quality necessary to support an existing use shall be maintained and protected. No degradation of existing water quality is permitted in a surface water where the existing water quality does not meet the applicable water quality standards.
- C.** Tier 2: Where existing water quality in a surface water is better than the applicable water quality standard the existing water quality shall be maintained and protected. The Director may allow degradation of existing water quality in the surface water, if the Director makes all of the following findings:
1. The water quality necessary for existing uses is fully protected and water quality is not lowered to a level that does not comply with applicable water quality standards,
  2. The highest statutory and regulatory requirements for new and existing point sources are achieved,
  3. All cost-effective and reasonable best management practices for nonpoint source pollution control are implemented, and
  4. Allowing lower water quality is necessary to accommodate important economic or social development in the area where the surface water is located.
- D.** Tier 3: Existing water quality shall be maintained and protected in a surface water that is classified as an OAW under R18-11-112. Degradation of an OAW under subsection (C) is prohibited.
- E.** The Director shall implement this Section in a manner consistent with § 316 of the Clean Water Act [33 U.S.C. 1326] if a potential water quality impairment associated with a thermal discharge is involved.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1). Amended effective April 24, 1996 (Supp. 96-2). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-107.01. Antidegradation Criteria**

- A.** Tier 1 antidegradation protection.
1. Tier 1 antidegradation protection applies to the following surface waters:
    - a. A surface water listed on the 303(d) list for the pollutant that resulted in the listing,
    - b. An effluent dependent water,
    - c. An ephemeral water,
    - d. An intermittent water, and
    - e. A canal listed in Appendix B.
  2. A regulated discharge shall not cause a violation of a surface water quality standard or a wasteload allocation in a total maximum daily load approved by EPA.
  3. Except as provided in subsections (E) and (F), Tier 1 antidegradation review requirements are satisfied for a point-source discharge regulated under an individual AZPDES permit to an ephemeral water, effluent dependent water, intermittent water, or a canal listed in Appendix B, if water quality-based effluent limitations designed to achieve compliance with applicable surface water quality standards are established in the permit and technology-based requirements of the Clean Water Act for the point source discharge are met.
- B.** Tier 2 antidegradation protection.
1. Tier 2 antidegradation protection applies to a perennial water with existing water quality that is better than applicable water quality standards. A perennial water that is not listed in subsection (A)(1) nor classified as an OAW under A.A.C. R18-9-112(G) has Tier 2 antidegradation protection for all pollutants of concern.
  2. A regulated discharge that meets the following criteria, at critical flow conditions, does not cause significant degradation:
    - a. The regulated discharge consumes less than 20 percent of the available assimilative capacity for each pollutant of concern, and
    - b. At least 50 percent of the assimilative capacity for each pollutant of concern remains available in the surface water for each pollutant of concern.
  3. Antidegradation review. Any person proposing a new or expanded regulated discharge under an individual AZPDES permit that may cause significant degradation shall provide the Department with the following information:
    - a. Alternative analysis.
      - i. The person seeking authorization for the discharge shall prepare and submit a written analysis of alternatives to the discharge. The analysis shall provide information on all reasonable, cost-effective, less-degrading or non-degrading discharge alternatives. Alternatives may include wastewater treatment process changes or upgrades, pollution prevention measures, source reduction, water reclamation, alternative discharge locations, groundwater recharge, land application or treatment, local pretreatment programs, improved operation and maintenance of existing systems, seasonal or controlled discharge to avoid critical flow conditions, and zero discharge;

- ii. The alternatives analysis shall include cost information on base pollution control measures associated with the regulated discharge and cost information for each alternative;
  - iii. The person shall implement the alternative that is cost-effective and reasonable, results in the least degradation, and is approved by the Director. An alternative is cost-effective and reasonable if treatment costs associated with the alternative are less than a 10 percent increase above the cost of base pollution control measures;
  - iv. For purposes of this subsection, “base pollution control measures” are water pollution control measures required to meet technology-based requirements of the Clean Water Act and water quality-based effluent limits designed to achieve compliance with applicable water quality standards;
- b. Social and economic justification. The person shall demonstrate to the Director that significant degradation is necessary to accommodate important economic or social development in the local area. The person seeking authorization for the discharge shall prepare a written social and economic justification that includes a description of the following:
- i. The geographic area where significant degradation of existing water quality will occur;
  - ii. The current baseline social and economic conditions in the local area;
  - iii. The net positive social and economic effects of development associated with the regulated discharge and allowing significant degradation;
  - iv. The negative social, environmental, and economic effects of allowing significant degradation of existing water quality; and
  - v. Alternatives to the regulated discharge that do not significantly degrade water quality yet may yield comparable social and economic benefits;
- c. Baseline characterization. A person seeking authorization to discharge under an individual AZPDES permit to a perennial water shall provide baseline water quality data on pollutants of concern where no data exist or there are insufficient data to characterize baseline water quality and to determine available assimilative capacity. A discharger shall characterize baseline water quality at a location upstream of the proposed discharge location; and
4. For purposes of this Section, the term “pollutant of concern” means a pollutant with either a numeric or narrative water quality standard.
5. Public participation. The Director shall provide public notice and an opportunity to comment on an antidegradation review under subsection (B)(3) and shall provide an opportunity for a public hearing under A.A.C. R18-9-A908(B).
- C. Tier 3 antidegradation protection.**
- 1. Tier 3 antidegradation protection applies only to an OAW listed in R18-11-112(G).
  - 2. A new or expanded point-source discharge directly to an OAW is prohibited.
  - 3. A person seeking authorization for a regulated discharge to a tributary to, or upstream of, an OAW shall demonstrate in a permit application or in other documentation submitted to the Department that the regulated discharge will not degrade existing water quality in the downstream OAW.
- ~~4. A discharge regulated under a § 404 permit that may affect existing water quality of an OAW requires an individual § 401 water quality certification to ensure that existing water quality is maintained and protected and any water quality impacts are temporary. Temporary water quality impacts are those impacts that occur for a period of six months or less.~~
- ~~**D. Antidegradation review of a § 404 permit.** The Director shall conduct the antidegradation review of any discharge authorized under a nationwide or regional § 404 permit as part of the § 401 water quality certification prior to issuance of the nationwide or regional permit. The Director shall conduct the antidegradation review of an individual § 404 permit if the discharge may degrade existing water quality in an OAW or a water listed on the 303(d) List of impaired waters. For regulated discharges that may degrade water quality in an OAW or a water that is on the 303(d) List of impaired waters, the Director shall conduct the antidegradation review as part of the § 401 water quality certification process.~~
- E.** Antidegradation review of an AZPDES stormwater permit. An individual stormwater permit for a municipal separate storm sewer system (MS4) meets antidegradation requirements if the permittee complies with the permit, including developing a stormwater management plan containing controls that reduce the level of pollutants in stormwater discharges to the maximum extent practicable.
- F.** Antidegradation review of a general permit. The Director shall conduct the antidegradation review of a regulated discharge authorized by a general permit at the time the general permit is issued or renewed. A person seeking authorization to discharge under a general permit is not required to undergo an individual antidegradation review at the time the Notice of Intent is submitted unless the discharge may degrade existing water quality in an OAW or a water listed on the 303(d) List of impaired waters.

#### Historical Note

New Section made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

#### R18-11-108. Narrative Water Quality Standards

- A.** A surface water shall not contain pollutants in amounts or combinations that:
- 1. Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life;
  - 2. Cause objectionable odor in the area in which the surface water is located;
  - 3. Cause off-taste or odor in drinking water;
  - 4. Cause off-flavor in aquatic organisms;
  - 5. Are toxic to humans, animals, plants, or other organisms;
  - 6. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses;
  - 7. Cause or contribute to a violation of an aquifer water quality standard prescribed in R18-11-405 or R18-11-406; or
  - 8. Change the color of the surface water from natural background levels of color.
- B.** A surface water shall not contain oil, grease, or any other pollutant that floats as debris, foam, or scum; or that causes a film or iridescent appearance on the surface of the water; or that causes a deposit on a shoreline, bank, or aquatic vegetation. The discharge of lubricating oil or gasoline associated with the normal operation of a recreational watercraft is not a violation of this narrative standard.

- C. A surface water shall not contain a discharge of suspended solids in quantities or concentrations that interfere with the treatment processes at the nearest downstream potable water treatment plant or substantially increase the cost of handling solids produced at the nearest downstream potable water treatment plant.
- D. A surface water shall not contain solid waste such as refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, appliances, or tires.
- E. A wadeable, perennial stream shall support and maintain a community of organisms having a taxa richness, species composition, tolerance, and functional organization comparable to that of a stream with reference conditions in Arizona.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-108.01. Narrative Biological Criteria for Wadeable, Perennial Streams**

- A. The narrative biological criteria in this Section apply to a wadeable, perennial stream with either an aquatic and wildlife (cold water) or an aquatic and wildlife (warm water) designated use.
- B. The biological standard in R18-11-108(E) is met when a bioassessment result, as measured by the Arizona Index of Biological Integrity (IBI), for cold or warm water is:
  1. Greater than or equal to the 25th percentile of reference condition, or
  2. Greater than the 10th percentile of reference condition and less than the 25th percentile of reference condition and a verification bioassessment result is greater than or equal to the 25th percentile of reference condition.
- C. Arizona Index of Biological Integrity (IBI) scores:

Bioassessment Result	Index of Biological Integrity Scores	
	A&Wc	A&Ww
Greater than or equal to the 25th percentile of reference condition	≥52	≥50
Greater than the 10th and less than the 25th percentile of reference condition	46 - 51	40 - 49

**Historical Note**

New Section made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-108.02. Narrative Bottom Deposit Criteria for Wadeable, Perennial Streams**

- A. The narrative bottom deposit criteria in this Section apply to wadeable, perennial streams with an aquatic and wildlife (cold water) or an aquatic and wildlife (warm water) designated use.
- B. The narrative water quality standard for bottom deposits at R18-11-108(A)(1) is met when:

1. The percentage of fine sediments in the riffle habitats of a wadeable, perennial stream with an A&Wc designated use, as determined by a riffle pebble count, is less than or equal to 30 percent.
2. The percentage of fine sediments in all stream habitats of a wadeable, perennial stream with an A&Ww designated use, as determined by a reach level pebble count, is equal to or less than 50 percent.

**Historical Note**

New Section made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**~~R18-11-108.03. Narrative Nutrient Criteria for Lakes and Reservoirs~~**

- ~~A. The narrative nutrient criteria in this Section apply to those lakes and reservoirs categorized in Appendix B.~~
- ~~B. The narrative water quality standard for nutrients at R18-11-108(A)(6) is met when, based on a minimum of two lake sample events conducted during the peak season based on lake productivity, the results show an average chlorophyll-*a* value below the applicable threshold for designated use and lake and reservoir category in subsection (D):~~
  - ~~1. The mean chlorophyll-*a* concentration is less than the lower value in the target range chlorophyll-*a* for the lake and reservoir category; or~~
  - ~~2. The mean chlorophyll-*a* concentration is within the target range for the lake and reservoir category and:
 
    - ~~a. The mean blue-green algae count is at or below 20,000 per milliliter, and~~
    - ~~b. The blue-green algae count is less than 50 percent of the total algae count, and~~
    - ~~c. There is no evidence of nutrient-related impairments such as:
 
      - ~~i. An exceedance of dissolved oxygen or pH standards;~~
      - ~~ii. A fish kill coincident with a dissolved oxygen or pH exceedance;~~
      - ~~iii. A fish kill or other aquatic organism mortality coincident with algal toxicity;~~
      - ~~iv. Secchi depth is less than the lower value prescribed for the lake and reservoir category;~~
      - ~~v. A nuisance algal bloom is present in the limnetic portion of the lake or reservoir; or~~
      - ~~vi. The concentration of total phosphorous, total nitrogen, or total Kjehldal nitrogen (TKN) is greater than the upper value in the range prescribed for the lake and reservoir category; or~~~~~~
  - ~~3. For a shallow lake. In addition to meeting the mean chlorophyll-*a* concentrations in subsections (B)(1) or (2), submerged aquatic vegetation covers 50 percent or less of the lake bottom and there is less than a 5 mg/L swing in diel dissolved oxygen concentration measured within the photic zone.~~
- ~~C. The following threshold ranges apply during the peak season for lake productivity:
 
  - ~~1. Warm water lakes peak season, April – October;~~
  - ~~2. Cold water lakes peak season, May – September.~~~~

EPA has not acted on the provisions in section R18-11-108.03, which are not in effect for CWA purposes.

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D. The following table lists the numeric targets for lakes and reservoirs:

EPA has not acted on the provisions in section R18-11-108.03, which are not in effect for CWA purposes.

NUMERIC TARGETS FOR LAKES AND RESERVOIRS										
Designated Use	Lake Category	Chl-a (µg/L)	Secchi Depth (m)	Total Phosphorus (µg/L)	Total Nitrogen (mg/L)	Total Kjeldahl Nitrogen (TKN) (mg/L)	Blue-Green Algae (per-ml)	Blue-Green Algae (% of total count)	Dissolved Oxygen (mg/L)	pH (SU)
FBC and PBC	Deep	10-15	1.5-2.5	70-90	1.2-1.4	1.0-1.1	20,000			6.5-9.0
	Shallow	10-15	1.5-2.0	70-90	1.2-1.4	1.0-1.1				
	Igneous	20-30	0.5-1.0	100-125	1.5-1.7	1.2-1.4				
	Sedimentary	20-30	1.5-2.0	100-125	1.5-1.7	1.2-1.4				
	Urban	20-30	0.5-1.0	100-125	1.5-1.7	1.2-1.4				
A&We	All	5-15	1.5-2.0	50-90	1.0-1.4	0.7-1.1		<50	7 (top-m)	6.5-9.0
A&Ww	All (except urban lakes)	25-40	0.8-1.0	115-140	1.6-1.8	1.3-1.6			6 (top-m)	
	Urban	30-50	0.7-1.0	125-160	1.7-1.9	1.4-1.7				
A&Wedw	All	30-50	0.7-1.0	125-160	1.7-1.9	1.4-1.7				6.5-9.0
DWS	All	10-20	0.5-1.5	70-100	1.2-1.5	1.0-1.2	20,000			5.0-9.0

Historical Note

New Section made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

R18-11-109. Numeric Water Quality Standards

A. *E. coli* bacteria. The following water quality standards for *Escherichia coli* (*E. coli*) are expressed in colony forming units per 100 milliliters of water (cfu / 100 ml) or as a Most Probable Number (MPN):

<i>E. coli</i>	FBC	PBC
Geometric mean (minimum of four samples in 30 days)	126	126
Single sample maximum	235	575

B. pH. The following water quality standards for pH are expressed in standard units:

pH	DWS	FBC, PBC, A&W <sup>1</sup>	AgI	AgL
Maximum	9.0	9.0	9.0	9.0
Minimum	5.0	6.5	4.5	6.5

C. The maximum allowable increase in ambient water temperature, due to a thermal discharge is as follows:

A&Ww	A&Wedw	A&Wc
3.0° C	3.0° C	1.0° C

D. Suspended sediment concentration.

1. The following water quality standards for suspended sediment concentration, expressed in milligrams per liter (mg/L), are expressed as a median value determined from a minimum of four samples collected at least seven days apart:

A&Wc	A&Ww
25	80

2. The Director shall not use the results of a suspended sediment concentration sample collected during or within 48 hours after a local storm event to determine the median value.

E. Dissolved oxygen. A surface water meets the water quality standard for dissolved oxygen when either:

- The percent saturation of dissolved oxygen is equal to or greater than 90 percent, or
- The single sample minimum concentration for the designated use, as expressed in milligrams per liter (mg/L) is as follows:

Designated Use	Single sample minimum concentration in mg/L
A&Ww	6.0
A&Wc	7.0
A&W edw for a sample taken from three hours after sunrise to sunset	3.0
A&W edw for a sample taken from sunset to three hours after sunrise	1.0

The single sample minimum concentration is the same for the designated use in a lake, but the sample must be taken from a depth no greater than one meter.

F. Nutrient criteria. The following are water quality standards for total phosphorus and total nitrogen (expressed in milligrams per liter (mg/L)) that apply to the surface waters listed below. A minimum of 10 samples, each taken at least 10 days apart in a consecutive 12-month period, are required to determine a 90th percentile. Not more than 10 percent of the samples may exceed the 90th percentile value listed below. The Director will apply these water quality standards for total phosphorus and total nitrogen to a surface water listed below, and to any source discharging to a tributary (ephemeral, intermittent, effluent dependent water or perennial) based on volume, frequency, magnitude and duration of the discharge and distance to the downstream surface water listed below:

EPA acknowledges the changes made to portions of section F. Please refer to the cover sheet for the updated language that is in effect for CWA purposes.

EPA has approved the revision from "Single sample maximum" to "Statistical threshold value" and the revision of the FBC criteria from 235 to 410 cfu/100mL.. EPA acknowledges the non-substantive change of the PBC criteria from 576 to 575 cfu/100mL

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- Verde River and its perennial tributaries from the Verde headwaters to Bartlett Lake:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.10	0.30	1.00
Total nitrogen	1.00	1.50	3.00

- Black River, Tonto Creek and their perennial tributaries for any segments that are not located on tribal lands:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.10	0.20	0.80
Total nitrogen	0.50	1.00	2.00

- Salt River and its perennial tributaries above Roosevelt Lake for any segments that are not located on tribal lands:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.12	0.30	1.00
Total nitrogen	0.60	1.20	2.00

- Salt River below Stewart Mountain Dam to its confluence with the Verde River:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.05	–	0.20
Total nitrogen	0.60	–	3.00

- Little Colorado River and its perennial tributaries upstream from:

- The headwaters to River Reservoir,
- South Fork of Little Colorado River at 34°00'49"/109°24'18" to above South Fork Campground at 34°04'49"/109°24'18", and
- The headwaters of Water Canyon Creek to the Apache-Sitgreaves National Forest boundary:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.08	0.10	0.75
Total nitrogen	0.60	0.75	1.10

- From the Little Colorado River and State Route 260 at 34°06'39"/109°18'55" to Lyman Lake:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.20	0.30	0.75
Total nitrogen	0.70	1.20	1.50

- Colorado River at the Northern International Boundary near Morelos Dam:

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	–	0.33	–
Total nitrogen	–	2.50	–

- Oak Creek from its headwaters at 35°01'30"/111°44'12" to its confluence with the Verde River and the West Fork of Oak Creek from its headwaters at 35°02'44"/111°54'48" to its confluence with Oak Creek.

Surface Water	Annual Mean	90th Percentile	Single Sample Maximum
Total phosphorus	0.1	0.25	0.30
Total nitrogen	1.00	1.50	2.50

- No discharge of wastewater to Show Low Creek or its perennial tributaries upstream of and including Fools Hollow Lake shall exceed 0.16 mg/L total phosphates as P.

- No discharge of wastewater to the San Francisco River or its perennial tributaries upstream of Luna Lake Dam shall exceed 1.0 mg/L total phosphates as P.

G. Footnotes:

- "1" Includes A&Wc, A&Ww, A&Wedw, and A&We.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**R18-11-110. Salinity Standards for the Colorado River**

- The flow-weighted average annual salinity in the lower main stem of the Colorado River shall not exceed the following criteria:

Location	Total Dissolved Solids
Below Hoover Dam	723 mg/L
Below Parker Dam	747 mg/L
At Imperial Dam	879 mg/L

- The plan of implementation contained in the "2014 Review, Water Quality Standards for Salinity, Colorado River System," approved October 2014, is incorporated by reference to preserve the basin-wide approach to salinity control developed by the Colorado River Basin Salinity Control Forum and to ensure compliance with the numeric criteria for salinity in subsection (A). This material does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or may be obtained from the Colorado River Basin Salinity Control Forum, 106 West 500 South, Suite 101, Bountiful, Utah 84010-6232 or at <http://www.coloradoriversalinity.org/>.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**R18-11-111. Analytical Methods**

- A person conducting an analysis of a sample taken to determine compliance with a water quality standard shall use an analytical method prescribed in A.A.C. R9-14-610, 40 CFR 136.3, or an alternative analytical method approved under A.A.C. R9-14-610(C).

- A test result from a sample taken to determine compliance with a water quality standard is valid only if the sample is analyzed by a laboratory that is licensed by the Arizona Department of Health Services, an out-of-state laboratory licensed under A.R.S. § 36-495.14, or a laboratory exempted under A.R.S. § 36-495.02, for the analysis performed.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final

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rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-112. Outstanding Arizona Waters**

- A.** The Director shall classify a surface water as an outstanding Arizona water (OAW) by rule.
- B.** The Director may adopt, under R18-11-115, a site-specific standard to maintain and protect existing water quality in an OAW.
- C.** Any person may nominate a surface water for classification as an OAW by filing a nomination with the Director. The nomination shall include:
1. A map and a description of the surface water;
  2. A written statement in support of the nomination, including specific reference to the applicable criteria for an OAW classification prescribed in subsection (D);
  3. Supporting evidence demonstrating that the criteria prescribed in subsection (D) are met; and
  4. Available water quality data relevant to establishing the baseline water quality of the proposed OAW.
- D.** The Director may classify a surface water as an OAW based upon the following criteria:
1. The surface water is a perennial or intermittent water;
  2. The surface water is in a free-flowing condition. For purposes of this subsection, “in a free-flowing condition” means that a surface water does not have an impoundment, diversion, channelization, rip-rapping or other bank armor, or another hydrological modification within the reach nominated for an OAW classification;
  3. The surface water has good water quality. For purposes of this subsection, “good water quality” means that the surface water has water quality that meets or is better than applicable surface water quality standards. A surface water that is listed as impaired under R18-11-604(E) is ineligible for OAW classification; and
  4. The surface water meets one or both of the following conditions:
    - a. The surface water is of exceptional recreational or ecological significance because of its unique attributes, such as the geology, flora and fauna, water quality, aesthetic value, or the wilderness characteristic of the surface water;
    - b. An endangered or threatened species is associated with the surface water and the existing water quality is essential to the species' maintenance and propagation or the surface water provides critical habitat for the threatened or endangered species. An endangered or threatened species is identified in “Endangered and Threatened Wildlife,” 50 CFR 17.11 (revised 2005), and “Endangered and Threatened Plants,” 50 CFR 17.12 (revised 2005). This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, Arizona 85007 or may be obtained from the National Archives and Records Administration at <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1>.
- E.** The Director shall hold at least one public meeting in the local area of a surface water that is nominated for classification as an OAW to solicit public comment on the nomination.
- F.** The Director shall consider the following factors when deciding whether to classify a surface water as an OAW:
1. Whether there is the ability to manage the surface water and its watershed to maintain and protect existing water quality;
  2. The social and economic impact of Tier 3 antidegradation protection;
  3. The public comments in support of, or in opposition to, an OAW classification;
  4. The timing of the nomination relative to the triennial review of surface water quality standards;
  5. The consistency of an OAW classification with applicable water quality management plans; and
  6. Whether the nominated surface water is located within a national or state park, national monument, national recreation area, wilderness area, riparian conservation area, area of critical environmental concern, or it has another special use designation (for example, Wild and Scenic River).
- G.** The following surface waters are classified as OAWs:
1. The West Fork of the Little Colorado River, from its headwaters to Government Springs (approximately 9.1 river miles);
  2. Oak Creek, from its headwaters to its confluence with the Verde River (approximately 50.3 river miles);
  3. West Fork of Oak Creek, from its headwaters to its confluence with Oak Creek (approximately 15.8 river miles);
  4. Peeples Canyon Creek, from its headwaters to its confluence with the Santa Maria River (approximately 8.1 river miles);
  5. Burro Creek, from its headwaters to its confluence with Boulder Creek (approximately 29.5 miles);
  6. Francis Creek, from its headwaters to its confluence with Burro Creek (approximately 22.9 river miles);
  7. Bonita Creek, from its boundary of the San Carlos Indian Reservation to its confluence with the Gila River (approximately 14.7 river miles);
  8. Cienega Creek, from its confluence with Gardner Canyon to the USGS gaging station (#09484600) (approximately 28.3 river miles);
  9. Aravaipa Creek, from its confluence with Stowe Gulch to the downstream boundary of the Aravaipa Canyon Wilderness Area (approximately 15.5 river miles);
  10. Cave Creek, from its headwaters to the Coronado National Forest boundary (approximately 10.4 river miles);
  11. South Fork of Cave Creek, from its headwaters to its confluence with Cave Creek (approximately 8.6 river miles);
  12. Buehman Canyon Creek, from its headwaters to its confluence with unnamed tributary at 32°24'31"/110°32'08" (approximately 9.8 river miles);
  13. Lee Valley Creek, from its headwaters to Lee Valley Reservoir (approximately 1.6 river miles);
  14. Bear Wallow Creek, from its headwaters to the boundary of the San Carlos Indian Reservation (approximately 4.25 river miles);
  15. North Fork of Bear Wallow Creek, from its headwaters to its confluence with Bear Wallow Creek (approximately 3.8 river miles);
  16. South Fork of Bear Wallow Creek, from its headwaters to its confluence with Bear Wallow Creek (approximately 3.8 river miles);
  17. Snake Creek, from its headwaters to its confluence with the Black River (approximately 6.2 river miles);
  18. Hay Creek, from its headwaters to its confluence with the West Fork of the Black River (approximately 5.5 river miles);

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19. Stinky Creek, from the White Mountain Apache Indian Reservation boundary to its confluence with the West Fork of the Black River (approximately 3.0 river miles);
20. KP Creek, from its headwaters to its confluence with the Blue River (approximately 12.7 river miles);
21. Davidson Canyon, from the unnamed spring at 31°59'00"/110°38'49" to its confluence with Cienega Creek; and
22. Fossil Creek, from its headwaters at the confluence of Sandrock and Calf Pen Canyons above Fossil Springs to its confluence with the Verde River (approximately 17.2 river miles).

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1). Amended effective April 24, 1996 (Supp. 96-2). Added "water quality standards" to R18-11-112, previously omitted in error (Supp. 96-3). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**R18-11-113. Effluent-Dependent Waters**

- A. The Director shall classify a surface water as an effluent-dependent water by rule.
- B. The Director may adopt, under R18-11-115, a site-specific water quality standard for an effluent-dependent water.
- C. Any person may submit a petition for rule adoption requesting that the Director classify a surface water as an effluent-dependent water. The petition shall include:
  1. A map and a description of the surface water;
  2. Information that demonstrates that the surface water consists of a point source discharge of wastewater; and
  3. Information that demonstrates that, without a point source discharge of a wastewater, the receiving water is an ephemeral water.
- D. The Director shall use the water quality standards that apply to an effluent-dependent water to derive water quality-based effluent limits for a point source discharge of wastewater to an ephemeral water.
- E. The Director may use aquatic and wildlife (edw) acute standards only to derive water quality based effluent limits for a sporadic, infrequent, or emergency point source discharge to an ephemeral water or to an effluent-dependent water. The Director shall consider the following factors when deciding whether to apply A&Wedw (acute) standards:
  1. The amount, frequency, and duration of the discharge;
  2. The length of time water may be present in the receiving water;
  3. The distance to a downstream water with aquatic and wildlife chronic standards; and
  4. The likelihood of chronic exposure to pollutants.
- F. The Director may establish alternative water quality-based effluent limits in an AZPDES permit based on seasonal differences in the discharge.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1). Amended effective December 18, 1992 (Supp. 92-4). Amended effective April 24, 1996 (Supp. 96-2). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**~~R18-11-114. Mixing Zones~~**

- ~~A. The Director may establish a mixing zone for a point source discharge to a surface water as a condition of an AZPDES per-~~

~~mit. A mixing zone is prohibited in an ephemeral water or where there is no water for dilution.~~

- ~~B. The owner or operator of a point source seeking the establishment of a mixing zone shall submit a request to the Director for a mixing zone as part of an application for an AZPDES permit. The request shall include:
 
  - ~~1. An identification of the pollutant for which the mixing zone is requested;~~
  - ~~2. A proposed outfall design;~~
  - ~~3. A definition of the boundary of the proposed mixing zone. For purposes of this subsection, the boundary of a mixing zone means the location where the concentration of wastewater across a transect of the surface water differs by less than five percent; and~~
  - ~~4. A complete and detailed description of the existing physical, biological, and chemical conditions of the receiving water and the predicted impact of the proposed mixing zone on those conditions.~~~~
- ~~C. The Director shall review the request for a mixing zone to determine whether the written request is complete. If the request is incomplete, the Director shall provide the applicant with a list of the additional information required.~~
- ~~D. The Director shall consider the following factors when deciding whether to grant or deny a request for a mixing zone:
 
  - ~~1. The assimilative capacity of the receiving water;~~
  - ~~2. The likelihood of adverse human health effects;~~
  - ~~3. The location of drinking water plant intakes and public swimming areas;~~
  - ~~4. The predicted exposure of biota and the likelihood that resident biota will be adversely affected;~~
  - ~~5. Bioaccumulation;~~
  - ~~6. Whether there will be acute toxicity in the mixing zone, and, if so, the size of the zone of initial dilution;~~
  - ~~7. The known or predicted safe exposure levels for the pollutant for which the mixing zone is requested;~~
  - ~~8. The size of the mixing zone;~~
  - ~~9. The location of the mixing zone relative to biologically sensitive areas in the surface water;~~
  - ~~10. The concentration gradient of the pollutant within the mixing zone;~~
  - ~~11. Sediment deposition;~~
  - ~~12. The potential for attracting aquatic life to the mixing zone; and~~
  - ~~13. The cumulative impacts of other mixing zones and other discharges to the surface water.~~~~
- ~~E. Director determination:
 
  - ~~1. The Director shall deny a request to establish a mixing zone if a water quality standard will be violated outside the boundaries of the proposed mixing zone. The Director shall notify the owner or operator of the denial in writing and shall state the reason for the denial.~~
  - ~~2. If the Director approves the request to establish a mixing zone, the Director shall establish the mixing zone as a condition of an AZPDES permit. The Director shall include any mixing zone condition in the AZPDES permit that is necessary to protect human health and the designated uses of the surface water.~~~~
- ~~F. Any person who is adversely affected by the Director's decision to grant or deny a request for a mixing zone may appeal the decision under A.R.S. § 49-321 et seq. and A.R.S. § 41-1092 et seq.~~
- ~~G. The Director shall reevaluate a mixing zone upon issuance, reissuance, or modification of the AZPDES permit for the point source or a modification of the outfall structure.~~
- ~~H. Mixing zone requirements.~~

EPA has approved revisions to section R18-11-114 since the 2016 WQS. Please refer to the cover sheet for updated language that is in effect for CWA purposes.

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EPA has approved revisions to section R18-11-114 since the 2016 WQS. Please refer to the cover sheet for updated language that is in effect for CWA purposes.

1. ~~The length of a mixing zone shall not exceed 500 meters in a stream.~~
  2. ~~The total horizontal area allocated to all mixing zones on a lake shall not exceed 10 percent of the surface area of the lake.~~
  3. ~~Adjacent mixing zones in a lake shall not overlap or be located closer together than the greatest horizontal dimension of the largest mixing zone.~~
  4. ~~A mixing zone shall provide for a zone of passage of not less than 50 percent of the cross-sectional area of a river or stream.~~
  5. ~~The design of any discharge outfall shall maximize initial dilution of the wastewater in a surface water.~~
  6. ~~The size of the zone of initial dilution in a mixing zone shall prevent lethality to organisms passing through the zone of initial dilution.~~
- I.** ~~The Director shall not establish a mixing zone in an AZPDES permit for the following persistent, bioaccumulative pollutants:~~
1. ~~Chlordane;~~
  2. ~~DDT and its metabolites (DDD and DDE);~~
  3. ~~Dieldrin;~~
  4. ~~Dioxin;~~
  5. ~~Endrin;~~
  6. ~~Endrin aldehyde;~~
  7. ~~Heptachlor;~~
  8. ~~Heptachlor epoxide;~~
  9. ~~Lindane;~~
  10. ~~Mercury;~~
  11. ~~Polychlorinated biphenyls (PCBs); and~~
  12. ~~Toxaphene.~~

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2).  
 Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-115. Site-Specific Standards**

- A.** The Director shall adopt a site-specific standard by rule.
- B.** The Director may adopt a site-specific standard based upon a request or upon the Director's initiative for any of the following reasons:
1. Local physical, chemical, or hydrological conditions of a surface water such as pH, hardness, fate and transport, or temperature alters the biological availability or toxicity of a pollutant;
  2. The sensitivity of resident aquatic organisms that occur in a surface water to a pollutant differs from the sensitivity of the species used to derive the numeric water quality standards to protect aquatic life in Appendix A;
  3. Resident aquatic organisms that occur in a surface water represent a narrower mix of species than those in the dataset used by the Department to derive numeric water quality standards to protect aquatic life in Appendix A;
  4. The natural background concentration of a pollutant is greater than the numeric water quality standard to protect aquatic life prescribed in Appendix A. "Natural background" means the concentration of a pollutant in a surface water due only to non-anthropogenic sources.
  5. ~~Natural adaptive processes have enabled a viable, balanced population of aquatic life to exist in a surface water where the level of a pollutant is greater than the numeric water quality standard to protect aquatic life prescribed in Appendix A; or~~

EPA disapproved section R18-11-115(B)(5), which is not in effect for CWA purposes.

6. Other factors or combination of factors that upon review by the Director warrant changing a numeric water quality standard for a surface water.
- C.** Site-specific standard by request. To request that the Director adopt a site-specific standard, a person must conduct a study to support the development of a site-specific standard using a scientifically-defensible procedure.
1. Before conducting the study, a person shall submit a study outline to the Director for approval that contains the following elements:
    - a. Identifies the pollutant;
    - b. Describes the reach's boundaries;
    - c. Uses one of the following procedures, as defined by the most recent EPA guidance documents:
      - i. The recalculation procedure,
      - ii. The water effects ratio for metals,
      - iii. The streamlined water effects ratio, or
      - iv. The Biotic ligand model.
    - d. Demonstrates that all designated uses are protected.
  2. Alternatively, a study outline submitted for the Director's approval must contain the following elements:
    - a. Identifies the pollutant;
    - b. Describes the reach's boundaries;
    - c. Describes the hydrologic regime of the waterbody;
    - d. Describes the scientifically-defensible procedure, which can include relevant aquatic life studies, ecological studies, laboratory tests, biological translators, fate and transport models, and risk analyses;
    - e. Describes and compares the taxonomic composition, distribution and density of the aquatic biota within the reach to a reference reach and describes the basis of any major taxonomic differences;
    - f. Describes the pollutant's effect on the affected species or appropriate surrogate species and on the other designated uses listed for the reach;
    - g. Demonstrates that all designated uses are protected; and
    - h. A person seeking to develop a site-specific standard based on natural background may use statistical or modeling approaches to determine natural background concentration. Modeling approaches include Better Assessment Science Integrating Source and Nonpoint Sources (Basins), Hydrologic Simulation Program-Fortran (HSPF), and Hydrologic Engineering Center (HEC) programs developed by the U.S. Army Corps of Engineers.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended effective April 24, 1996 (Supp. 96-2). Section repealed by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). New Section made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**R18-11-116. Resource Management Agencies**

Nothing in this Article prohibits fisheries management activities by the Arizona Game and Fish Department or the U.S. Fish and Wildlife Service. This Article does not exempt fish hatcheries from AZPDES permit requirements.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
 Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-117. Canals and Urban Park Lakes**

- A. Nothing in this Article prevents the routine physical or mechanical maintenance of canals, drains, and the urban lakes identified in Appendix B. Physical or mechanical maintenance includes dewatering, lining, dredging, and the physical, biological, or chemical control of weeds and algae. Increases in turbidity that result from physical or mechanical maintenance activities are permitted in canals, drains, and the urban lakes identified in Appendix B.
- B. The discharge of lubricating oil associated with the start-up of well pumps that discharge to canals is not a violation of R18-11-108(B).

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
Amended effective April 24, 1996 (Supp. 96-2).  
Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-118. Dams and Flood Control Structures**

Increases in turbidity that result from the routine physical or mechanical maintenance of a dam or flood control structure are not violations of this Article. Nothing in this Article requires the release of water from a dam or a flood control structure.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
Amended effective April 24, 1996 (Supp. 96-2).  
Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

**R18-11-119. Natural background**

Where the concentration of a pollutant exceeds a water quality standard and the exceedance is not caused by human activity but is due solely to naturally-occurring conditions, the exceedance shall not be considered a violation of the water quality standard.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).

**R18-11-120. Enforcement**

- A. Any person who causes a violation of a water quality standard or any provision of this Article is subject to the enforcement provisions in A.R.S. Title 49, Chapter 2, Article 4.
- B. The Department may establish a numeric water quality standard at a concentration that is below the practical quantitation limit. In such cases, the water quality standard is enforceable at the practical quantitation limit.
- C. The Department shall determine compliance with acute aquatic and wildlife criteria from the analytical result of a grab sample. Compliance with chronic aquatic and wildlife criteria shall be determined from the geometric mean of the analytical results of the last four samples taken at least 24 hours apart.
- D. A person is not subject to penalties for violation of a water quality standard provided that the person is in compliance with the provisions of a compliance schedule issued under R18-11-121.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
Amended effective April 24, 1996 (Supp. 96-2).  
Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1).

**R18-11-121. Schedules of Compliance**

A compliance schedule in an AZPDES permit shall require the permittee to comply with a discharge limitation based upon a new or revised water quality standard as soon as possible to achieve compliance. The permittee shall demonstrate that all requirements under § 301(b) and § 306 of the Clean Water Act [33 U.S.C. 1311(b) and 1316] are achieved and that the point source cannot

comply with a discharge limitation based upon the new or revised water quality standard through the application of existing water pollution control technology, operational changes, or source reduction. In establishing a compliance schedule, the Director shall consider:

1. How much time the permittee has already had to meet any effluent limitations under a prior permit;
2. The extent to which the permittee has made good faith efforts to comply with the effluent limitations and other requirements in a prior permit;
3. Whether treatment facilities, operations, or measures must be modified to meet the effluent limitations;
4. How long any necessary modifications would take to implement; and
5. Whether the permittee would be expected to use the same treatment facilities, operations or other measures to meet the effluent limitations as it would have used to meet the effluent limitations in a prior permit.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1).  
Amended effective April 24, 1996 (Supp. 96-2).  
Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**R18-11-122. Variances**

- ~~A. The Director shall consider a variance from a water quality standard for a point source discharge if the discharger demonstrates that treatment more advanced than that required to comply with technology-based effluent limitations is necessary to comply with the water quality standard and:~~
- ~~1. It is not technically feasible to achieve compliance within the next five years;~~
  - ~~2. The cost of the treatment would result in substantial and widespread economic and social impact; or~~
  - ~~3. Human-caused conditions or sources of pollution prevent attainment of the water quality standard and cannot be remedied within the next five years.~~
- ~~B. If the Director grants a variance for a point source discharge:~~
- ~~1. The Director shall issue the variance for a fixed term not to exceed five years;~~
  - ~~2. The variance shall apply only on a pollutant-specific basis. The point source discharge shall meet all other applicable water quality standards for which a variance is not granted; and~~
  - ~~3. The variance shall not modify a water quality standard. Other point source discharges to the surface water shall meet applicable water quality standards.~~
- ~~C. Upon expiration of a variance, a point source discharger shall either comply with the water quality standard or apply for renewal of the variance. To renew a variance, the applicant shall demonstrate reasonable progress towards compliance with the water quality standard during the term of the variance.~~
- ~~D. The Director shall reevaluate a variance upon the issuance, reissuance, or modification of the AZPDES permit for the point source discharge.~~
- ~~E. A person who seeks a variance from a water quality standard shall submit a written request for a variance to the Director. A request for a variance shall include the following information:~~
- ~~1. Identification of the specific pollutant and water quality standard for which a variance is sought;~~
  - ~~2. Identification of the receiving surface water;~~
  - ~~3. For an existing point source discharge, a detailed description of the existing discharge control technologies that are used to achieve compliance with applicable water quality standards. For a new point source discharge, a detailed~~

EPA has approved revisions to section R18-11-122 since the 2016 WQS. Please refer to the cover sheet for updated language that is in effect for CWA purposes.

- description of the proposed discharge control technologies that will be used to achieve compliance with applicable water quality standards;
4. ~~Documentation that the existing or proposed discharge control technologies will comply with applicable technology-based effluent limitations and that more advanced treatment technology is necessary to achieve compliance with the water quality standard for which a variance is sought;~~
  5. ~~A detailed discussion of the reasons why compliance with the water quality standard cannot be achieved;~~
  6. ~~A detailed discussion of the discharge control technologies that are available for achieving compliance with the water quality standard for which a variance is sought;~~
  7. ~~Documentation of one of the following:~~
    - a. ~~That it is not technically feasible to install and operate any of the available discharge control technologies to achieve compliance with the water quality standard for which a variance is sought;~~
    - b. ~~That installation and operation of each of the available discharge technologies to achieve compliance with the water quality standard would result in substantial and widespread economic and social impact;~~ or
    - c. ~~That human-caused conditions or sources of pollution prevent the attainment of the water quality standard for which the variance is sought and it is not possible to remedy the conditions or sources of pollution within the next five years;~~
  8. ~~Documentation that the point source discharger has reduced, to the maximum extent practicable, the discharge of the pollutant for which a variance is sought through implementation of a local pretreatment, source reduction, or waste minimization program;~~ and
  9. ~~A detailed description of proposed interim discharge limitations that represent the highest level of treatment achievable by the point source discharger during the term of the variance.~~
- F.** ~~The Director shall consider the following factors when deciding whether to grant or deny a variance request:~~
1. ~~Bioaccumulation;~~
  2. ~~The predicted exposure of biota and the likelihood that resident biota will be adversely affected;~~
  3. ~~The known or predicted safe exposure levels for the pollutant for which the variance is requested; and~~
  4. ~~The likelihood of adverse human health effects.~~
- G.** ~~The Director shall issue a public notice and provide an opportunity for a public hearing on whether the request for a variance should be granted or denied under A.A.C. R18-9-A907 and A.A.C. R18-9-A908. An interested party may request a public hearing on a variance under A.A.C. R18-9-A908(B).~~
- H.** ~~Any variance granted by the Director is subject to review and approval by the Regional Administrator.~~
- I.** ~~Any person who is adversely affected by a decision of the Director to grant or deny a variance and who has exercised any right to comment on the decision may appeal the decision under A.R.S. § 49-321 et seq. and A.R.S. § 41-1092 et seq.~~
- J.** ~~The Director shall not grant a variance for a point source discharge to an CAW listed in R18-11-112(G).~~

#### Historical Note

Adopted effective April 24, 1996 (Supp. 96-2). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

#### R18-11-123. Discharge Prohibitions

- A.** The discharge of wastewater to the following surface waters is prohibited:
1. Sabino Canyon Creek;
  2. Vekol Wash, upstream of the Ak-Chin Indian Reservation; and
  3. Smith Wash, upstream of the Ak-Chin Indian Reservation.
- B.** The discharge to Lake Powell of human body wastes and the wastes from toilets and other receptacles intended to receive or retain wastes from a vessel is prohibited.

#### Historical Note

Adopted effective April 24, 1996 (Supp. 96-2). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4).

EPA has approved the addition and/or amendment of aquatic life criteria for acrolein, carbaryl, diazinon, demeton, and nonylphenol since the 2016 WQS. EPA acknowledges additional non-substantive changes to Appendix A. Please refer to the cover sheet for updated criteria that are in effect for CWA purposes.

Appendix A. Numeric Water Quality Standards

Table 1. Water Quality Criteria By Designated Use (see f)

Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&Wc Acute (µg/L)	A&Wc Chronic (µg/L)	A&Ww Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wedw Acute (µg/L)	A&Wedw Chronic (µg/L)	A&We Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Acenaphthene	83329	420	198	56,000	56,000	850	550	850	550	850	550			
Acrolein	107028	3.5	1.9	467	467	34	30	34	30	34	30			
Acrylonitrile	107131	0.06	0.2	3	37,333	3,800	250	3,800	250	3,800	250			
Alachlor	15972608	2		9,333	9,333	2,500	170	2,500	170	2,500	170			
Aldrin	309002	0.002	0.00005	0.08	28	3		3		3		4.5	0.003	See (b)
Alpha Particles (Gross) Radioactivity		15 pCi/L See (h)												
Ammonia	7664417					See (e) & Table 11	See (e) & Table 12	See (e) & Table 11	See (e) & Table 12	See (e) & Table 11	See (e) & Table 12			
Anthracene	120127	2,100	74	280,000	280,000									
Antimony	7440360	6 T	640 T	747 T	747 T	88 D	30 D	88 D	30 D	1,000 D	600 D			
Arsenic	7440382	10 T	80 T	30 T	280 T	340 D	150 D	340 D	150 D	340 D	150 D	440 D	2,000 T	200 T
Asbestos	1332214	See (a)												
Atrazine	1912249	3		32,667	32,667									
Barium	7440393	2,000 T		98,000 T	98,000 T									
Benz(a)anthracene	56553	0.005	0.02	0.2	0.2									
Benzene	71432	5	140	93	3,733	2,700	180	2,700	180	8,800	560			
3, 4 Benzofluoranthene	205992	0.005	0.02	1.9	1.9									
Benzdine	92875	0.0002	0.0002	0.01	2,800	1,300	89	1,300	89	1,300	89	10,000	0.01	0.01
Benzo(a)pyrene	50328	0.2	0.02	0.2	0.2									
Benzo(k)fluoranthene	207089	0.005	0.02	1.9	1.9									
Beryllium	7440417	4 T	84 T	1,867 T	1,867 T	65 D	5.3 D	65 D	5.3 D	65 D	5.3 D			
Beta particles and photon emitters		4 millirems /year See (i)												
Bis(2-chloroethyl) ether	111444	0.03	0.5	1	1	120,000	6,700	120,000	6,700	120,000	6,700			
Bis(2-chloroisopropyl) ether	108601	280	3,441	37,333	37,333									
Boron	7440428	1,400 T		186,667 T	186,667 T								1,000 T	
Bromodichloromethane	75274	TTHM See (g)	17	TTHM	18,667									
p-Bromodiphenyl ether	101553					180	14	180	14	180	14			
Bromoform	75252	TTHM See (g)	133	180	18,667	15,000	10,000	15,000	10,000	15,000	10,000			
Bromomethane	74839	9.8	299	1,307	1,307	5,500	360	5,500	360	5,500	360			
Butyl benzyl phthalate	85687	1,400	386	186,667	186,667	1,700	130	1,700	130	1,700	130			
Cadmium	7440439	5 T	84 T	700 T	700 T	See (d) & Table 2	See (d) & Table 3	See (d) & Table 2	See (d) & Table 3	See (d) & Table 2	See (d) & Table 3	See (d) & Table 2	50	50
Carbofuran	1563662	40		4,667	4,667	650	50	650	50	650	50			
Carbon tetrachloride	56235	5	2	11	980	18,000	1,100	18,000	1,100	18,000	1,100			
Chlordane	57749	2	0.0008	4	467	2.4	0.004	2.4	0.2	2.4	0.2	3.2		
Chlorine (total residual)	7782505	4,000		4,000	4,000	19	11	19	11	19	11			
Chlorobenzene	108907	100	1,553	18,667	18,667	3,800	260	3,800	260	3,800	260			
2-Chloroethyl vinyl ether	110758					180,000	9,800	180,000	9,800	180,000	9,800			
Chloroform	67663	TTHM See (g)	470	230	9,333	14,000	900	14,000	900	14,000	900			
p-Chloro-m-cresol	59507					15	4.7	15	4.7	15	4.7	48,000		
Chloromethane	74873					270,000	15,000	270,000	15,000	270,000	15,000			
2-Chloronaphthalene	91587	560	317	74,667	74,667									
2-Chlorophenol	95578	35	30	4,667	4,667	2,200	150	2,200	150	2,200	150			
Chloropyrifos	2921882	21		2,800	2,800	0.08	0.04	0.08	0.04	0.08	0.04			
Chromium III	16065831		75,000 T	1,400,000 T	1,400,000 T	See (d) & Table 4	See (d) & Table 4	See (d) & Table 4	See (d) & Table 4	See (d) & Table 4	See (d) & Table 4	See (d) & Table 4		
Chromium VI	18540299	21 T	150 T	2,800 T	2,800 T	16 D	11 D	16 D	11 D	16 D	11 D	34 D		
Chromium (Total)	7440473	100 T											1,000	1,000
Chrysene	218019	0.005	0.02	19	19									
Copper	7440508	1,300 T		1,300 T	1,300 T	See (d) & Table 5	See (d) & Table 5	See (d) & Table 5	See (d) & Table 5	See (d) & Table 5	See (d) & Table 5	See (d) & Table 5	5,000 T	500 T
Cyanide (as free cyanide)	57125	200 T	16,000 T	18,667 T	18,667 T	22 T	5.2 T	41 T	9.7 T	41 T	9.7 T	84 T		200 T
Dalapon	75990	200	8,000	28,000	28,000									
Dibenz (ah) anthracene	53703	0.005	0.02	1.9	1.9									
Dibromochloromethane	124481	TTHM See (g)	13	TTHM	18,667									
1,2-Dibromo-3-chloropropane	96128	0.2		2,800	2,800									
1,2-Dibromoethane	106934	0.05		8,400	8,400									
Dibutyl phthalate	84742	700	899	93,333	93,333	470	35	470	35	470	35	1,100		
1,2-Dichlorobenzene	95501	600	205	84,000	84,000	790	300	1,200	470	1,200	470	5,900		
1,3-Dichlorobenzene	541731					2,500	970	2,500	970	2,500	970			
1,4-Dichlorobenzene	106467	75	5,755	373,333	373,333	560	210	2,000	780	2,000	780	6,500		
3,3'-Dichlorobenzidine	91941	0.08	0.03	3	3									
p,p'-Dichlorodiphenyltrichloroethane (DDT) and metabolites (DDD) and (DDE)	50293	0.1	0.0002	4	467	1.1	0.001	1.1	0.001	1.1	0.001	1.1	0.001	0.001
1,2-Dichloroethane	107062	5	37	15	186,667	59,000	41,000	59,000	41,000	59,000	41,000			
1,1-Dichloroethylene	75354	7	7,143	46,667	46,667	15,000	950	15,000	950	15,000	950			
1,2-cis-Dichloroethylene	156592	70		70										
1,2-trans-Dichloroethylene	156605	100	10,127	18,667	18,667	68,000	3,900	68,000	3,900	68,000	3,900			

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Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&Wc Acute (µg/L)	A&Wc Chronic (µg/L)	A&Ww Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wedw Acute (µg/L)	A&Wedw Chronic (µg/L)	A&We Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Dichloromethane	75092	5	593	190	56,000	97,000	5,500	97,000	5,500	97,000	5,500			
2,4-Dichlorophenol	120832	21	59	2,800	2,800	1,000	88	1,000	88	1,000	88			
2,4-Dichlorophenoxyacetic acid (2,4-D)	94757	70		9,333	9,333									
1,2-Dichloropropane	78875	5	17,518	84,000	84,000	26,000	9,200	26,000	9,200	26,000	9,200			
1,3-Dichloropropene	542756	0.7	42	420	28,000	3,000	1,100	3,000	1,100	3,000	1,100			
Dieldrin	60571	0.002	0.00005	0.09	47	0.2	0.06	0.2	0.06	0.2	0.06	4	0.003	See (b)
Diethyl phthalate	84662	5,600	8,767	746,667	746,667	26,000	1,600	26,000	1,600	26,000	1,600			
Di (2-ethylhexyl) adipate	103231	400		560,000	560,000									
Di (2-ethylhexyl) phthalate	117817	6	3	100	18,667	400	360	400	360	400	360	3,100		
2,4-Dimethylphenol	105679	140	171	18,667	18,667	1,000	310	1,000	310	1,000	310	150,000		
Dimethyl phthalate	131113					17,000	1,000	17,000	1,000	17,000	1,000			
4,6-Dinitro-o-cresol	534521	28	582	3,733	3,733	310	24	310	24	310	24			
2,4-Dinitrophenol	51285	14	1,067	1,867	1,867	110	9.2	110	9.2	110	9.2			
2,4-Dinitrotoluene	121142	14	421	1,867	1,867	14,000	860	14,000	860	14,000	860			
2,6-Dinitrotoluene	606202	0.05		2	3,733									
Di-n-octyl phthalate	117840	2,800		373,333	373,333									
Dinoseb	88857	7		933	933									
1,2-Diphenylhydrazine	122667	0.04	0.2	1.8	1.8	130	11	130	11	130	11			
Diquat	85007	20		2,053	2,053									
Endosulfan sulfate	1031078	42	18	5,600	5,600	0.2	0.06	0.2	0.06	0.2	0.06	3		
Endosulfan (Total)	115297	42	18	5,600	5,600	0.2	0.06	0.2	0.06	0.2	0.06	3		
Endothall	145733	100		18,667	18,667									
Endrin	72208	2	0.06	280	280	0.09	0.04	0.09	0.04	0.09	0.04	0.7	0.004	0.004
Endrin aldehyde	7421933					0.09	0.04	0.09	0.04	0.09	0.04	0.7		
Ethylbenzene	100414	700	2,133	93,333	93,333	23,000	1,400	23,000	1,400	23,000	1,400			
Fluoranthene	206440	280	28	37,333	37,333	2,000	1,600	2,000	1,600	2,000	1,600			
Fluorene	86737	280	1,067	37,333	37,333									
Fluoride	7782414	4,000		140,000	140,000									
Glyphosate	1071836	700	266,667	93,333	93,333									
Guthion	86500					0.01		0.01		0.01				
Heptachlor	76448	0.4	0.00008	0.4	467	0.5	0.004	0.5	0.004	0.6	0.01	0.9		
Heptachlor epoxide	1024573	0.2	0.00004	0.2	12	0.5	0.004	0.5	0.004	0.6	0.01	0.9		
Hexachlorobenzene	118741	1	0.0003	1	747	6	3.7	6	3.7	6	3.7			
Hexachlorobutadiene	87683	0.4	18	18	187	45	8.2	45	8.2	45	8.2			
Hexachlorocyclohexane alpha	319846	0.006	0.005	0.22	7,467	1,600	130	1,600	130	1,600	130	1,600		
Hexachlorocyclohexane beta	319857	0.02	0.02	0.78	560	1,600	130	1,600	130	1,600	130	1,600		
Hexachlorocyclohexane delta	319868					1,600	130	1,600	130	1,600	130	1,600		
Hexachlorocyclohexane gamma (lindane)	58899	0.2	1.8	280	280	1	0.08	1	0.28	1	0.61	11		
Hexachlorocyclopentadiene	77474	50	580	9,800	9,800	3.5	0.3	3.5	0.3	3.5	0.3			
Hexachloroethane	67721	2.5	3.3	100	933	490	350	490	350	490	350	850		
Hydrogen sulfide	7783064						2 See (c)		2 See (c)		2 See (c)			
Indeno (1,2,3-cd) pyrene	193395	0.05	0.49	1.9	1.9									
Iron	7439896						1,000 D		1,000 D		1,000 D			
Isophorone	78591	37	961	1,500	186,667	59,000	43,000	59,000	43,000	59,000	43,000			
Lead	7439971	15 T		15 T	15 T	See (d) & Table 6	See (d) & Table 6	See (d) & Table 6	See (d) & Table 6	See (d) & Table 6	See (d) & Table 6	See (d) & Table 6	10,000 T	100 T
Malathion	121755	140		18,667	18,667		0.1		0.1		0.1			
Manganese	7439965	980		130,667	130,667								10,000	
Mercury	7439976	2 T		280 T	280 T	2.4 D	0.01 D	2.4 D	0.01 D	2.4 D	0.01 D	5 D		10 T
Methoxychlor	72435	40		4,667	4,667		0.03		0.03		0.03			
Methylmercury			0.3 mg/kg											
Mirex	2385855	1		187	187		0.001		0.001		0.001			
Naphthalene	91203	140	1,524	18,667	18,667	1,100	210	3,200	580	3,200	580			
Nickel	7440020	140 T	4,600 T	28,000 T	28,000 T	See (d) & Table 7	See (d) & Table 7	See (d) & Table 7	See (d) & Table 7	See (d) & Table 7	See (d) & Table 7	See (d) & Table 7		
Nitrate	14797558	10,000		3,733,333	3,733,333									
Nitrite	14797650	1,000		233,333	233,333									
Nitrate + Nitrite		10,000												
Nitrobenzene	98953	3.5	138	467	467	1,300	850	1,300	850	1,300	850			
p-Nitrophenol	100027					4,100	3,000	4,100	3,000	4,100	3,000			
N-nitrosodimethylamine	62759	0.001	3	0.03	0.03									
N-nitrosodi-n-phenylamine	86306	7.1	6	290	290	2,900	200	2,900	200	2,900	200			
N-nitrosodi-n-propylamine	621647	0.005	0.5	0.2	88,667									
Oxamyl	23135220	200		23,333	23,333									
Parathion	56382					0.07	0.01	0.07	0.01	0.07	0.01			
Paraquat	1910425	32		4,200	4,200	100	54	100	54	100	54			
Pentachlorophenol	87865	1	1,000	12	28,000	See (e), (j) & Table 10	See (e), (j) & Table 10	See (e), (j) & Table 10	See (e), (j) & Table 10	See (e), (j) & Table 10	See (e), (j) & Table 10	See (e), (j) & Table 10		
Permethrin	52645531	350		46,667	46,667	0.3	0.2	0.3	0.2	0.3	0.2			

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Parameter	CAS NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	A&Wc Acute (µg/L)	A&Wc Chronic (µg/L)	A&Ww Acute (µg/L)	A&Ww Chronic (µg/L)	A&Wedw Acute (µg/L)	A&Wedw Chronic (µg/L)	A&We Acute (µg/L)	AgI (µg/L)	AgL (µg/L)
Phenanthrene	85018					30	6.3	30	6.3	30	6.3			
Phenol	108952	2,100	37	280,000	280,000	5,100	730	7,000	1,000	7,000	1,000	180,000		
Picloram	1918021	500	2,710	65,333	65,333									
Polychlorinatedbiphenyls (PCBs)	1336363	0.5	0.00006	19	19	2	0.01	2	0.02	2	0.02	11	0.001	0.001
Pyrene	129000	210	800	28,000	28,000									
Radium 226 + Radium 228		5 pCi/L												
Selenium	7782492	50 T	667 T	4,667 T	4,667 T		2 T		2 T		2 T	33 T	20 T	50 T
Silver	7440224	35 T	8,000 T	4,667 T	4,667 T	See (d) & Table 8		See (d) & Table 8		See (d) & Table 8		See (d) & Table 8		
Simazine	112349	4		4,667	4,667									
Strontium		8 pCi/L												
Styrene	100425	100		186,667	186,667	5,600	370	5,600	370	5,600	370			
Sulfides												100		
2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	1746016	0.00003	5x10-9	0.00003	0.0009	0.01	0.005	0.01	0.005	0.01	0.005	0.1		
1,1,2,2-Tetrachloroethane	79345	0.2	4	7	56,000	4,700	3,200	4,700	3,200	4,700	3,200			
Tetrachloroethylene	127184	5	261	9,333	9,333	2,600	280	6,500	680	6,500	680	15,000		
Thallium	7440280	2 T	7.2 T	75 T	75 T	700 D	150 D	700 D	150 D	700 D	150 D			
Toluene	108883	1,000	201,000	280,000	280,000	8,700	180	8,700	180	8,700	180			
Toxaphene	8001352	3	0.0003	1.3	933	0.7	0.0002	0.7	0.0002	0.7	0.0002	11	0.005	0.005
Tributyltin						0.5	0.07	0.5	0.07	0.5	0.07			
1,2,4-Trichlorobenzene	120821	70	70	9,333	9,333	750	130	1,700	300	1,700	300			
1,1,1-Trichloroethane	71556	200	428,571	1,866,667	1,866,667	2,600	1,600	2,600	1,600	2,600	1,600		1,000	
1,1,2-Trichloroethane	79005	5	16	25	3,733	18,000	12,000	18,000	12,000	18,000	12,000			
Trichloroethylene	79016	5	29	280,000	280	20,000	1,300	20,000	1,300	20,000	1,300			
2,4,6-Trichlorophenol	88062	3.2	2	130	130	160	25	160	25	160	25	3,000		
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP)	93721	50		7,467	7,467									
Trihalomethanes (T)		80												
Tritium		20,000 pCi/L												
Uranium	7440611	30 D		2,800	2,800									
Vinyl chloride	75014	2	5	2	2,800									
Xylenes (T)	1330207	10,000		186,667	186,667									
Zinc	7440666	2,100 T	5,106 T	280,000 T	280,000 T	See (d) & Table 9	See (d) & Table 9	See (d) & Table 9	See (d) & Table 9	See (d) & Table 9	See (d) & Table 9	See (d) & Table 9	10,000 T	25,000 T

Footnotes

- a. The asbestos standard is 7 million fibers (longer than 10 micrometers) per liter.
- b. The aldrin/dieldrin standard is exceeded when the sum of the two compounds exceeds 0.003 µg/L.
- c. In lakes, the acute criteria for hydrogen sulfide apply only to water samples taken from the epilimnion, or the upper layer of a lake or reservoir.
- d. Hardness, expressed as mg/L CaCO<sub>3</sub>, is determined according to the following criteria:
  - i. If the receiving water body has an A&Wc or A&Ww designated use, then hardness is based on the hardness of the receiving water body from a sample taken at the same time that the sample for the metal is taken, except that the hardness may not exceed 400 mg/L CaCO<sub>3</sub>.
  - ii. If the receiving water has an A&Wedw or A&We designated use, then the hardness is based on the hardness of the effluent from a sample taken at the same time that the sample for the metal is taken, except that the hardness may not exceed 400 mg/L CaCO<sub>3</sub>.
  - iii. The mathematical equations for the hardness-dependent parameter represent the water quality standards. Examples of criteria for the hardness-dependent parameters have been calculated and are presented in separate tables at the end of Appendix A for the convenience of the user.
- e. pH is determined according to the following criteria:
  - i. If the receiving water has an A&Wc or A&Ww designated use, then pH is based on the pH of the receiving water body from a sample taken at the same time that the sample for pentachlorophenol or ammonia is taken.
  - ii. If the receiving water body has an A&Wedw or A&We designated use, then the pH is based on the pH of the effluent from a sample taken at the same time that the sample for pentachlorophenol or ammonia is taken.
  - iii. The mathematical equations for ammonia represent the water quality standards. Examples of criteria for ammonia have been calculated and are presented in separate tables at the end of Appendix A for the convenience of the user.
- f. Table 1 abbreviations.
  - i. µg/L = micrograms per liter,
  - ii. mg/kg = milligrams per kilogram,
  - iii. pCi/L = picocuries per liter,
  - iv. D = dissolved,
  - v. T = total recoverable,
  - vi. TTHM indicates that the chemical is a trihalomethane.

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- g. The total trihalomethane (TTHM) standard is exceeded when the sum of these four compounds exceeds 80 µg/L, as a rolling annual average.
- h. The concentration of gross alpha particle activity includes radium-226, but excludes radon and uranium.
- i. The average annual concentration of beta particle activity and photon emitters from manmade radionuclides shall not produce an annual dose equivalent to the total body or any internal organ greater than four millirems per year.
- j. The mathematical equations for the pH-dependent parameters represent the water quality standards. Examples of criteria for the pH-dependent parameters have been calculated and are presented in separate tables at the end of Appendix A for the convenience of the user.
- k. Abbreviations for the mathematical equations are as follows:  
 e = the base of the natural logarithm and is a mathematical constant equal to 2.71828  
 LN = is the natural logarithm  
 CMC = Criterion Maximum Concentration (acute)  
 CCC= Criterion Continuous Concentration (chronic)

**Historical Note**

Appendix A repealed; new Appendix A, Table 1 adopted effective April 24, 1996 (Supp. 96-2). Appendix A, Table 1 amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 1 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 1 repealed; new Appendix A, Table 1 made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 1 amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 2. Acute Water Quality Standards for Dissolved Cadmium**

Aquatic and Wildlife coldwater		Aquatic and Wildlife warmwater, and edw		Aquatic and Wildlife ephemeral	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L.
20	0.42	20	0.74	20	11.3
100	2.0	100	4.3	100	64.6
400	7.7	400	19.1	400	290
$e^{(1.0166*LN(Hardness)-3.924)}*(1.136672-LN(Hardness))*0.041838$		$e^{(1.128*LN(Hardness)-3.6867)* (1.136672-LN(Hardness))*0.041838}$		$e^{(1.128*LN(Hardness)-0.9691)* (1.136672-LN(Hardness))*0.041838}$	

**Historical Note**

Appendix A repealed; new Appendix A, Table 2 adopted effective April 24, 1996 (Supp. 96-2). Appendix A, Table 2 amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 2 amended to correct references to footnotes (Supp. 02-4). Appendix A, Table 2 footnotes amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 2 repealed; new Appendix A, Table 2 made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 2 repealed; new Table 2 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 3. Chronic Water Quality Standards for Dissolved Cadmium**

Aquatic and Wildlife coldwater		Aquatic and Wildlife warmwater, and edw	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L
20	0.08	20	0.68
100	0.25	100	2.2
400	0.64	400	6.2
$e^{(0.7409*LN(Hardness)-4.719)}*(1.101672-LN(Hardness))*0.041838$		$e^{(0.7852*LN(Hardness)-2.715)* (1.101672-LN(Hardness))*0.041838}$	

**Historical Note**

Appendix A, Table 3 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 3 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 3 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 3 repealed; new Table 3 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 4. Water Quality Standards for Dissolved Chromium III**

Acute Aquatic and Wildlife coldwater, warmwater and edw		Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L
20	152	20	19.8	20	512
100	570	100	74.1	100	1912
400	1773	400	231	400	5950
$e^{(0.819*LN(Hardness)+3.7256)}*(0.316)$		$e^{(0.819*LN(Hardness)+0.6848)}*(0.86)$		$e^{(0.819*LN(Hardness)+4.9361)}*(0.316)$	

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**Historical Note**

Appendix A, Table 4 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 4 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 4 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 4 repealed; new Table 4 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 5. Water Quality Standards for Dissolved Copper**

Acute Aquatic and Wildlife coldwater, warmwater and edw		Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L
20	2.9	20	2.3	20	5.1
100	13.4	100	9.0	100	23.3
400	49.6	400	29.3	400	85.9
$e^{(0.9422*LN(Hardness)-1.702)}*(0.96)$		$e^{(0.8545*LN(Hardness)-1.702)}*(0.96)$		$e^{(0.9422*LN(Hardness)-1.1514)}*(0.96)$	

**Historical Note**

Appendix A, Table 5 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 5 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 5 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 5 repealed; new Table 5 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 6. Water Quality Standards for Dissolved Lead**

Acute Aquatic and Wildlife coldwater, warmwater and edw		Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L
20	10.8	20	0.4	20	22.8
100	64.6	100	2.5	100	136.3
400	281	400	10.9	400	592.7
$e^{(1.273*LN(Hardness)-1.46)}*(1.46203-(LN(Hardness))*(0.145712))$		$e^{(1.273*LN(Hardness)-4.705)}*(1.46203-(LN(Hardness))*(0.145712))$		$e^{(1.273*(LN(Hardness))-0.7131)}*(1.46203-(LN(Hardness))*(0.145712))$	

**Historical Note**

Appendix A, Table 6 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 6 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 6 renumbered to Table 9; new Table 6 made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 6 repealed; new Table 6 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 7. Water Quality Standards for Dissolved Nickel**

Acute Aquatic and Wildlife coldwater, warmwater and edw		Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L
20	120.0	20	13.3	20	1066
100	468	100	52.0	100	4158
400	1513	400	168	400	13436
$e^{(0.846*LN(Hardness)+2.255)}*(0.998)$		$e^{(0.846*LN(Hardness)+0.0584)}*(0.997)$		$e^{(0.846*LN(Hardness)+4.4389)}*(0.998)$	

**Historical Note**

Appendix A, Table 7 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 7 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 7 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 7 repealed; new Table 7 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 8. Water Quality Standards for Dissolved Silver**

Acute Aquatic and Wildlife coldwater, warmwater, edw, and ephemeral	
Hard. mg/L	Std. µg/L
20	0.20
100	3.2
400	34.9
$e^{(1.72*LN(Hardness)-6.59)}*(0.85)$	

**Historical Note**

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Appendix A, Table 8 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 8 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 8 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 8 repealed; new Table 8 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 9. Water Quality Standards for Dissolved Zinc**

Acute and Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
Hard. mg/L	Std. µg/L	Hard. mg/L	Std. µg/L
20	30.0	20	284
100	117	100	1112
400	379	400	3599
$e^{(0.8473*LN(Hardness)+0.884)}*(0.978)$		$e^{(0.8473*LN(Hardness)+3.1342)}*(0.978)$	

**Historical Note**

Appendix A, Table 9 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 9 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 9 renumbered to Table 11; new Table 9 renumbered from Table 6 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 9 repealed; new Table 9 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 10. Water Quality Standards for Pentachlorophenol**

Acute Aquatic and Wildlife coldwater, warmwater and edw		Chronic Aquatic and Wildlife coldwater, warmwater and edw		Acute Aquatic and Wildlife ephemeral	
pH	µg/L	pH	µg/L	pH	µg/L
3	0.16	3	0.1	3	0.66
6	3.3	6	2.1	6	13.5
9	67.7	9	42.7	9	274
$e^{(1.005*(pH)-4.83)}$		$e^{(1.005*(pH)-5.29)}$		$e^{(1.005*(pH)-3.4306)}$	

**Historical Note**

Appendix A, Table 10 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 10 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 10 renumbered to Table 12; new Table 10 renumbered from Table 11 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 10 repealed; new Table 10 made by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 11. Acute Criteria for Total Ammonia (in mg/L as N) Aquatic and Wildlife coldwater, warmwater, and edw**

pH	A&Wc	A&Ww and A&W edw
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.7	14.4
7.8	8.1	12.1
7.9	6.8	10.1
8.0	5.6	8.4
8.1	4.6	7.0
8.2	3.8	5.7
8.3	3.2	4.7
8.4	2.6	3.9

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8.5	2.1				3.2					
8.6	1.8				2.7					
8.7	1.5				2.2					
8.8	1.2				1.8					
8.9	1.0				1.6					
9.0	0.9				1.3					
Formula:	CMC	=	$\frac{0.275}{1+10^{7.204-pH}}$	+	$\frac{39.0}{1+10^{pH-7.204}}$	CMC	=	$\frac{0.411}{1+10^{7.204-pH}}$	+	$\frac{58.4}{1+10^{pH-7.204}}$

**Historical Note**

Appendix A, Table 11 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 11 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 11 renumbered to Table 10; new Table 11 renumbered from Table 9 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 11 repealed; new Table 11 renumbered from Table 25 and amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 12. Chronic Criteria for Total Ammonia (mg/L as N) Aquatic and Wildlife coldwater, warmwater, and edw**

pH	Temperature, °C									
	0	14	16	18	20	22	24	26	28	30
6.5	6.7	6.7	6.1	5.3	4.7	4.1	3.6	3.2	2.8	2.5
6.6	6.6	6.6	6.0	5.3	4.6	4.1	3.6	3.1	2.8	2.4
6.7	6.4	6.4	5.9	5.2	4.5	4.0	3.5	3.1	2.7	2.4
6.8	6.3	6.3	5.7	5.0	4.4	3.9	3.4	3.0	2.6	2.3
6.9	6.1	6.1	5.6	4.9	4.3	3.8	3.3	2.9	2.6	2.3
7.0	5.9	5.9	5.4	4.7	4.2	3.6	3.2	2.8	2.5	2.2
7.1	5.7	5.7	5.2	4.5	4.0	3.5	3.1	2.7	2.4	2.1
7.2	5.4	5.4	4.9	4.3	3.8	3.3	2.9	2.6	2.3	2.0
7.3	5.1	5.1	4.6	4.1	3.6	3.1	2.8	2.4	2.1	1.9
7.4	4.7	4.7	4.3	3.8	3.3	2.9	2.6	2.3	2.0	1.7
7.5	4.4	4.4	4.0	3.5	3.1	2.7	2.4	2.1	1.8	1.6
7.6	4.0	4.0	3.6	3.2	2.8	2.5	2.2	1.9	1.7	1.5
7.7	3.6	3.6	3.3	2.9	2.5	2.2	1.9	1.7	1.5	1.3
7.8	3.1	3.2	2.9	2.5	2.2	2.0	1.7	1.5	1.3	1.2
7.9	2.8	2.8	2.5	2.2	2.0	1.7	1.5	1.3	1.2	1.0
8.0	2.4	2.4	2.2	1.9	1.7	1.5	1.3	1.2	1.0	0.90
8.1	2.1	2.1	1.9	1.7	1.5	1.3	1.1	1.0	0.88	0.77
8.2	1.8	1.8	1.6	1.4	1.3	1.1	0.97	0.86	0.75	0.66
8.3	1.5	1.5	1.4	1.2	1.1	0.94	0.83	0.73	0.64	0.56
8.4	1.3	1.3	1.2	1.0	0.91	0.80	0.70	0.62	0.54	0.48
8.5	1.1	1.1	1.0	0.90	0.77	0.67	0.59	0.52	0.46	0.40
8.6	0.92	0.92	0.84	0.74	0.65	0.57	0.50	0.44	0.37	0.34
8.7	0.78	0.78	0.71	0.62	0.55	0.48	0.42	0.37	0.33	0.29
8.8	0.66	0.66	0.60	0.53	0.46	0.41	0.36	0.32	0.28	0.24
8.9	0.57	0.57	0.51	0.45	0.40	0.35	0.31	0.27	0.24	0.21
9.0	0.49	0.49	0.44	0.39	0.34	0.30	0.26	0.23	0.20	0.18
$CCC = \left( \frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.204}} \right) - \text{MIN}(2.85, 1.45 \cdot 10^{0.028 \cdot (25-T)})$										

**Historical Note**

Appendix A, Table 12 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 12 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 12 renumbered to Table 18; new Table 12 renumbered from Table 10 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 12 repealed; new Table 12 renumbered from Table 26 and amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 13. Repealed**

**Historical Note**

Appendix A, Table 13 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1).

Appendix A, Table 13 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 13 renumbered to Table 15; new Table 13 renumbered from Table 14 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 13 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 14. Repealed****Historical Note**

Appendix A, Table 14 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 14 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 14 renumbered to Table 13; new Table 14 renumbered from Table 15 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 14 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 15. Repealed****Historical Note**

Appendix A, Table 15 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 15 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 15 renumbered to Table 14; new Table 15 renumbered from Table 13 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 15 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 16. Repealed****Historical Note**

Appendix A, Table 16 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 16 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 16 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 16 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 17. Repealed****Historical Note**

Appendix A, Table 17 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 17 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 17 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 17 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 18. Repealed****Historical Note**

Appendix A, Table 18 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 18 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 18 repealed; new Table 18 renumbered from Table 12 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix

A, Table 18 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 19. Repealed****Historical Note**

Appendix A, Table 19 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 19 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 19 renumbered to Table 21; new Table 19 made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 19 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 20. Repealed****Historical Note**

Appendix A, Table 20 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 20 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 20 amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 20 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 21. Repealed****Historical Note**

Appendix A, Table 21 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 21 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 21 renumbered to Table 22; new Table 21 renumbered from Table 19 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 21 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 22. Repealed****Historical Note**

Appendix A, Table 22 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 22 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 22 renumbered to Table 23; new Table 22 renumbered from Table 21 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 22 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 23. Repealed****Historical Note**

Appendix A, Table 23 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 23 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 23 renumbered to Table 24; new Table 23 renumbered from Table 22 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 23 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 24. Repealed**

**Historical Note**

Appendix A, Table 24 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Appendix A, Table 24 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 24 renumbered to Table 25; new Table 24 renumbered from Table 23 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 24 repealed by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 25. Renumbered**

**Historical Note**

Appendix A, Table 25 adopted by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1).

Appendix A, Table 25 amended by final rulemaking at 9 A.A.R. 716, effective April 8, 2003 (Supp. 03-1). Appendix A, Table 25 renumbered to Table 26; new Table 25 renumbered from Table 24 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 25 renumbered to Table 11 by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Table 26. Renumbered**

**Historical Note**

Appendix A, Table 26 renumbered from Table 25 and amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Appendix A, Table 26 renumbered to Table 12 by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

EPA acknowledges additional non-substantive changes to Appendix B. Please refer to the cover sheet for updated criteria that are in effect for CWA purposes.

**Appendix B. Surface Waters and Designated Uses**

(Coordinates are from the North American Datum of 1983 (NAD83). All latitudes in Arizona are north and all longitudes are west, but the negative signs are not included in the Appendix B table. Some web-based mapping systems require a negative sign before the longitude values to indicate it is a west longitude.)

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife				Human Health			Agricultural		
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
BW	Alamo Lake	34°14'06"/113°35'00"	Deep		A&Ww			FBC			FC		AgL
BW	Big Sandy River	Headwaters to Alamo Lake			A&Ww			FBC			FC		AgL
BW	Bill Williams River	Alamo Lake to confluence with Colorado River			A&Ww			FBC			FC		AgL
BW	Blue Tank	34°40'14"/112°58'17"			A&Ww			FBC			FC		AgL
BW	Boulder Creek	Headwaters to confluence with unnamed tributary at 34°41'13"/113°03'37"		A&Wc				FBC			FC		AgL
BW	Boulder Creek	Below confluence with unnamed tributary to confluence with Burro Creek			A&Ww			FBC			FC		AgL
BW	Burro Creek (OAW)	Headwaters to confluence with Boulder Creek			A&Ww			FBC			FC		AgL
BW	Burro Creek	Below confluence with Boulder Creek to confluence with Big Sandy River			A&Ww			FBC			FC		AgL
BW	Carter Tank	34°52'27"/112°57'31"			A&Ww			FBC			FC		AgL
BW	Conger Creek	Headwaters to confluence with unnamed tributary at 34°45'15"/113°05'46"		A&Wc				FBC			FC		AgL
BW	Conger Creek	Below confluence with unnamed tributary to confluence with Burro Creek			A&Ww			FBC			FC		AgL
BW	Copper Basin Wash	Headwaters to confluence with unnamed tributary at 34°28'12"/112°35'33"		A&Wc				FBC			FC		AgL
BW	Copper Basin Wash	Below confluence with unnamed tributary to confluence with Skull Valley Wash				A&We			PBC				AgL
BW	Cottonwood Canyon	Headwaters to Bear Trap Spring		A&Wc				FBC			FC		AgL
BW	Cottonwood Canyon	Below Bear Trap Spring to confluence at Smith Canyon			A&Ww			FBC			FC		AgL
BW	Date Creek	Headwaters to confluence with Santa Maria River			A&Ww			FBC			FC		AgL
BW	Francis Creek (OAW)	Headwaters to confluence with Burro Creek			A&Ww			FBC		DWS	FC	AgI	AgL
BW	Kirkland Creek	Headwaters to confluence with Santa Maria River			A&Ww			FBC			FC	AgI	AgL
BW	Knight Creek	Headwaters to confluence with Big Sandy River			A&Ww			FBC			FC		AgL
BW	Peeples Canyon (OAW)	Headwaters to confluence with Santa Maria River			A&Ww			FBC			FC		AgL
BW	Red Lake	35°12'18"/113°03'57"	Sedimentary		A&Ww			FBC			FC		AgL
BW	Santa Maria River	Headwaters to Alamo Lake			A&Ww			FBC			FC	AgI	AgL
BW	Trout Creek	Headwaters to confluence with unnamed tributary at 35°06'47"/113°13'01"		A&Wc				FBC			FC		AgL
BW	Trout Creek	Below confluence with unnamed tributary to confluence with Knight Creek			A&Ww			FBC			FC		AgL
CG	Agate Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Beaver Dam Wash	Headwaters to confluence with the Virgin River			A&Ww			FBC			FC		AgL
CG	Big Springs Tank	36°36'08"/112°21'01"		A&Wc				FBC			FC		AgL
CG	Boucher Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Bright Angel Creek	Headwaters to confluence with Roaring Springs Creek		A&Wc				FBC			FC		
CG	Bright Angel Creek	Below Roaring Spring Springs Creek to confluence with Colorado River			A&Ww			FBC			FC		
CG	Bright Angel Wash	Headwaters to Grand Canyon National Park South Rim WWTP outfall at 36°02'59"/112°09'02"				A&We			PBC				
CG	Bright Angel Wash (EDW)	Grand Canyon National Park South Rim WWTP outfall to Coconino Wash					A&Wedw		PBC				AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
CG	Bulrush Canyon Wash	Headwaters to confluence with Kanab Creek				A&We			PBC				
CG	Cataract Creek	Headwaters to Santa Fe Reservoir		A&Wc				FBC		DWS	FC	AgI	AgL
CG	Cataract Creek	Santa Fe Reservoir to City of Williams WWTP outfall at 35°14'40"/112°11'18"		A&Wc				FBC			FC	AgI	AgL
CG	Cataract Creek (EDW)	City of Williams WWTP outfall to 1 km downstream				A&Wedw			PBC				
CG	Cataract Creek	Red Lake Wash to Havasupai Indian Reservation boundary				A&We			PBC				AgL
CG	Cataract Lake	35°15'04"/112°12'58"	Igneous	A&Wc				FBC		DWS	FC		AgL
CG	Chuar Creek	Headwaters to confluence with unnamed tributary at 36°11'35"/111°52'20"		A&Wc				FBC			FC		
CG	Chuar Creek	Below unnamed tributary to confluence with the Colorado River			A&Ww			FBC			FC		
CG	City Reservoir	35°13'57"/112°11'25"	Igneous	A&Wc				FBC		DWS	FC		
CG	Clear Creek	Headwaters to confluence with unnamed tributary at 36°07'33"/112°00'03"		A&Wc				FBC			FC		
CG	Clear Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww			FBC			FC		
CG	Coconino Wash (EDW)	South Grand Canyon Sanitary District Tusayan WRF outfall at 35°58'39"/112°08'25" to 1 km downstream				A&Wedw			PBC				
CG	Colorado River	Lake Powell to Lake Mead		A&Wc				FBC		DWS	FC	AgI	AgL
CG	Cottonwood Creek	Headwaters to confluence with unnamed tributary at 35°20'46"/113°35'31"		A&Wc				FBC			FC		AgL
CG	Cottonwood Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww			FBC			FC		AgL
CG	Crystal Creek	Headwaters to confluence with unnamed tributary at 36°13'41"/112°11'49"		A&Wc				FBC			FC		
CG	Crystal Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww			FBC			FC		
CG	Deer Creek	Headwaters to confluence with unnamed tributary at 36°26'15"/112°28'20"		A&Wc				FBC			FC		
CG	Deer Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww			FBC			FC		
CG	Detrital Wash	Headwaters to Lake Mead				A&We			PBC				
CG	Dogtown Reservoir	35°12'40"/112°07'54"	Igneous	A&Wc				FBC		DWS	FC	AgI	AgL
CG	Dragon Creek	Headwaters to confluence with Milk Creek		A&Wc				FBC			FC		
CG	Dragon Creek	Below confluence with Milk Creek to confluence with Crystal Creek			A&Ww			FBC			FC		
CG	Garden Creek	Headwaters to confluence with Pipe Creek			A&Ww			FBC			FC		
CG	Gonzalez Lake	35°15'26"/112°12'09"	Shallow	A&Ww				FBC			FC	AgI	AgL
CG	Grand Wash	Headwaters to Lake Mead				A&We			PBC				
CG	Grapevine Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Grapevine Wash	Headwaters to Lake Mead				A&We			PBC				
CG	Hakatai Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Hance Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Havasupai Canyon Creek	From the Havasupai Indian Reservation boundary to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Hermit Creek	Headwaters to Hermit Pack Trail crossing at 36°03'38"/112°14'00"		A&Wc				FBC			FC		
CG	Hermit Creek	Below Hermit Pack Trail crossing to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Horn Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Hualapai Wash	Headwaters to Lake Mead				A&We			PBC				
CG	Jacob Lake	36°42'27"/112°13'50"	Sedimentary	A&Wc				FBC			FC		
CG	Kaibab Lake	35°17'04"/112°09'32"	Igneous	A&Wc				FBC		DWS	FC	AgI	AgL
CG	Kanab Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC		DWS	FC		AgL
CG	Kwagunt Creek	Headwaters to confluence with unnamed tributary at 36°13'37"/111°54'50"		A&Wc				FBC			FC		
CG	Kwagunt Creek	Below confluence with unnamed tributary to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Lake Mead	36°06'18"/114°26'33"	Deep	A&Wc				FBC		DWS	FC	AgI	AgL
CG	Lake Powell	36°59'53"/111°08'17"	Deep	A&Wc				FBC		DWS	FC	AgI	AgL
CG	Lonetree Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Matkatamiba Creek	Below Havasupai Indian Reservation boundary to confluence with the Colorado River			A&Ww			FBC			FC		
CG	Monument Creek	Headwaters to confluence with the Colorado River			A&Ww			FBC			FC		

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
CG	Nankoweap Creek	Headwaters to confluence with unnamed tributary at 36°15'29"/111°57'26"		A&Wc			FBC			FC	
CG	Nankoweap Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww		FBC			FC	
CG	National Canyon Creek	Headwaters to Hualapai Indian Reservation boundary at 36°15'15"/112°52'34"			A&Ww		FBC			FC	
CG	North Canyon Creek	Headwaters to confluence with unnamed tributary at 36°33'58"/111°55'41"		A&Wc			FBC			FC	
CG	North Canyon Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww		FBC			FC	
CG	Olo Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Parashant Canyon	Headwaters to confluence with unnamed tributary at 36°21'02"/113°27'56"		A&Wc			FBC			FC	
CG	Parashant Canyon	Below confluence with unnamed tributary to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Paria River	Utah border to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Phantom Creek	Headwaters to confluence with unnamed tributary at 36°09'29"/112°08'13"		A&Wc			FBC			FC	
CG	Phantom Creek	Below confluence with unnamed tributary to confluence with Bright Angel Creek			A&Ww		FBC			FC	
CG	Pipe Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Red Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Red Lake	35°40'03"/114°04'07"			A&Ww		FBC			FC	AgL
CG	Roaring Springs	36°11'45"/112°02'06"		A&Wc			FBC		DWS	FC	
CG	Roaring Springs Creek	Headwaters to confluence with Bright Angel Creek		A&Wc			FBC			FC	
CG	Rock Canyon	Headwaters to confluence with Truxton Wash				A&We			PBC		
CG	Royal Arch Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Ruby Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Russell Tank	35°52'21"/111°52'45"		A&Wc			FBC			FC	AgL
CG	Saddle Canyon Creek	Headwaters to confluence with unnamed tributary at 36°21'36"/112°22'43"		A&Wc			FBC			FC	
CG	Saddle Canyon Creek	Below confluence with unnamed tributary to confluence with Colorado River			A&Ww		FBC			FC	
CG	Santa Fe Reservoir	35°14'31"/112°11'10"	Igneous	A&Wc			FBC		DWS	FC	
CG	Sapphire Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Serpentine Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Shinumo Creek	Headwaters to confluence with unnamed tributary at 36°18'18"/112°18'07"		A&Wc			FBC			FC	
CG	Shinumo Creek	Below confluence with unnamed tributary to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Short Creek	Headwaters to confluence with the Virgin River				A&We			PBC		
CG	Slate Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Spring Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Stone Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Tapeats Creek	Headwaters to confluence with the Colorado River		A&Wc			FBC			FC	
CG	Thunder River	Headwaters to confluence with Tapeats Creek		A&Wc			FBC			FC	
CG	Trail Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Transept Canyon	Headwaters to Grand Canyon National Park North Rim WWTP outfall at 36°12'20"/112°03'35"				A&We			PBC		
CG	Transept Canyon (EDW)	Grand Canyon National Park North Rim WWTP outfall to 1 km downstream					A&Wedw		PBC		
CG	Transept Canyon	From 1 km downstream of the Grand Canyon National Park North Rim WWTP outfall to confluence with Bright Angel Creek				A&We			PBC		
CG	Travertine Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Truxton Wash	Headwaters to Red Lake				A&We			PBC		
CG	Turquoise Canyon Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	
CG	Unkar Creek	Below confluence with unnamed tributary at 36°07'54"/111°54'06" to confluence with Colorado River			A&Ww		FBC			FC	
CG	Unnamed Wash (EDW)	Grand Canyon National Park Desert View WWTP outfall at 36°02'06"/111°49'13" to confluence with Cedar Canyon					A&Wedw		PBC		

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
CG	Unnamed Wash (EDW)	Valle Airpark WRF outfall at 35°38'34"/112°09'22" to confluence with Spring Valley Wash				A&Wedw		PBC				
CG	Vasey's Paradise	A spring at 36°29'52"/111°51'26"		A&Wc			FBC			FC		
CG	Virgin River	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC	AgI	AgL
CG	Vishnu Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC		
CG	Warm Springs Creek	Headwaters to confluence with the Colorado River			A&Ww		FBC			FC		
CG	West Cataract Creek	Headwaters to confluence with Cataract Creek		A&Wc			FBC			FC		AgL
CG	White Creek	Headwaters to confluence with unnamed tributary at 36°18'45"/112°21'03"		A&Wc			FBC			FC		
CG	White Creek	Below confluence with unnamed tributary to confluence with the Colorado River			A&Ww		FBC			FC		
CG	Wright Canyon Creek	Headwaters to confluence with unnamed tributary at 35°20'48"/113°30'40"		A&Wc			FBC			FC		AgL
CG	Wright Canyon Creek	Below confluence with unnamed tributary to confluence with Truxton Wash			A&Ww		FBC			FC		AgL
CL	A10 Backwater	33°31'45"/114°33'19"	Shallow		A&Ww		FBC			FC		
CL	A7 Backwater	33°34'27"/114°32'04"	Shallow		A&Ww		FBC			FC		
CL	Adobe Lake	33°02'36"/114°39'26"	Shallow		A&Ww		FBC			FC		
CL	Cibola Lake	33°14'01"/114°40'31"	Shallow		A&Ww		FBC			FC		
CL	Clear Lake	33°01'59"/114°31'19"	Shallow		A&Ww		FBC			FC		
CL	Columbus Wash	Headwaters to confluence with the Gila River				A&We		PBC				
CL	Colorado River	Lake Mead to Topock Marsh		A&Wc			FBC		DWS	FC	AgI	AgL
CL	Colorado River	Topock Marsh to Morelos Dam			A&Ww		FBC		DWS	FC	AgI	AgL
CL	Gila River	Painted Rock Dam to confluence with the Colorado River			A&Ww		FBC			FC	AgI	AgL
CL	Holy Moses Wash	Headwaters to City of Kingman Downtown WWTP outfall at 35°10'33"/114°03'46"				A&We		PBC				
CL	Holy Moses Wash (EDW)	City of Kingman Downtown WWTP outfall to 3 km downstream					A&Wedw	PBC				
CL	Holy Moses Wash	From 3 km downstream of City of Kingman Downtown WWTP outfall to confluence with Sawmill Wash				A&We		PBC				
CL	Hunter's Hole Backwater	' 32°31'13"/114°48'07"	Shallow		A&Ww		FBC			FC		AgL
CL	Imperial Reservoir	' 32°53'02"/114°27'54"	Shallow		A&Ww		FBC		DWS	FC	AgI	AgL
CL	Island Lake	' 33°01'44"/114°36'42"	Shallow		A&Ww		FBC			FC		
CL	Laguna Reservoir	32°51'35"/114°28'29"	Shallow		A&Ww		FBC		DWS	FC	AgI	AgL
CL	Lake Havasu	34°35'18"/114°25'47"	Deep		A&Ww		FBC		DWS	FC	AgI	AgL
CL	Lake Mohave	35°26'58"/114°38'30"	Deep	A&Wc			FBC		DWS	FC	AgI	AgL
CL	Martinez Lake	32°58'49"/114°28'09"	Shallow		A&Ww		FBC			FC	AgI	AgL
CL	Mittry Lake	32°49'17"/114°27'54"	Shallow		A&Ww		FBC			FC		
CL	Mohave Wash	Headwaters to Lake Havasu				A&We		PBC				
CL	Nortons Lake	33°02'30"/114°37'59"	Shallow		A&Ww		FBC			FC		
CL	Painted Rock (Borrow Pit) Lake	33°04'55"/113°01'17"	Sedimentary		A&Ww		FBC			FC	AgI	AgL
CL	Pretty Water Lake	33°19'51"/114°42'19"	Shallow		A&Ww		FBC			FC		
CL	Quigley Ponds	32°43'40"/113°57'44"	Shallow		A&Ww		FBC			FC		
CL	Redondo Lake	32°44'32"/114°29'03"	Shallow		A&Ww		FBC			FC		
CL	Sacramento Wash	Headwaters to Topock Marsh				A&We		PBC				
CL	Sawmill Canyon	Headwaters to abandoned gaging station at 35°09'45"/113°57'56"			A&Ww		FBC			FC		AgL
CL	Sawmill Canyon	Below abandoned gaging station to confluence with Holy Moses Wash				A&We		PBC				AgL
CL	Topock Marsh	34°43'27"/114°28'59"	Shallow		A&Ww		FBC		DWS	FC	AgI	AgL
CL	Tyson Wash (EDW)	Town of Quartzsite WWTP outfall at 33°42'39"/114°13'10" to 1 km downstream					A&Wedw	PBC				
CL	Wellton Canal	Wellton-Mohawk Irrigation District							DWS		AgI	AgL
CL	Wellton Ponds	32°40'32"/114°00'26"			A&Ww		FBC			FC		
CL	YPG Pond	32°50'58"/114°26'14"			A&Ww		FBC			FC		
CL	Yuma Area Canals	Above municipal water treatment plant intakes							DWS		AgI	AgL
CL	Yuma Area Canals	Below municipal water treatment plant intakes and all drains									AgI	AgL
LC	Als Lake	35°02'10"/111°25'17"	Igneous		A&Ww		FBC			FC		AgL
LC	Ashurst Lake	35°01'06"/111°24'18"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Atcheson Reservoir	33°59'59"/109°20'43"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	Auger Creek	Headwaters to confluence with Nutrioso Creek		A&Wc			FBC			FC		AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
LC	Barbershop Canyon Creek	Headwaters to confluence with East Clear Creek		A&Wc			FBC			FC		AgL
LC	Bear Canyon Creek	Headwaters to confluence with General Springs Canyon		A&Wc			FBC			FC		AgL
LC	Bear Canyon Creek	Headwaters to confluence with Willow Creek		A&Wc			FBC			FC		AgL
LC	Bear Canyon Lake	34°24'00"/111°00'06"	Sedimentary	A&Wc			FBC			FC	AgI	AgL
LC	Becker Lake	34°09'11"/109°18'23"	Shallow	A&Wc			FBC			FC		AgL
LC	Billy Creek	Headwaters to confluence with Show Low Creek		A&Wc			FBC			FC		AgL
LC	Black Canyon Creek	Headwaters to confluence with Chevelon Creek		A&Wc			FBC			FC	AgI	AgL
LC	Black Canyon Lake	34°20'32"/110°40'13"	Sedimentary	A&Wc			FBC		DWS	FC	AgI	AgL
LC	Blue Ridge Reservoir	34°32'40"/111°11'33"	Deep	A&Wc			FBC			FC	AgI	AgL
LC	Boot Lake	34°58'54"/111°20'11"	Igneous	A&Wc			FBC			FC		AgL
LC	Bow and Arrow Wash	Headwaters to confluence with Rio de Flag				A&We			PBC			
LC	Buck Springs Canyon Creek	Headwaters to confluence with Leonard Canyon Creek		A&Wc			FBC			FC		AgL
LC	Bunch Reservoir	34°02'20"/109°26'48"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Camillo Tank	34°55'03"/111°22'40"	Igneous		A&Ww		FBC			FC		AgL
LC	Carnero Lake	34°06'57"/109°31'42"	Shallow	A&Wc			FBC			FC		AgL
LC	Chevelon Canyon Lake	34°29'18"/110°49'30"	Sedimentary	A&Wc			FBC			FC	AgI	AgL
LC	Chevelon Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL
LC	Chevelon Creek, West Fork	Headwaters to confluence with Chevelon Creek		A&Wc			FBC			FC		AgL
LC	Chilson Tank	34°51'43"/111°22'54"	Igneous		A&Ww		FBC			FC		AgL
LC	Clear Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC		DWS	FC		AgL
LC	Clear Creek Reservoir	34°57'09"/110°39'14"	Shallow	A&Wc			FBC		DWS	FC	AgI	AgL
LC	Coconino Reservoir	35°00'05"/111°24'10"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Colter Creek	Headwaters to confluence with Nutrioso Creek		A&Wc			FBC			FC		AgL
LC	Colter Reservoir	33°56'39"/109°28'53"	Shallow	A&Wc			FBC			FC		AgL
LC	Concho Creek	Headwaters to confluence with Carrizo Wash		A&Wc			FBC			FC		AgL
LC	Concho Lake	34°26'37"/109°37'40"	Shallow	A&Wc			FBC			FC	AgI	AgL
LC	Cow Lake	34°53'14"/111°18'51"	Igneous		A&Ww		FBC			FC		AgL
LC	Coyote Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL
LC	Crisis Lake (Snake Tank #2)	34°47'51"/111°17'32"			A&Ww		FBC			FC		AgL
LC	Dane Canyon Creek	Headwaters to confluence with Barbershop Canyon Creek		A&Wc			FBC			FC		AgL
LC	Daves Tank	34°44'22"/111°17'15"			A&Ww		FBC			FC		AgL
LC	Deep Lake	35°03'34"/111°25'00"	Igneous		A&Ww		FBC			FC		AgL
LC	Dry Lake (EDW)	34°38'02"/110°23'40"	EDW						PBC			
LC	Ducksnest Lake	34°59'14"/111°23'57"			A&Ww		FBC			FC		AgL
LC	East Clear Creek	Headwaters to confluence with Clear Creek		A&Wc			FBC			FC	AgI	AgL
LC	Ellis Wiltbank Reservoir	34°05'25"/109°28'25"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	Estates at Pine Canyon lakes (EDW)	35°09'32"/111°38'26"	EDW					A&Wedw	PBC			
LC	Fish Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC		AgL
LC	Fool's Hollow Lake	34°16'30"/110°03'43"	Igneous	A&Wc			FBC			FC		AgL
LC	General Springs Canyon Creek	Headwaters to confluence with East Clear Creek		A&Wc			FBC			FC		AgL
LC	Geneva Reservoir	34°01'45"/109°31'46"	Igneous		A&Ww		FBC			FC		AgL
LC	Hall Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL
LC	Hart Canyon Creek	Headwaters to confluence with Willow Creek		A&Wc			FBC			FC		AgL
LC	Hay Lake	34°00'11"/109°25'57"	Igneous	A&Wc			FBC			FC		AgL
LC	Hog Wallow Lake	33°58'57"/109°25'39"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Horse Lake	35°03'55"/111°27'50"			A&Ww		FBC			FC		AgL
LC	Hulsey Creek	Headwaters to confluence with Nutrioso Creek		A&Wc			FBC			FC		AgL
LC	Hulsey Lake	33°55'58"/109°09'40"	Sedimentary	A&Wc			FBC			FC		AgL
LC	Indian Lake	35°00'39"/111°22'41"			A&Ww		FBC			FC		AgL
LC	Jack's Canyon Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
LC	Jarvis Lake	33°58'59"/109°12'36"	Sedimentary		A&Ww		FBC			FC		AgL
LC	Kinnikinick Lake	34°53'53"/111°18'18"	Igneous	A&Wc			FBC			FC		AgL
LC	Knoll Lake	34°25'38"/111°05'13"	Sedimentary	A&Wc			FBC			FC		AgL
LC	Lake Humphreys (EDW)	35°11'51"/111°35'19"	EDW			A&Wedw		PBC				
LC	Lake Mary, Lower	35°06'21"/111°34'38"	Igneous	A&Wc			FBC		DWS	FC		AgL
LC	Lake Mary, Upper	35°03'23"/111°28'34"	Igneous	A&Wc			FBC		DWS	FC		AgL
LC	Lake of the Woods	34°09'40"/109°58'47"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Lee Valley Creek (OAW)	Headwaters to Lee Valley Reservoir		A&Wc			FBC			FC		
LC	Lee Valley Creek	From Lee Valley Reservoir to confluence with the East Fork of the Little Colorado River		A&Wc			FBC			FC		AgL
LC	Lee Valley Reservoir	33°56'29"/109°30'04"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Leonard Canyon Creek	Headwaters to confluence with Clear Creek		A&Wc			FBC			FC		AgL
LC	Leonard Canyon Creek, East Fork	Headwaters to confluence with Leonard Canyon Creek		A&Wc			FBC			FC		AgL
LC	Leonard Canyon Creek, Middle Fork	Headwaters to confluence with Leonard Canyon, West Fork		A&Wc			FBC			FC		AgL
LC	Leonard Canyon Creek, West Fork	Headwaters to confluence with Leonard Canyon, East Fork		A&Wc			FBC			FC		AgL
LC	Lily Creek	Headwaters to confluence with Coyote Creek		A&Wc			FBC			FC		AgL
LC	Little Colorado River	Headwaters to Lyman Reservoir		A&Wc			FBC			FC	AgI	AgL
LC	Little Colorado River	Below Lyman Reservoir to confluence with the Puerco River		A&Wc			FBC		DWS	FC	AgI	AgL
LC	Little Colorado River	Below confluence with the Puerco River to the Navajo Nation Reservation boundary			A&Ww		FBC		DWS	FC	AgI	AgL
LC	Little Colorado River, East Fork	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC		AgL
LC	Little Colorado River, South Fork	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC		AgL
LC	Little Colorado River, West Fork (OAW)	Headwaters to Government Springs		A&Wc			FBC			FC		
LC	Little Colorado River, West Fork	Below Government Springs to confluence with the Little Colorado River		A&Wc			FBC			FC		AgL
LC	Little George Reservoir	34°00'37"/109°19'15"	Igneous		A&Ww		FBC			FC	AgI	
LC	Little Mormon Lake	34°17'00"/109°58'06"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	Little Ortega Lake	34°22'47"/109°40'06"	Igneous	A&Wc			FBC			FC		
LC	Long Lake, Lower	34°47'16"/111°12'40"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Long Lake, Upper	35°00'08"/111°21'23"	Igneous	A&Wc			FBC			FC		AgL
LC	Long Tom Tank	34°20'35"/110°49'22"		A&Wc			FBC			FC		AgL
LC	Lower Walnut Canyon Lake (EDW)	35°12'04"/111°34'07"	EDW			A&Wedw		PBC				
LC	Lyman Reservoir	34°21'21"/109°21'35"	Deep	A&Wc			FBC			FC	AgI	AgL
LC	Mamie Creek	Headwaters to confluence with Coyote Creek		A&Wc			FBC			FC		AgL
LC	Marshall Lake	35°07'18"/111°32'07"	Igneous	A&Wc			FBC			FC		AgL
LC	McKay Reservoir	34°01'27"/109°13'48"		A&Wc			FBC			FC	AgI	AgL
LC	Merritt Draw Creek	Headwaters to confluence with Barbershop Canyon Creek		A&Wc			FBC			FC		AgL
LC	Mexican Hay Lake	34°01'58"/109°21'25"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Milk Creek	Headwaters to confluence with Hulsey Creek		A&Wc			FBC			FC		AgL
LC	Miller Canyon Creek	Headwaters to confluence with East Clear Creek		A&Wc			FBC			FC		AgL
LC	Miller Canyon Creek, East Fork	Headwaters to confluence with Miller Canyon Creek		A&Wc			FBC			FC		AgL
LC	Mineral Creek	Headwaters to Little Ortega Lake		A&Wc			FBC			FC	AgI	AgL
LC	Mormon Lake	34°56'38"/111°27'25"	Shallow	A&Wc			FBC		DWS	FC	AgI	AgL
LC	Morton Lake	34°53'37"/111°17'41"	Igneous	A&Wc			FBC			FC		AgL
LC	Mud Lake	34°55'19"/111°21'29"	Shallow		A&Ww		FBC			FC		AgL
LC	Ned Lake (EDW)	34°17'17"/110°03'22"	EDW			A&Wedw		PBC				
LC	Nelson Reservoir	34°02'52"/109°11'19"	Sedimentary	A&Wc			FBC			FC	AgI	AgL
LC	Norton Reservoir	34°03'57"/109°31'27"	Igneous		A&Ww		FBC			FC		AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
LC	Nutrisio Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL
LC	Paddy Creek	Headwaters to confluence with Nutrisio Creek		A&Wc			FBC			FC		AgL
LC	Phoenix Park Wash	Headwaters to Dry Lake				A&We		PBC				
LC	Pierce Seep	34°23'39"/110°31'17"		A&Wc				PBC				
LC	Pine Tank	34°46'49"/111°17'21"	Igneous		A&Ww		FBC			FC		AgL
LC	Pintail Lake (EDW)	34°18'05"/110°01'21"	EDW			A&Wedw		PBC				
LC	Porter Creek	Headwaters to confluence with Show Low Creek		A&Wc			FBC			FC		AgL
LC	Potato Lake	35°03'15"/111°24'13"	Igneous	A&Wc			FBC			FC		AgL
LC	Pratt Lake	34°01'32"/109°04'18"	Sedimentary	A&Wc			FBC			FC		
LC	Puerco River	Headwaters to confluence with the Little Colorado River			A&Ww		FBC		DWS	FC	AgI	AgL
LC	Puerco River (EDW)	Sanders Unified School District WWTP outfall at 35°12'52"/109°19'40" to 0.5 km downstream				A&Wedw		PBC				
LC	Rainbow Lake	34°09'00"/109°59'09"	Shallow Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Reagan Reservoir	34°02'09"/109°08'41"	Igneous		A&Ww		FBC			FC		AgL
LC	Rio de Flag	Headwaters to City of Flagstaff WWTP outfall at 35°12'21"/111°39'17"				A&We		PBC				
LC	Rio de Flag (EDW)	From City of Flagstaff WWTP outfall to the confluence with San Francisco Wash				A&Wedw		PBC				
LC	River Reservoir	34°02'01"/109°26'07"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Rogers Reservoir	33°56'30"/109°16'20"	Igneous		A&Ww		FBC			FC		AgL
LC	Rudd Creek	Headwaters to confluence with Nutrisio Creek		A&Wc			FBC			FC		AgL
LC	Russel Reservoir	33°59'29"/109°20'01"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	San Salvador Reservoir	33°58'51"/109°19'55"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Scott Reservoir	34°10'31"/109°57'31"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Show Low Creek	Headwaters to confluence with Silver Creek		A&Wc			FBC			FC	AgI	AgL
LC	Show Low Lake	34°11'36"/110°00'12"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Silver Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL
LC	Slade Reservoir	33°59'41"/109°20'26"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	Soldiers Annex Lake	34°47'15"/111°13'51"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Soldiers Lake	34°47'47"/111°14'04"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Spaulding Tank	34°30'17"/111°02'06"			A&Ww		FBC			FC		AgL
LC	Sponseller Lake	34°14'09"/109°50'45"	Igneous	A&Wc			FBC			FC		AgL
LC	St Johns Reservoir (Little Reservoir)	34°29'10"/109°22'06"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	Telephone Lake (EDW)	34°17'35"/110°02'42"	EDW			A&Wedw		PBC				
LC	Tremaine Lake	34°46'02"/111°13'51"	Igneous	A&Wc			FBC			FC		AgL
LC	Tunnel Reservoir	34°01'53"/109°26'34"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Turkey Draw (EDW)	High Country Pines II WWTP outfall at 33°25'35"/110°38'13" to confluence with Black Canyon Creek				A&Wedw		PBC				
LC	Unnamed Wash (EDW)	Bison Ranch WWTP outfall at 34°23'31"/110°31'29" to Pierce Seep				A&Wedw		PBC				
LC	Unnamed Wash (EDW)	Black Mesa Ranger Station WWTP outfall at 34°23'35"/110°33'36" to confluence of Oklahoma Flat Draw				A&Wedw		PBC				
LC	Vail Lake	35°05'23"/111°30'46"	Igneous	A&Wc			FBC			FC		AgL
LC	Walnut Creek	Headwaters to confluence with Billy Creek		A&Wc			FBC			FC		AgL
LC	Water Canyon Creek	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC		AgL
LC	Water Canyon Reservoir	34°00'16"/109°20'05"	Igneous		A&Ww		FBC			FC	AgI	AgL
LC	Whale Lake (EDW)	35°11'13"/111°35'21"	EDW			A&Wedw		PBC				
LC	Whipple Lake	34°16'49"/109°58'29"	Igneous		A&Ww		FBC			FC		AgL
LC	White Mountain Lake	34°21'57"/109°59'21"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	White Mountain Reservoir	34°00'12"/109°30'39"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Willow Creek	Headwaters to confluence with Clear Creek		A&Wc			FBC			FC		AgL
LC	Willow Springs Canyon Creek	Headwaters to confluence with Chevelon Creek		A&Wc			FBC			FC		AgL
LC	Willow Springs Lake	34°18'13"/110°52'16"	Sedimentary	A&Wc			FBC			FC	AgI	AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
LC	Woodland Reservoir	34°07'35"/109°57'01"	Igneous	A&Wc			FBC			FC	AgI	AgL
LC	Woods Canyon Creek	Headwaters to confluence with Chevelon Creek		A&Wc			FBC			FC		AgL
LC	Woods Canyon Lake	34°20'09"/110°56'45"	Sedimentary	A&Wc			FBC			FC	AgI	AgL
LC	Zuni River	Headwaters to confluence with the Little Colorado River		A&Wc			FBC			FC	AgI	AgL
MG	Agua Fria River	Headwaters to confluence with unnamed tributary at 34°35'14"/112°16'18"				A&We			PBC			AgL
MG	Agua Fria River (EDW)	Below confluence with unnamed tributary to State Route 169					A&Wedw		PBC			AgL
MG	Agua Fria River	From State Route 169 to Lake Pleasant				A&Ww		FBC		DWS	FC	AgI
MG	Agua Fria River	Below Lake Pleasant to the City of El Mirage WWTP at ' 33°34'20"/112°18'32"				A&We			PBC			AgL
MG	Agua Fria River (EDW)	From City of El Mirage WWTP outfall to 2 km downstream					A&Wedw		PBC			
MG	Agua Fria River	Below 2 km downstream of the City of El Mirage WWTP to City of Avondale WWTP outfall at 33°23'55"/112°21'16"				A&We			PBC			
MG	Agua Fria River	From City of Avondale WWTP outfall to confluence with Gila River					A&Wedw		PBC			
MG	Alvord Park Lake	35th Avenue & Baseline Road, Phoenix at 33°22'23"/112°08'20"	Urban			A&Ww			PBC		FC	
MG	Andorra Wash	Headwaters to confluence with Cave Creek Wash					A&We		PBC			
MG	Antelope Creek	Headwaters to confluence with Martinez Creek				A&Ww		FBC			FC	AgL
MG	Arlington Canal	From Gila River at 33°20'54"/112°35'39" to Gila River at 33°13'44"/112°46'15"										AgL
MG	Ash Creek	Headwaters to confluence with Tex Canyon				A&Wc		FBC			FC	AgI
MG	Ash Creek	Below confluence with Tex Canyon to confluence with Agua Fria River					A&Ww	FBC			FC	AgI
MG	Beehive Tank	32°52'37"/111°02'20"					A&Ww	FBC			FC	AgL
MG	Big Bug Creek	Headwaters to confluence with Eugene Gulch				A&Wc		FBC			FC	AgI
MG	Big Bug Creek	Below confluence with Eugene Gulch to confluence with Agua Fria River					A&Ww	FBC			FC	AgI
MG	Black Canyon Creek	Headwaters to confluence with the Agua Fria River					A&Ww	FBC			FC	AgL
MG	Blind Indian Creek	Headwaters to confluence with the Hassayampa River					A&Ww	FBC			FC	AgL
MG	Bonsall Park Lake	59th Avenue & Bethany Home Road, Phoenix at 33°31'24"/112°11'08"	Urban				A&Ww		PBC		FC	
MG	Canal Park Lake	College Avenue & Curry Road, Tempe at 33°26'54"/111°56'19"	Urban				A&Ww		PBC		FC	
MG	Cave Creek	Headwaters to the Cave Creek Dam					A&Ww	FBC			FC	AgL
MG	Cave Creek	Cave Creek Dam to the Arizona Canal					A&We		PBC			
MG	Centennial Wash	Headwaters to confluence with the Gila River at 33°16'32"/112°48'08"					A&We		PBC			AgL
MG	Centennial Wash Ponds	33°54'52"/113°23'47"					A&Ww	FBC			FC	AgL
MG	Chaparral Park Lake	Hayden Road & Chaparral Road, Scottsdale at 33°30'40"/111°54'27"	Urban				A&Ww		PBC		FC	AgI
MG	Cortez Park Lake	35th Avenue & Dunlap, Glendale at 33°34'13"/112°07'52"	Urban				A&Ww		PBC		FC	AgI
MG	Desert Breeze Lake	Galaxy Drive, West Chandler at 33°18'47"/111°55'10"	Urban				A&Ww		PBC		FC	
MG	Devils Canyon	Headwaters to confluence with Mineral Creek					A&Ww		FBC		FC	AgL
MG	Dobson Lake	Dobson Road & Los Lagos Vista Avenue, Mesa at 33°22'48"/111°52'35"	Urban				A&Ww		PBC		FC	
MG	East Maricopa Floodway	From Brown and Greenfield Rds to the Gila River Indian Reservation Boundary					A&We		PBS			AgL
MG	Eldorado Park Lake	Miller Road & Oak Street, Tempe at 33°28'25"/111°54'53"	Urban				A&Ww		PBC		FC	
MG	Encanto Park Lake	15th Avenue & Encanto Blvd., Phoenix at 33°28'28"/112°05'18"	Urban				A&Ww		PBC		FC	AgI
MG	Fain Lake	Town of Prescott Valley Park Lake 34°34'29"/112°21'06"	Urban				A&Ww		PBC		FC	
MG	French Gulch	Headwaters to confluence with Hassayampa River					A&Ww		PBC			AgL
MG	Galena Gulch	Headwaters to confluence with the Agua Fria River					A&We		PBC			AgL
MG	Galloway Wash (EDW)	Town of Cave Creek WWTP outfall at 33°50'15"/111°57'35" to confluence with Cave Creek						A&Wedw	PBC			

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
MG	Gila River	San Carlos Indian Reservation boundary to the Ashurst-Hayden Dam		A&Ww			FBC		FC	AgI	AgL	
MG	Gila River	Ashurst-Hayden Dam to the Town of Florence WWTP outfall at 33°02'20"/111°24'19"		A&We			PBC				AgL	
MG	Gila River (EDW)	Town of Florence WWTP outfall to Felix Road				A&Wedw	PBC					
MG	Gila River	Felix Road to the Gila River Indian Reservation boundary		A&We			PBC				AgL	
MG	Gila River (EDW)	From the confluence with the Salt River to Gillespie Dam				A&Wedw	PBC		FC	AgI	AgL	
MG	Gila River	Gillespie Dam to confluence with Painted Rock Dam		A&Ww			FBC		FC	AgI	AgL	
MG	Granada Park Lake	6505 North 20th Street, Phoenix at 33°31'56"/112°02'16"	Urban	A&Ww			PBC		FC			
MG	Groom Creek	Headwaters to confluence with the Hassayampa River		A&Wc			FBC		DWS	FC	AgL	
MG	Lower Lake Pleasant	33°50'32"/112°16'03"		A&Ww			FBC		FC	AgI	AgL	
MG	Hassayampa Lake	34°25'45"/112°25'33"	Igneous	A&Wc			FBC		DWS	FC		
MG	Hassayampa River	Headwaters to confluence with unnamed tributary at 34°26'09"/112°30'32"		A&Wc			FBC		FC	AgI	AgL	
MG	Hassayampa River	Below confluence with unnamed tributary to confluence with unnamed tributary at 33°51'52"/112°39'56"		A&Ww			FBC		FC	AgI	AgL	
MG	Hassayampa River	Below unnamed tributary to the Buckeye Irrigation Company Canal		A&We			PBC				AgL	
MG	Hassayampa River	Below Buckeye Irrigation Company canal to the Gila River		A&Ww			FBC		FC		AgL	
MG	Horsethief Lake	34°09'42"/112°17'57"	Igneous	A&Wc			FBC		DWS	FC	AgL	
MG	Indian Bend Wash	Headwaters to confluence with the Salt River				A&We	PBC					
MG	Indian Bend Wash Lakes	Scottsdale at 33°30'32"/111°54'24"	Urban	A&Ww			PBC		FC			
MG	Indian School Park Lake	Indian School Road & Hayden Road, Scottsdale at 33°29'39"/111°54'37"	Urban	A&Ww			PBC		FC			
MG	Kiwanis Park Lake	6000 South Mill Avenue, Tempe at 33°22'27"/111°56'22"	Urban	A&Ww			PBC		FC	AgI		
MG	Lake Pleasant	33°53'46"/112°16'29"	Deep	A&Ww			FBC		DWS	FC	AgI	
MG	The Lake Tank	32°54'14"/111°04'15"		A&Ww			FBC		FC		AgL	
MG	Lion Canyon	Headwaters to confluence with Weaver Creek		A&Ww			FBC		FC		AgL	
MG	Little Ash Creek	Headwaters to confluence with Ash Creek at		A&Ww			FBC		FC		AgL	
MG	Lynx Creek	Headwaters to confluence with unnamed tributary at 34°34'29"/112°21'07"		A&Wc			FBC		FC		AgL	
MG	Lynx Creek	Below confluence with unnamed tributary to confluence with Agua Fria River		A&Ww			FBC		FC		AgL	
MG	Lynx Lake	34°31'07"/112°23'07"	Deep	A&Wc			FBC		DWS	FC	AgI	
MG	Maricopa Park Lake	33°35'28"/112°18'15"	Urban	A&Ww			PBC		FC			
MG	Martinez Canyon	Headwaters to confluence with Box Canyon		A&Ww			FBC		FC		AgL	
MG	Martinez Creek	Headwaters to confluence with the Hassayampa River		A&Ww			FBC		FC	AgI	AgL	
MG	McKellips Park Lake	Miller Road & McKellips Road, Scottsdale at 33°27'14"/111°54'49"	Urban	A&Ww			PBC		FC	AgI		
MG	McMicken Wash (EDW)	City of Peoria Jomax WWTP outfall at 33°43'31"/112°20'15" to confluence with Agua Fria River				A&Wedw	PBC					
MG	Mineral Creek	Headwaters to 33°12'34"/110°59'58"		A&Ww			FBC		FC		AgL	
MG	Mineral Creek (diversion tunnel and lined channel)	33°12'24"/110°59'58" to 33°07'56"/110°58'34"					PBC					
MG	Mineral Creek	End of diversion channel to confluence with Gila River		A&Ww			FBC		FC		AgL	
MG	Minnehaha Creek	Headwaters to confluence with the Hassayampa River		A&Ww			FBC		FC		AgL	
MG	Mountain Valley Park Ponds (EDW)	Town of Prescott Valley WWTP outfall 002 at 34°36'07"/112°18'48" to Navajo Wash	EDW			A&Wedw	PBC					
MG	New River	Headwaters to Interstate 17		A&Ww			FBC		FC	AgI	AgL	
MG	New River	Below Interstate 17 to confluence with Agua Fria River				A&We	PBC				AgL	
MG	Painted Rock Reservoir	33°04'23"/113°00'38"	Sedimentary	A&Ww			FBC		FC	AgI	AgL	
MG	Papago Park Ponds	Galvin Parkway, Phoenix at 33°27'15"/111°56'45"	Urban	A&Ww			PBC		FC			
MG	Papago Park South Pond	Curry Road, Tempe 33°26'22"/111°55'55"	Urban	A&Ww			PBC		FC			
MG	Perry Mesa Tank	34°11'03"/112°02'01"		A&Ww			FBC		FC		AgL	
MG	Phoenix Area Canals	Granite Reef Dam to all municipal WTP intakes							DWS	AgI	AgL	
MG	Phoenix Area Canals	Below municipal WTP intakes and all other locations								AgI	AgL	

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
MG	Picacho Reservoir	32°51'10"/111°28'25"	Shallow		A&Ww			FBC			FC	AgI	AgL
MG	Poland Creek	Headwaters to confluence with Lorena Gulch			A&Wc			FBC			FC		AgL
MG	Poland Creek	Below confluence with Lorena Gulch to confluence with Black Canyon Creek			A&Ww			FBC			FC		AgL
MG	Queen Creek	Headwaters to the Town of Superior WWTP outfall at 33°16'33"/111°07'44"			A&Ww				PBC				AgL
MG	Queen Creek (EDW)	Below Town of Superior WWTP outfall to confluence with Potts Canyon					A&Wedw		PBC				
MG	Queen Creek	Below Potts Canyon to ' Whitlow Dam			A&Ww			FBC			FC		AgL
MG	Queen Creek	Below Whitlow Dam to confluence with Gila River				A&We			PBC				
MG	Riverview Park Lake	Dobson Road & 8th Street, Mesa at 33°25'50"/111°52'29"	Urban		A&Ww				PBC		FC		
MG	Roadrunner Park Lake	36th Street & Cactus, Phoenix at 33°35'56"/112°00'21"	Urban		A&Ww				PBC		FC		
MG	Salt River	Verde River to 2 km below Granite Reef Dam			A&Ww			FBC		DWS	FC	AgI	AgL
MG	Salt River	2 km below Granite Reef Dam to City of Mesa NW WRF outfall at 33°26'22"/111°53'14"				A&We			PBC				
MG	Salt River (EDW)	City of Mesa NW WRF outfall to Tempe Town Lake					A&Wedw		PBC				
MG	Salt River	Below Tempe Town Lake to Interstate 10 bridge				A&We			PBC				
MG	Salt River	Below Interstate 10 bridge to the City of Phoenix 23rd Avenue WWTP outfall at . 33°24'44"/112°07'59"			A&Ww				PBC		FC		
MG	Salt River (EDW)	From City of Phoenix 23rd Avenue WWTP outfall to confluence with Gila River					A&Wedw		PBC		FC	AgI	AgL
MG	Siphon Draw (EDW)	Superstition Mountains CFD WWTP outfall at 33°21'40"/111°33'30" to 6 km downstream					A&Wedw		PBC				
MG	Sycamore Creek	Headwaters to confluence with Tank Canyon			A&Wc			FBC			FC		AgL
MG	Sycamore Creek	Below confluence with Tank Canyon to confluence with Agua Fria River			A&Ww			FBC			FC		AgL
MG	Tempe Town Lake	At Mill Avenue Bridge at 33°26'00"/111°56'26"	Urban		A&Ww			FBC			FC		
MG	Tule Creek	Headwaters to confluence with the Agua Fria River			A&Ww			FBC			FC		AgL
MG	Turkey Creek	Headwaters to confluence with unnamed tributary at 34°19'28"/112°21'33"			A&Wc			FBC			FC	AgI	AgL
MG	Turkey Creek	Below confluence with unnamed tributary to confluence with Poland Creek			A&Ww			FBC			FC	AgI	AgL
MG	Unnamed Wash (EDW)	Gila Bend WWTP outfall to confluence with the Gila River					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Luke Air Force Base WWTP outfall at 33°32'00"/112°19'03" to confluence with the Agua Fria River					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	North Florence WWTP outfall at 33°03'50"/111°23'13" to confluence with Gila River					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Town of Prescott Valley WWTP outfall at 34°35'16"/112°16'18" to confluence with the Agua Fria River					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Town of Cave Creek WRF outfall at 33°48'02"/111°59'22" to confluence with Cave Creek					A&Wedw		PBC				
MG	Wagner Wash (EDW)	City of Buckeye Festival Ranch WRF outfall at 33°39'14"/112°40'18" to 2 km downstream					A&Wedw		PBC				
MG	Vista Del Camino Park North	7700 East Roosevelt Street, Scottsdale at 33°27'33"/111°54'52"	Urban		A&Ww				PBC		FC		
MG	Walnut Canyon Creek	Headwaters to confluence with the Gila River			A&Ww			FBC			FC		AgL
MG	Weaver Creek	Headwaters to confluence with Antelope Creek			A&Ww			FBC			FC		AgL
MG	White Canyon Creek	Headwaters to confluence with Walnut Canyon Creek			A&Ww			FBC			FC		AgL
SC	Agua Caliente Lake	12325 East Roger Road, Tucson 32°16'51"/110°43'52"	Urban		A&Ww				PBC		FC		
SC	Agua Caliente Wash	Headwaters to confluence with Soldier Trail			A&Ww			FBC			FC		AgL
SC	Agua Caliente Wash	Below Soldier Trail to confluence with Tanque Verde Creek				A&We			PBC				AgL
SC	Aguirre Wash	From the Tohono O'odham Indian Reservation boundary to 32°28'38"/111°46'51"				A&We			PBC				
SC	Alambre Wash	Headwaters to confluence with Brawley Wash				A&We			PBC				
SC	Alamo Wash	Headwaters to confluence with Rillito Creek				A&We			PBC				
SC	Altar Wash	Headwaters to confluence with Brawley Wash				A&We			PBC				
SC	Alum Gulch	Headwaters to 31°28'20"/110°43'51"				A&We			PBC				AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SC	Alum Gulch	From 31°28'20"/110°43'51" to 31°29'17"/110°44'25"			A&Ww			FBC		FC	AgL
SC	Alum Gulch	Below 31°29'17"/110°44'25" to confluence with Sonoita Creek			A&We			PBC			AgL
SC	Arivaca Creek	Headwaters to confluence with Altar Wash			A&Ww			FBC		FC	AgL
SC	Arivaca Lake	31°31'52"/111°15'06"	Igneous		A&Ww			FBC		FC	AgL
SC	Atterbury Wash	Headwaters to confluence with Pantano Wash			A&We			PBC			AgL
SC	Bear Grass Tank	31°33'01"/111°11'03"			A&Ww			FBC		FC	AgL
SC	Big Wash	Headwaters to confluence with Cañada del Oro			A&We			PBC			
SC	Black Wash (EDW)	Pima County WWM D Avra Valley WWTP outfall at 32°09'58"/111°11'17" to confluence with Brawley Wash				A&Wedw		PBC			
SC	Bog Hole Tank	31°28'36"/110°37'09"			A&Ww			FBC		FC	AgL
SC	Brawley Wash	Headwaters to confluence with Los Robles Wash			A&We			PBC			AgL
SC	California Gulch	Headwaters To U.S./Mexico border			A&Ww			FBC		FC	AgL
SC	Cañada del Oro	Headwaters to State Route 77			A&Ww			FBC		FC	AgL
SC	Cañada del Oro	Below State Route 77 to confluence with the Santa Cruz River			A&We			PBC			AgL
SC	Cienega Creek	Headwaters to confluence with Gardner Canyon			A&Ww			FBC		FC	AgL
SC	Cienega Creek (OAW)	From confluence with Gardner Canyon to USGS gaging station (#09484600)			A&Ww			FBC		FC	AgL
SC	Davidson Canyon	Headwaters to unnamed spring at 31°59'00"/110°38'49"			A&We			PBC			AgL
SC	Davidson Canyon (OAW)	From unnamed Spring to confluence with unnamed tributary at 31°59'09"/110°38'44"			A&Ww			FBC		FC	AgL
SC	Davidson Canyon (OAW)	Below confluence with unnamed tributary to unnamed spring at 32°00'40"/110°38'36"			A&We			PBC			AgL
SC	Davidson Canyon (OAW)	From unnamed spring to confluence with Cienega Creek			A&Ww			FBC		FC	AgL
SC	Empire Gulch	Headwaters to unnamed spring at 31°47'18"/110°38'17"			A&We			PBC			
SC	Empire Gulch	From 31°47'18"/110°38'17" to 31°47'03"/110°37'35"			A&Ww			FBC		FC	
SC	Empire Gulch	From 31°47'03"/110°37'35" to 31°47'05"/110°36'58"			A&We			PBC			AgL
SC	Empire Gulch	From 31°47'05"/110°36'58" to confluence with Cienega Creek			A&Ww			FBC		FC	
SC	Flux Canyon	Headwaters to confluence with Alum Canyon			A&We			PBC			AgL
SC	Gardner Canyon Creek	Headwaters to confluence with Sawmill Canyon		A&Wc				FBC		FC	
SC	Gardner Canyon Creek	Below Sawmill Canyon to confluence with Cienega Creek			A&Ww			FBC		FC	
SC	Greene Wash	Greene Reservoir at 32°37'09"/111°41'12" to the Tohono O'odham Indian Reservation boundary			A&We			PBC			
SC	Greene Wash	Tohono O'odham Indian Reservation boundary to confluence with Santa Rosa Wash at 32°53'52"/111°56'48"			A&We			PBC			
SC	Harshaw Creek	Headwaters to confluence with Sonoita Creek at			A&We			PBC			AgL
SC	Hit Tank	32°43'57"/111°03'18"			A&Ww			FBC		FC	AgL
SC	Holden Canyon Creek	Headwaters to U.S./Mexico border			A&Ww			FBC		FC	
SC	Huachuca Tank	31°21'11"/110°30'18"			A&Ww			FBC		FC	AgL
SC	Julian Wash	Headwaters to confluence with the Santa Cruz River			A&We			PBC			
SC	Kennedy Lake	Mission Road & Ajo Road, Tucson at 32°10'49"/111°00'27"	Urban		A&Ww			PBC		FC	
SC	Lakeside Lake	8300 East Stella Road, Tucson at 32°11'11"/110°49'00"	Urban		A&Ww			PBC		FC	
SC	Lemmon Canyon Creek	Headwaters to confluence with unnamed tributary at 32°23'48"/110°47'49"		A&Wc				FBC		FC	
SC	Lemmon Canyon Creek	Below unnamed tributary to confluence with Sabino Canyon Creek			A&Ww			FBC		FC	
SC	Los Robles Wash	Headwaters to confluence with the Santa Cruz River			A&We			PBC			
SC	Madera Canyon Creek	Headwaters to confluence with unnamed tributary at 31°43'42"/110°52'51"		A&Wc				FBC		FC	AgL
SC	Madera Canyon Creek	Below unnamed tributary to confluence with the Santa Cruz River			A&Ww			FBC		FC	AgL
SC	Mattie Canyon	Headwaters to confluence with Cienega Creek "			A&Ww			FBC		FC	AgL
SC	Nogales Wash	Headwaters to confluence with Potrero Creek			A&Ww			PBC		FC	
SC	Oak Tree Canyon	Headwaters to confluence with Cienega Creek			A&We			PBC			

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
SC	Palisade Canyon Creek	Headwaters to confluence with unnamed tributary at 32°21'59"/110°46'16"		A&Wc			FBC			FC		
SC	Palisade Canyon Creek	Below unnamed tributary to confluence with Sabino Canyon Creek			A&Ww		FBC			FC		
SC	Pantano Wash	Headwaters to confluence with Tanque Verde Creek				A&We		PBC				
SC	Parker Canyon Creek	Headwaters to confluence with unnamed tributary at 31°24'17"/110°28'47"		A&Wc			FBC			FC		
SC	Parker Canyon Creek	Below unnamed tributary to U.S./Mexico border			A&Ww		FBC			FC		
SC	Parker Canyon Lake	31°25'35"/110°27'15"	Deep	A&Wc			FBC			FC	AgI	AgL
SC	Patagonia Lake	31°29'56"/110°50'49"	Deep		A&Ww		FBC			FC	AgI	AgL
SC	Peña Blanca Lake	31°24'15"/111°05'12"	Igneous		A&Ww		FBC			FC	AgI	AgL
SC	Potrero Creek	Headwaters to Interstate 19				A&We		PBC				AgL
SC	Potrero Creek	Below Interstate 19 to confluence with Santa Cruz River			A&Ww		FBC			FC		AgL
SC	Puertocito Wash	Headwaters to confluence with Altar Wash				A&We		PBC				
SC	Quitobaquito Spring	(Pond and Springs) 31°56'39"/113°01'06"			A&Ww		FBC			FC		AgL
SC	Redrock Canyon Creek	Headwaters to confluence with Harshaw Creek			A&Ww		FBC			FC		
SC	Rillito Creek	Headwaters to confluence with the Santa Cruz River				A&We		PBC				AgL
SC	Romero Canyon Creek	Headwaters to confluence with unnamed tributary at 32°24'29"/110°50'39"		A&Wc			FBC			FC		
SC	Romero Canyon Creek	Below unnamed tributary to confluence with Sutherland Wash			A&Ww		FBC			FC		
SC	Rose Canyon Creek	Headwaters to Rose Canyon Lake		A&Wc			FBC			FC		
SC	Rose Canyon Lake	32°23'13"/110°42'38"	Igneous	A&Wc			FBC			FC		AgL
SC	Ruby Lakes	31°26'29"/111°14'22"	Igneous		A&Ww		FBC			FC		AgL
SC	Sabino Canyon Creek	Headwaters to confluence with unnamed tributary at 32°23'28"/110°47'03"		A&Wc			FBC		DWS	FC	AgI	
SC	Sabino Canyon Creek	Below unnamed tributary to confluence with Tanque Verde River			A&Ww		FBC		DWS	FC	AgI	
SC	Salero Ranch Tank	31°35'43"/110°53'25"			A&Ww		FBC			FC		AgL
SC	Santa Cruz River	Headwaters to the at U.S./Mexico border			A&Ww		FBC			FC	AgI	AgL
SC	Santa Cruz River	U.S./Mexico border to the Nogales International WWTP outfall at 31°27'25"/110°58'04"			A&Ww		FBC		DWS	FC	AgI	AgL
SC	Santa Cruz River (EDW)	Nogales International WWTP outfall to the Tubac Bridge				A&Wedw		PBC				AgL
SC	Santa Cruz River	Tubac Bridge to Agua Nueva WRF outfall at 32°17'04"/111°01'45"			A&We			PBC				AgL
SC	Santa Cruz River (EDW)	Agua Nueva WRF outfall to Baumgartner Road				A&Wedw		PBC				
SC	Santa Cruz River, West Branch	Headwaters to the confluence with Santa Cruz River			A&We			PBC				AgL
SC	Santa Cruz Wash	Baumgartner Road to the Ak Chin Indian Reservation boundary			A&We			PBC				AgL
SC	Santa Cruz Wash, North Branch	Headwaters to City of Casa Grande WRF outfall at 32°54'57"/111°47'13"			A&We			PBC				
SC	Santa Cruz Wash, North Branch (EDW)	City of Casa Grande WRF outfall to 1 km downstream				A&Wedw		PBC				
SC	Santa Rosa Wash	Below Tohono O'odham Indian Reservation to the Ak Chin Indian Reservation			A&We			PBC				
SC	Santa Rosa Wash (EDW)	Palo Verde Utilities WWTP outfall at 33°04'20"/112°01'47" to the Gila River Indian Reservation				A&Wedw		PBC				
SC	Soldier Lake	32°25'34"/110°44'43"		A&Wc			FBC			FC		AgL
SC	Sonoita Creek	Headwaters to the Town of Patagonia WWTP outfall at 31°32'25"/110°45'31"				A&We		PBC				AgL
SC	Sonoita Creek (EDW)	Town of Patagonia WWTP outfall to permanent groundwater upwelling point approximately 1600 feet downstream of outfall				A&Wedw		PBC				AgL
SC	Sonoita Creek	Below groundwater upwelling point to confluence with the Santa Cruz River			A&Ww		FBC			FC	AgI	AgL
SC	Split Tank	31°28'11"/111°05'12"			A&Ww		FBC			FC		AgL
SC	Sutherland Wash	Headwaters to confluence with Cañada del Oro			A&Ww		FBC			FC		
SC	Sycamore Canyon	Headwaters to 32°21'60" / 110°44'48"		A&Wc			FBC			FC		
SC	Sycamore Canyon	From 32°21'60" / 110°44'48" to Sycamore Reservoir			A&Ww		FBC			FC		

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife				Human Health			Agricultural		
SC	Sycamore Canyon Creek	Headwaters to the U.S./Mexico border			A&Ww			FBC			FC		AgL
SC	Sycamore Reservoir	32°20'57"/110°47'38"		A&Wc				FBC			FC		AgL
SC	Tanque Verde Creek	Headwaters to Houghton Road			A&Ww			FBC			FC		AgL
SC	Tanque Verde Creek	Below Houghton Road to confluence with Rillito Creek				A&We			PBC				AgL
SC	Three R Canyon	Headwaters to 31°28'26"/110°46'04"				A&We			PBC				AgL
SC	Three R Canyon	From 31°28'26"/110°46'04" to 31°28'28"/110°47'15"			A&Ww			FBC			FC		AgL
SC	Three R Canyon	From 31°28'28"/110°47'15" to confluence with Sonoita Creek				A&We			PBC				AgL
SC	Tinaja Wash	Headwaters to confluence with the Santa Cruz River				A&We			PBC				AgL
SC	Unnamed Wash (EDW)	Oracle Sanitary District WWTP outfall at 32°36'54"/110°48'02" to 5 km downstream					A&Wedw		PBC				
SC	Unnamed Wash (EDW)	Arizona City Sanitary District WWTP outfall at 32°45'43"/111°44'24" to confluence with Santa Cruz Wash					A&Wedw		PBC				
SC	Unnamed Wash (EDW)	Saddlebrook WWTP outfall at 32°32'00"/110°53'01" to confluence with Cañada del Oro					A&Wedw		PBC				
SC	Vekol Wash	Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations				A&We			PBC				
SC	Wakefield Canyon	Headwaters to confluence with unnamed tributary at 31°52'48"/110°26'27"		A&Wc				FBC			FC		AgL
SC	Wakefield Canyon	Below confluence with unnamed tributary to confluence with Cienega Creek			A&Ww			FBC			FC		AgL
SC	Wild Burro Canyon	Headwaters to confluence with unnamed tributary at 32°27'43"/111°05'47"			A&Ww			FBC			FC		AgL
SC	Wild Burro Canyon	Below confluence with unnamed tributary to confluence with Santa Cruz River				A&We			PBC				AgL
SC	Williams Ranch Tanks	31°55'14"/110°25'31"			A&Ww			FBC			FC		AgL
SP	Abbot Canyon	Headwaters to confluence with Whitewater Draw			A&Ww			FBC			FC		AgL
SP	Aravaipa Creek	Headwaters to confluence with Stowe Gulch			A&Ww			FBC			FC		AgL
SP	Aravaipa Creek (OAW)	Stowe Gulch to downstream boundary of Aravaipa Canyon Wilderness Area			A&Ww			FBC			FC		AgL
SP	Aravaipa Creek	Below downstream boundary of Aravaipa Canyon Wilderness Area to confluence with the San Pedro River			A&Ww			FBC			FC		AgL
SP	Ash Creek	Headwaters to 31°50'28"/109°40'04"			A&Ww			FBC			FC	AgI	AgL
SP	Babocomari River	Headwaters to confluence with the San Pedro River			A&Ww			FBC			FC		AgL
SP	Bass Canyon Creek	Headwaters to confluence with unnamed tributary at 32°26'06"/110°13'22"		A&Wc				FBC			FC		AgL
SP	Bass Canyon Creek	Below confluence with unnamed tributary to confluence with Hot Springs Canyon Creek			A&Ww			FBC			FC		AgL
SP	Bass Canyon Tank	32°24'00"/110°13'00"			A&Ww			FBC			FC		AgL
SP	Bear Creek	Headwaters to U.S./Mexico border			A&Ww			FBC			FC		AgL
SP	Big Creek	Headwaters to confluence with Pitchfork Canyon		A&Wc				FBC			FC		AgL
SP	Blacktail Pond	Fort Huachuca Military Reservation at 31°24'13"/110°17'23"			A&Ww			FBC			FC		
SP	Blackwater Draw	Headwaters to the U.S./Mexico border			A&Ww			FBC			FC		AgL
SP	Booger Canyon Creek	Headwaters to confluence with Aravaipa Creek			A&Ww			FBC			FC		AgL
SP	Buck Canyon	Headwaters to confluence with Buck Creek Tank			A&Ww			FBC			FC		AgL
SP	Buck Canyon	Below Buck Creek Tank to confluence with Dry Creek				A&We			PBC				AgL
SP	Buehman Canyon Creek (OAW)	Headwaters to confluence with unnamed tributary at 32°24'54"/110°32'10"			A&Ww			FBC			FC		AgL
SP	Buehman Canyon Creek	Below confluence with unnamed tributary to confluence with San Pedro River			A&Ww			FBC			FC		AgL
SP	Bull Tank	32°31'13"/110°12'52"			A&Ww			FBC			FC		AgL
SP	Bullock Canyon	Headwaters to confluence with Buehman Canyon			A&Ww			FBC			FC		AgL
SP	Carr Canyon Creek	Headwaters to confluence with unnamed tributary at 31°27'01"/110°15'48"		A&Wc				FBC			FC		AgL
SP	Carr Canyon Creek	Below confluence with unnamed tributary to confluence with the San Pedro River			A&Ww			FBC			FC		AgL
SP	Copper Creek	Headwaters to confluence with Prospect Canyon			A&Ww			FBC			FC		AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
						A&We		PBC		FC	AgL
SP	Copper Creek	Below confluence with Prospect Canyon to confluence with the San Pedro River				A&We		PBC			AgL
SP	Deer Creek	Headwaters to confluence with unnamed tributary at 32°59'57"/110°20'11"		A&Wc			FBC			FC	AgL
SP	Deer Creek	Below confluence with unnamed tributary to confluence with Aravaipa Creek			A&Ww		FBC			FC	AgL
SP	Dixie Canyon	Headwaters to confluence with Mexican Canyon			A&Ww		FBC			FC	AgL
SP	Double R Canyon Creek	Headwaters to confluence with Bass Canyon			A&Ww		FBC			FC	
SP	Dry Canyon	Headwaters to confluence with Abbot Canyon			A&Ww		FBC			FC	AgL
SP	East Gravel Pit Pond	Fort Huachuca Military Reservation at 31°30'54"/110°19'44"	Sedimentary		A&Ww		FBC			FC	
SP	Espiritu Canyon Creek	Headwaters to confluence with Soza Wash			A&Ww		FBC			FC	AgL
SP	Fly Pond	Fort Huachuca Military Reservation at 31°32'53"/110°21'16"			A&Ww		FBC			FC	
SP	Fourmile Canyon Creek	Headwaters to confluence with Aravaipa Creek			A&Ww		FBC			FC	AgL
SP	Fourmile Canyon, Left Prong	Headwaters to confluence with unnamed tributary at 32°43'15"/110°23'46"		A&Wc			FBC			FC	AgL
SP	Fourmile Canyon, Left Prong	Below confluence with unnamed tributary to confluence with Fourmile Canyon Creek			A&Ww		FBC			FC	AgL
SP	Fourmile Canyon, Right Prong	Headwaters to confluence with Fourmile Canyon			A&Ww		FBC			FC	AgL
SP	Gadwell Canyon	Headwaters to confluence with Whitewater Draw			A&Ww		FBC			FC	AgL
SP	Garden Canyon Creek	Headwaters to confluence with unnamed tributary at 31°29'01"/110°19'44"		A&Wc			FBC		DWS	FC	AgL
SP	Garden Canyon Creek	Below confluence with unnamed tributary to confluence with the San Pedro River			A&Ww		FBC		DWS	FC	AgL
SP	Glance Creek	Headwaters to confluence with Whitewater Draw			A&Ww		FBC			FC	AgL
SP	Gold Gulch	Headwaters to U.S./Mexico border			A&Ww		FBC			FC	AgL
SP	Golf Course Pond	Fort Huachuca Military Reservation at 31°32'14"/110°18'52"	Sedimentary		A&Ww			PBC		FC	
SP	Goudy Canyon Creek	Headwaters to confluence with Grant Creek		A&Wc			FBC			FC	AgL
SP	Grant Creek	Headwaters to confluence with unnamed tributary at 32°38'10"/109°56'37"		A&Wc			FBC		DWS	FC	AgL
SP	Grant Creek	Below confluence with unnamed tributary to terminus near Willcox Playa			A&Ww		FBC			FC	AgL
SP	Gravel Pit Pond	Fort Huachuca Military Reservation at 31°30'52"/110°19'49"	Sedimentary		A&Ww		FBC			FC	
SP	Greenbrush Draw	From U.S./Mexico border to confluence with San Pedro River			A&We			PBC			
SP	Hidden Pond	Fort Huachuca Military Reservation at 32°30'30"/109°22'17"			A&Ww		FBC			FC	
SP	High Creek	Headwaters to confluence with unnamed tributary at 32°33'08"/110°14'42"		A&Wc			FBC			FC	AgL
SP	High Creek	Below confluence with unnamed tributary to terminus near Willcox Playa			A&Ww		FBC			FC	AgL
SP	Horse Camp Canyon Creek	Headwaters to confluence with Aravaipa Creek			A&Ww		FBC			FC	AgL
SP	Hot Springs Canyon Creek	Headwaters to confluence with the San Pedro River			A&Ww		FBC			FC	AgL
SP	Johnson Canyon	Headwaters to Whitewater Draw at 31°32'46"/109°43'32"			A&Ww		FBC			FC	AgL
SP	Lake Cochise (EDW)	South of Twin Lakes Municipal Golf Course at 32°13'50"/109°49'27"	EDW			A&Wedw		PBC			
SP	Leslie Canyon Creek	Headwaters to confluence with Whitewater Draw			A&Ww		FBC			FC	AgL
SP	Lower Garden Canyon Pond	Fort Huachuca Military Reservation at 31°29'39"/110°18'34"			A&Ww		FBC			FC	
SP	Mexican Canyon	Headwaters to confluence with Dixie Canyon			A&Ww		FBC			FC	AgL
SP	Miller Canyon Creek	Headwaters to Broken Arrow Ranch Road at 31°25'35"/110°15'04"		A&Wc			FBC		DWS	FC	AgL
SP	Miller Canyon Creek	Below Broken Arrow Ranch Road to confluence with the San Pedro River			A&Ww		FBC		DWS	FC	AgL
SP	Moonshine Creek	Headwaters to confluence with Post Creek		A&Wc			FBC			FC	AgL
SP	Mule Gulch	Headwaters to the Lavender Pit at 31°26'11"/109°54'02"			A&Ww			PBC		FC	
SP	Mule Gulch	The Lavender Pit to the Highway 80 bridge at 31°26'30"/109°49'28"			A&We			PBC			
SP	Mule Gulch	Below the Highway 80 bridge to confluence with Whitewater Draw			A&We			PBC			AgL
SP	Oak Grove Canyon	Headwaters to confluence with Turkey Creek			A&Ww		FBC			FC	AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural	
SP	Officers Club Pond	Fort Huachuca Military Reservation at 31°32'51"/110°21'37"	Sedimentary		A&Ww			PBC		FC	
SP	Paige Canyon Creek	Headwaters to confluence with the San Pedro River			A&Ww			FBC		FC	AgL
SP	Parsons Canyon Creek	Headwaters to confluence with Aravaipa Creek			A&Ww			FBC		FC	AgL
SP	Pinery Creek	Headwaters to State Highway 181		A&Wc				FBC	DWS	FC	AgL
SP	Pinery Creek	Below State Highway 181 to terminus near Willcox Playa			A&Ww			FBC	DWS	FC	AgL
SP	Post Creek	Headwaters to confluence with Grant Creek		A&Wc				FBC		FC	AgL
SP	Ramsey Canyon Creek	Headwaters to Forest Service Road #110 at 31°27'44"/110°17'30"		A&Wc				FBC		FC	AgL
SP	Ramsey Canyon Creek	Below Forest Service Road #110 to confluence with Carr Wash			A&Ww			FBC		FC	AgL
SP	Rattlesnake Canyon	Headwaters to confluence with Brush Canyon		A&Wc				FBC		FC	AgL
SP	Rattlesnake Canyon	Below confluence with Brush Canyon to confluence with Aravaipa Creek			A&Ww			FBC		FC	AgL
SP	Redfield Canyon Creek	Headwaters to confluence with unnamed tributary at 32°33'40"/110°18'42"		A&Wc				FBC		FC	AgL
SP	Redfield Canyon Creek	Below confluence with unnamed tributary to confluence with the San Pedro River			A&Ww			FBC		FC	AgL
SP	Riggs Lake	32°42'28"/109°57'53"	Igneous	A&Wc				FBC		FC	AgL
SP	Rock Creek	Headwaters to confluence with Turkey Creek A/c						FBC		FC	AgL
SP	Rucker Canyon Creek	Headwaters to confluence with Whitewater Draw		A&Wc				FBC		FC	AgL
SP	Rucker Canyon Lake	31°46'46"/109°18'30"	Shallow	A&Wc				FBC		FC	AgL
SP	San Pedro River	U.S./ Mexico Border to Redington			A&Ww			FBC		FC	AgL
SP	San Pedro River	From Redington to confluence with the Gila River			A&Ww			FBC		FC	AgL
SP	Snow Flat Lake	32°39'10"/109°51'54"	Igneous	A&Wc				FBC		FC	AgL
SP	Soldier Creek	Headwaters to confluence with Post Creek at 32°40'50"/109°54'41"			A&Wc			FBC		FC	AgL
SP	Soto Canyon	Headwaters to confluence with Dixie Canyon			A&Ww			FBC		FC	AgL
SP	Swamp Springs Canyon Creek	Headwaters to confluence with Redfield Canyon			A&Ww			FBC		FC	AgL
SP	Sycamore Pond I	Fort Huachuca Military Reservation at 31°35'12"/110°26'11"	Sedimentary		A&Ww			FBC		FC	
SP	Sycamore Pond II	Fort Huachuca Military Reservation at 31°34'39"/110°26'10"	Sedimentary		A&Ww			FBC		FC	
SP	Turkey Creek	Headwaters to confluence with Aravaipa Creek			A&Ww			FBC		FC	AgL
SP	Turkey Creek	Headwaters to confluence with Rock Creek		A&Wc				FBC		FC	AgL
SP	Turkey Creek	Below confluence with Rock Creek to terminus near Willcox Playa			A&Ww			FBC		FC	AgL
SP	Unnamed Wash (EDW)	Mt. Lemmon WWTP outfall at 32°26'51"/110°45'08" to 0.25 km downstream				A&Wedw		PBC			
SP	Virgus Canyon Creek	Headwaters to confluence with Aravaipa Creek			A&Ww			FBC		FC	AgL
SP	Walnut Gulch	Headwaters to Tombstone WWTP outfall at 31°43'47"/110°04'06"			A&We			PBC			
SP	Walnut Gulch (EDW)	Tombstone WWTP outfall to the confluence with Tombstone Wash				A&Wedw		PBC			
SP	Walnut Gulch	Tombstone Wash to confluence with San Pedro River			A&We			PBC			
SP	Ward Canyon Creek	Headwaters to confluence with Turkey Creek		A&Wc				FBC		FC	AgL
SP	Whitewater Draw	Headwaters to confluence with unnamed tributary at 31°20'36"/109°43'48"				A&We		PBC			AgL
SP	Whitewater Draw	Below confluence with unnamed tributary to U.S./ Mexico border			A&Ww			FBC		FC	AgL
SP	Willcox Playa	From 32°08'19"/109°50'59" in the Sulphur Springs Valley	Sedimentary		A&Ww			FBC		FC	AgL
SP	Woodcutters Pond	Fort Huachuca Military Reservation at 31°30'09"/110°20'12"	Igneous		A&Ww			FBC		FC	
SR	Ackre Lake	33°37'01"/109°20'40"		A&Wc				FBC		FC	AgL
SR	Apache Lake	33°37'23"/111°12'26"	Deep		A&Ww			FBC	DWS	FC	AgL
SR	Barnhardt Creek	Headwaters to confluence with unnamed tributary at 34°05'37"/111°26'40"		A&Wc				FBC		FC	AgL
SR	Barnhardt Creek	Below confluence with unnamed tributary to confluence with Rye Creek			A&Ww			FBC		FC	AgL
SR	Basin Lake	33°55'00"/109°26'09"	Igneous		A&Ww			FBC		FC	AgL
SR	Bear Creek	Headwaters to confluence with the Black River		A&Wc				FBC		FC	AgL
SR	Bear Wallow Creek (OAW)	Headwaters to confluence with the Black River		A&Wc				FBC		FC	AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
SR	Bear Wallow Creek, North Fork (OAW)	Headwaters to confluence with Bear Wallow Creek		A&Wc			FBC			FC		AgL
SR	Bear Wallow Creek, South Fork (OAW)	Headwaters to confluence with Bear Wallow Creek		A&Wc			FBC			FC		AgL
SR	Beaver Creek	Headwaters to confluence with Black River		A&Wc			FBC			FC	AgI	AgL
SR	Big Lake	33°52'36"/109°25'33"	Igneous	A&Wc			FBC		DWS	FC	AgI	AgL
SR	Black River	Headwaters to confluence with Salt River		A&Wc			FBC		DWS	FC	AgI	AgL
SR	Black River, East Fork	From 33°51'19"/109°18'54" to confluence with the Black River		A&Wc			FBC		DWS	FC	AgI	AgL
SR	Black River, North Fork of East Fork	Headwaters to confluence with Black River, East Fork		A&Wc			FBC		DWS	FC	AgI	AgL
SR	Black River, West Fork	Headwaters to confluence with the Black River		A&Wc			FBC		DWS	FC	AgI	AgL
SR	Bloody Tanks Wash	Headwaters to Schultze Ranch Road				A&We			PBC			AgL
SR	Bloody Tanks Wash	Schultze Ranch Road to confluence with Miami Wash				A&We			PBC			
SR	Boggy Creek	Headwaters to confluence with Centerfire Creek		A&Wc			FBC			FC	AgI	AgL
SR	Boneyard Creek	Headwaters to confluence with Black River, East Fork		A&Wc			FBC			FC	AgI	AgL
SR	Boulder Creek	Headwaters to confluence with LaBarge Creek				A&Ww	FBC			FC		
SR	Campaign Creek	Headwaters to Roosevelt Lake				A&Ww	FBC			FC		AgL
SR	Canyon Creek	Headwaters to the White Mountain Apache Reservation boundary		A&Wc			FBC		DWS	FC	AgI	AgL
SR	Canyon Lake	33°32'44"/111°26'19"	Deep			A&Ww	FBC		DWS	FC	AgI	AgL
SR	Centerfire Creek	Headwaters to confluence with the Black River		A&Wc			FBC			FC	AgI	AgL
SR	Chambers Draw Creek	Headwaters to confluence with the North Fork of the East Fork of Black River		A&Wc			FBC			FC		AgL
SR	Cherry Creek	Headwaters to confluence with unnamed tributary at 34°05'09"/110°56'07"		A&Wc			FBC			FC	AgI	AgL
SR	Cherry Creek	Below unnamed tributary to confluence with the Salt River				A&Ww	FBC			FC	AgI	AgL
SR	Christopher Creek	Headwaters to confluence with Tonto Creek		A&Wc			FBC			FC	AgI	AgL
SR	Cold Spring Canyon Creek	Headwaters to confluence with unnamed tributary at 33°49'50"/110°52'58"		A&Wc			FBC			FC		AgL
SR	Cold Spring Canyon Creek	Below confluence with unnamed tributary to confluence with Cherry Creek				A&Ww	FBC			FC		AgL
SR	Conklin Creek	Headwaters to confluence with the Black River		A&Wc			FBC			FC	AgI	AgL
SR	Coon Creek	Headwaters to confluence with unnamed tributary at 33°46'41"/110°54'26"		A&Wc			FBC			FC		AgL
SR	Coon Creek	Below confluence with unnamed tributary to confluence with Salt River				A&Ww	FBC			FC		AgL
SR	Corduoy Creek	Headwaters to confluence with Fish Creek		A&Wc			FBC			FC	AgI	AgL
SR	Coyote Creek	Headwaters to confluence with the Black River, East Fork		A&Wc			FBC			FC	AgI	AgL
SR	Crescent Lake	33°54'38"/109°25'18"	Shallow	A&Wc			FBC			FC	AgI	AgL
SR	Deer Creek	Headwaters to confluence with the Black River, East Fork		A&Wc			FBC			FC		AgL
SR	Del Shay Creek	Headwaters to confluence with Gun Creek				A&Ww	FBC			FC		AgL
SR	Devils Chasm Creek	Headwaters to confluence with unnamed tributary at 33°48'46"/110°52'35"		A&Wc			FBC			FC		AgL
SR	Devils Chasm Creek	Below confluence with unnamed tributary to confluence with Cherry Creek				A&Ww	FBC			FC		AgL
SR	Dipping Vat Reservoir	33°55'47"/109°25'31"	Igneous			A&Ww	FBC			FC		AgL
SR	Double Cienega Creek	Headwaters to confluence with Fish Creek		A&Wc			FBC			FC		AgL
SR	Fish Creek	Headwaters to confluence with the Black River		A&Wc			FBC			FC	AgI	AgL
SR	Fish Creek	Headwaters to confluence with the Salt River				A&Ww	FBC			FC		
SR	Gold Creek	Headwaters to confluence with unnamed tributary at 33°59'47"/111°25'10"		A&Wc			FBC			FC		AgL
SR	Gold Creek	Below confluence with unnamed tributary to confluence with Tonto Creek				A&Ww	FBC			FC		AgL
SR	Gordon Canyon Creek	Headwaters to confluence with Hog Canyon		A&Wc			FBC			FC		AgL
SR	Gordon Canyon Creek	Below confluence with Hog Canyon to confluence with Haigler Creek				A&Ww	FBC			FC		AgL
SR	Greenback Creek	Headwaters to confluence with Tonto Creek				A&Ww	FBC			FC		AgL
SR	Haigler Creek	Headwaters to confluence with unnamed tributary at 34°12'23"/111°00'15"		A&Wc			FBC			FC	AgI	AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
SR	Haigler Creek	Below confluence with unnamed tributary to confluence with Tonto Creek		A&Ww			FBC			FC	AgI	AgL
SR	Hannagan Creek	Headwaters to confluence with Beaver Creek		A&Wc			FBC			FC		AgL
SR	Hay Creek (OAW)	Headwaters to confluence with the Black River, West Fork		A&Wc			FBC			FC		AgL
SR	Home Creek	Headwaters to confluence with the Black River, West Fork		A&Wc			FBC			FC		AgL
SR	Horse Creek	Headwaters to confluence with the Black River, West Fork		A&Wc			FBC			FC		AgL
SR	Horse Camp Creek	Headwaters to confluence with unnamed tributary at 33°54'00"/110°50'07"		A&Wc			FBC			FC		AgL
SR	Horse Camp Creek	Below confluence with unnamed tributary to confluence with Cherry Creek		A&Ww			FBC			FC		AgL
SR	Horton Creek	Headwaters to confluence with Tonto Creek		A&Wc			FBC			FC	AgI	AgL
SR	Houston Creek	Headwaters to confluence with Tonto Creek		A&Ww			FBC			FC		AgL
SR	Hunter Creek	Headwaters to confluence with Christopher Creek		A&Wc			FBC			FC		AgL
SR	LaBarge Creek	Headwaters to Canyon Lake		A&Ww			FBC			FC		
SR	Lake Sierra Blanca	33°52'25"/109°16'05"		A&Wc			FBC			FC	AgI	AgL
SR	Miami Wash	Headwaters to confluence with Pinal Creek			A&We			PBC				
SR	Mule Creek	Headwaters to confluence with Canyon Creek		A&Wc			FBC		DWS	FC	AgI	AgL
SR	Open Draw Creek	Headwaters to confluence with the East Fork of Black River		A&Wc			FBC			FC		AgL
SR	P B Creek	Headwaters to Forest Service Road #203 at 33°57'08"/110°56'12"		A&Wc			FBC			FC		AgL
SR	P B Creek	Below Forest Service Road #203 to Cherry Creek		A&Ww			FBC			FC		AgL
SR	Pinal Creek	Headwaters to confluence with unnamed EDW wash (Globe WWTP) at 33°25'29"/110°48'20"			A&We			PBC				AgL
SR	Pinal Creek (EDW)	Confluence with unnamed EDW wash (Globe WWTP) to 33°26'55"/110°49' 25"				A&Wedw		PBC				
SR	Pinal Creek	From 33°26'55"/110°49'25" to Lower Pinal Creek water treatment plant outfall #001 at 33°31'04"/110°51'55"			A&We			PBC				AgL
SR	Pinal Creek	From Lower Pinal Creek WTP outfall # to See Ranch Crossing at 33°32'25"/110°52'28"				A&Wedw		PBC				
SR	Pinal Creek	From See Ranch Crossing to confluence with unnamed tributary at 33°35'28"/110°54'31"		A&Ww			FBC					
SR	Pinal Creek	From unnamed tributary to confluence with Salt River		A&Ww			FBC			FC		
SR	Pine Creek	Headwaters to confluence with the Salt River		A&Ww			FBC			FC		
SR	Pinto Creek	Headwaters to confluence with unnamed tributary at 33°19'27"/110°54'58"		A&Wc			FBC			FC	AgI	AgL
SR	Pinto Creek	Below confluence with unnamed tributary to Roosevelt Lake		A&Ww			FBC			FC	AgI	AgL
SR	Pool Corral Lake	33°30'38"/110°00'15"	Igneous	A&Ww			FBC			FC	AgI	AgL
SR	Pueblo Canyon Creek	Headwaters to confluence with unnamed tributary at 33°50'23"/110°51'37"		A&Wc			FBC			FC		AgL
SR	Pueblo Canyon Creek	Below confluence with unnamed tributary to confluence with Cherry Creek		A&Ww			FBC			FC		AgL
SR	Reevis Creek	Headwaters to confluence with Pine Creek		A&Ww			FBC			FC		
SR	Reservation Creek	Headwaters to confluence with the Black River		A&Wc			FBC			FC		AgL
SR	Reynolds Creek	Headwaters to confluence with Workman Creek		A&Wc			FBC			FC		AgL
SR	Roosevelt Lake	33°52'17"/111°00'17"	Deep	A&Ww			FBC		DWS	FC	AgI	AgL
SR	Russell Gulch	FromHeadwaters to confluence with Miami Wash			A&We			PBC				
SR	Rye Creek	Headwaters to confluence with Tonto Creek		A&Ww			FBC			FC		AgL
SR	Saguaro Lake	33°33'44"/111°30'55"	Deep	A&Ww			FBC		DWS	FC	AgI	AgL
SR	Salome Creek	Headwaters to confluence with the Salt River		A&Ww			FBC			FC	AgI	AgL
SR	Salt House Lake	33°57'04"/109°20'11"	Igneous	A&Ww			FBC			FC		AgL
SR	Salt River	Theodore Roosevelt Dam to 2 km below Granite Reef Dam		A&Ww			FBC		DWS	FC	AgI	AgL
SR	Slate Creek	Headwaters to confluence with Tonto Creek		A&Ww			FBC			FC		AgL
SR	Snake Creek (OAW)	Headwaters to confluence with the Black River		A&Wc			FBC			FC		AgL
SR	Spring Creek	Headwaters to confluence with Tonto Creek		A&Ww			FBC			FC		AgL
SR	Stinky Creek (OAW)	Headwaters to confluence with the Black River, West Fork		A&Wc			FBC			FC		AgL
SR	Thomas Creek	Headwaters to confluence with Beaver Creek		A&Wc			FBC			FC		AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural		
SR	Thompson Creek	Headwaters to confluence with the West Fork of the Black River		A&Wc			FBC			FC		AgL
SR	Tonto Creek	Headwaters to confluence with unnamed tributary at 34°18'11"/111°04'18"		A&Wc			FBC			FC	AgI	AgL
SR	Tonto Creek	Below confluence with unnamed tributary to Roosevelt Lake			A&Ww		FBC			FC	AgI	AgL
SR	Turkey Creek	Headwaters to confluence with Rock Creek		A&Wc			FBC			FC		
SR	Wildcat Creek	Headwaters to confluence with Centerfire Creek		A&Wc			FBC			FC		AgL
SR	Willow Creek	Headwaters to confluence with Beaver Creek		A&Wc			FBC			FC		AgL
SR	Workman Creek	Headwaters to confluence with Reynolds Creek		A&Wc			FBC			FC	AgI	AgL
SR	Workman Creek	Below confluence with Reynolds Creek to confluence with Salome Creek			A&Ww		FBC			FC	AgI	AgL
UG	Apache Creek	Headwaters to confluence with the Gila River			A&Ww		FBC			FC		AgL
UG	Ash Creek	Headwaters to confluence with unnamed tributary at 32°46'15"/109°51'45"		A&Wc			FBC			FC		AgL
UG	Ash Creek	Below confluence with unnamed tributary to confluence with the Gila River			A&Ww		FBC			FC		AgL
UG	Bennett Wash	Headwaters to the Gila River				A&We		PBC				
UG	Bitter Creek	Headwaters to confluence with the Gila River			A&Ww		FBC			FC		
UG	Blue River	Headwaters to confluence with Strayhorse Creek at 33°29'02"/109°12'14"		A&Wc			FBC			FC	AgI	AgL
UG	Blue River	Below confluence with Strayhorse Creek to confluence with San Francisco River			A&Ww		FBC			FC	AgI	AgL
UG	Bonita Creek (OAW)	San Carlos Indian Reservation boundary to confluence with the Gila River			A&Ww		FBC		DWS	FC		AgL
UG	Buckalou Creek	Headwaters to confluence with Castle Creek		A&Wc			FBC			FC		AgL
UG	Campbell Blue Creek	Headwaters to confluence with the Blue River		A&Wc			FBC			FC		AgL
UG	Castle Creek	Headwaters to confluence with Campbell Blue Creek		A&Wc			FBC			FC		AgL
UG	Cave Creek (OAW)	Headwaters to confluence with South Fork Cave Creek		A&Wc			FBC			FC	AgI	AgL
UG	Cave Creek (OAW)	Below confluence with South Fork Cave Creek to Coronado National Forest boundary			A&Ww		FBC			FC	AgI	AgL
UG	Cave Creek	Below Coronado National Forest boundary to New Mexico border			A&Ww		FBC			FC	AgI	AgL
UG	Cave Creek, South Fork	Headwaters to confluence with Cave Creek		A&Wc			FBC			FC	AgI	AgL
UG	Chase Creek	Headwaters to the Phelps-Dodge Morenci Mine			A&Ww		FBC			FC		AgL
UG	Chase Creek	Below the Phelps-Dodge Morenci Mine to confluence with San Francisco River				A&We		PBC				
UG	Chitty Canyon Creek	Headwaters to confluence with Salt House Creek		A&Wc			FBC			FC		AgL
UG	Cima Creek	Headwaters to confluence with Cave Creek		A&Wc			FBC			FC		AgL
UG	Cluff Ranch Pond #1	32°48'55"/109°50'46"	Sedimentary		A&Ww		FBC			FC	AgI	AgL
UG	Cluff Ranch Pond #3	32°48'21"/109°51'46"	Sedimentary		A&Ww		FBC			FC	AgI	AgL
UG	Coleman Creek	Headwaters to confluence with Campbell Blue Creek		A&Wc			FBC			FC		AgL
UG	Dankworth Lake	32°43'13"/109°42'17"	Sedimentary		A&Wc		FBC			FC		
UG	Deadman Canyon Creek	Headwaters to confluence with unnamed tributary at 32°43'50"/109°49'03"		A&Wc			FBC		DWS	FC		AgL
UG	Deadman Canyon Creek	Below confluence with unnamed tributary to confluence with Graveyard Wash			A&Ww		FBC		DWS	FC		AgL
UG	Eagle Creek	Headwaters to confluence with unnamed tributary at 33°22'32"/109°29'43"		A&Wc			FBC		DWS	FC	AgI	AgL
UG	Eagle Creek	Below confluence with unnamed tributary to confluence with the Gila River			A&Ww		FBC		DWS	FC	AgI	AgL
UG	East Eagle Creek	Headwaters to confluence with Eagle Creek		A&Wc			FBC			FC		AgL
UG	East Turkey Creek	Headwaters to confluence with unnamed tributary at 31°58'22"/109°12'20"		A&Wc			FBC			FC		AgL
UG	East Turkey Creek	Below confluence with unnamed tributary to terminus near San Simon River			A&Ww		FBC			FC		AgL
UG	East Whitetail	Headwaters to terminus near San Simon River			A&Ww		FBC			FC		AgL
UG	Emigrant Canyon	Headwaters to terminus near San Simon River			A&Ww		FBC			FC		AgL
UG	Evans Pond #1	32°49'19"/109°51'12"	Sedimentary		A&Ww		FBC			FC	AgI	AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
UG	Evans Pond #2	32°49'14"/109°51'09"	Sedimentary		A&Ww			FBC			FC	AgI	AgL
UG	Fishhook Creek	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		AgL
UG	Foot Creek	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		AgL
UG	Frye Canyon Creek	Headwaters to Frye Mesa Reservoir		A&Wc				FBC		DWS	FC		AgL
UG	Frye Canyon Creek	Highline CanalHeadwaters to terminus near San Simon River			A&Ww			FBC			FC		AgL
UG	Frye Mesa Reservoir	32°45'14"/109°50'02"	Igneous	A&Wc				FBC		DWS	FC		
UG	Gibson Creek	Headwaters to confluence with Marijilda Creek		A&Wc				FBC			FC		AgL
UG	Gila River	New Mexico border to the San Carlos Indian Reservation boundary			A&Ww			FBC			FC	AgI	AgL
UG	Grant Creek	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		AgL
UG	Judd Lake	33°51'15"/109°09'35"	Sedimentary	A&Wc				FBC			FC		
UG	K P Creek (OAW)	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		AgL
UG	Lanphier Canyon Creek	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		AgL
UG	Little Blue Creek	Headwaters to confluence with Dutch Blue Creek		A&Wc				FBC			FC		AgL
UG	Little Blue Creek	Below confluence with Dutch Blue Creek to confluence with Blue Creek			A&Ww			FBC			FC		AgL
UG	Little Creek	Headwaters to confluence with the San Francisco River		A&Wc				FBC			FC		
UG	Lower George's Reservoir	33°51'24"/109°08'30"	Sedimentary	A&Wc				FBC			FC		AgL
UG	Luna Lake	33°49'50"/109°05'06"	Sedimentary	A&Wc				FBC			FC		AgL
UG	Marijilda Creek	Headwaters to confluence with Gibson Creek		A&Wc				FBC			FC		AgL
UG	Marijilda Creek	Below confluence with Gibson Creek to confluence with Stockton Wash			A&Ww			FBC			FC	AgI	AgL
UG	Markham Creek	Headwaters to confluence with the Gila River			A&Ww			FBC			FC		AgL
UG	Pigeon Creek	Headwaters to confluence with the Blue River			A&Ww			FBC			FC		AgL
UG	Raspberry Creek	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		
UG	Roper Lake	32°45'23"/109°42'14"	Sedimentary		A&Ww			FBC			FC		
UG	San Francisco River	Headwaters to the New Mexico border		A&Wc				FBC			FC	AgI	AgL
UG	San Francisco River	New Mexico border to confluence with the Gila River			A&Ww			FBC			FC	AgI	AgL
UG	San Simon River	Headwaters to confluence with the Gila River				A&We			PBC				AgL
UG	Sheep Tank	32°46'14"/109°48'09"	Sedimentary		A&Ww			FBC			FC		AgL
UG	Smith Pond	32°49'15"/109°50'36"	Sedimentary		A&Ww			FBC			FC		
UG	Squaw Creek	Headwaters to confluence with Thomas Creek		A&Wc				FBC			FC		AgL
UG	Stone Creek	Headwaters to confluence with the San Francisco River		A&Wc				FBC			FC	AgI	AgL
UG	Strayhorse Creek	Headwaters to confluence with the Blue River		A&Wc				FBC			FC		
UG	Thomas Creek	Headwaters to confluence with Rousensock Creek		A&Wc				FBC			FC		AgL
UG	Thomas Creek	Below confluence with Rousensock Creek to confluence with Blue River			A&Ww			FBC			FC		AgL
UG	Tinny Pond	33°47'49"/109°04'27"	Sedimentary		A&Ww			FBC			FC		AgL
UG	Turkey Creek	Headwaters to confluence with Campbell Blue Creek		A&Wc				FBC			FC		AgL
VR	American Gulch	Headwaters to the Northern Gila County Sanitary District WWTP outfall at 34°14'02"/111°22'14"			A&Ww			FBC			FC	AgI	AgL
VR	American Gulch (EDW)	Below Northern Gila County Sanitary District WWTP outfall to confluence with the East Verde River					A&Wedw		PBC				
VR	Apache Creek	Headwaters to confluence with Walnut Creek			A&Ww			FBC			FC		AgL
VR	Ashbrook Wash	Headwaters to the Fort McDowell Indian Reservation boundary				A&We			PBC				
VR	Aspen Creek	Headwaters to confluence with Granite Creek			A&Ww			FBC			FC		
VR	Bar Cross Tank	35°00'41"/112°05'39"			A&Ww			FBC			FC		AgL
VR	Barrata Tank	35°02'43"/112°24'21"			A&Ww			FBC			FC		AgL
VR	Bartlett Lake	33°49'52"/111°37'44"	Deep		A&Ww			FBC		DWS	FC	AgI	AgL
VR	Beaver Creek	Headwaters to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Big Chino Wash	Headwaters to confluence with Sullivan Lake				A&We			PBC				AgL
VR	Bitter Creek	Headwaters to the Jerome WWTP outfall at 34°45'12"/112°06'24"				A&We			PBC				AgL

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
VR	Bitter Creek (EDW)	Jerome WWTP outfall to the Yavapai Apache Indian Reservation boundary				A&Wedw		PBC				AgL	
VR	Bitter Creek	Below the Yavapai Apache Indian Reservation boundary to confluence with the Verde River			A&Ww			FBC			FC	AgI	AgL
VR	Black Canyon Creek	Headwaters to confluence with unnamed tributary at 34°39'20"/112°05'06"			A&Wc			FBC			FC		AgL
VR	Black Canyon Creek	Below confluence with unnamed tributary to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Bonita Creek	Headwaters to confluence with Ellison Creek			A&Wc			FBC			FC		
VR	Bray Creek	Headwaters to confluence with Webber Creek			A&Wc			FBC			FC		AgL
VR	Camp Creek	Headwaters to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Cereus Wash	Headwaters to the Fort McDowell Indian Reservation boundary				A&We			PBC				
VR	Chase Creek	Headwaters to confluence with the East Verde River			A&Wc			FBC		DWS	FC		
VR	Clover Creek	Headwaters to confluence with Headwaters of West Clear Creek			A&Wc			FBC			FC		AgL
VR	Coffee Creek	Headwaters to confluence with Spring Creek			A&Ww			FBC			FC		AgL
VR	Colony Wash	Headwaters to the Fort McDowell Indian Reservation boundary				A&We			PBC				
VR	Dead Horse Lake	34°45'08"/112°00'42"	Shallow		A&Ww			FBC			FC		
VR	Deadman Creek	Headwaters to Horseshoe Reservoir			A&Ww			FBC			FC		AgL
VR	Del Monte Wash	Headwaters to confluence with City of Cottonwood WWTP outfall 002 at 34°43'57"/112°02'46"				A&We			PBC				
VR	Del Monte Wash (EDW)	City of Cottonwood WWTP outfall 002 at 34°43'57"/112°02'46" to confluence with Verde River					A&Wedw		PBC				
VR	Del Rio Dam Lake	34°48'55"/112°28'03"	Sedimentary		A&Ww			FBC			FC		AgL
VR	Dry Beaver Creek	Headwaters to confluence with Beaver Creek			A&Ww			FBC			FC	AgI	AgL
VR	Dry Creek (EDW)	Sedona Ventures WWTP outfall at 34°50'02"/111°52'17" to 34°48'12"/111°52'48"					A&Wedw		PBC				
VR	Dude Creek	Headwaters to confluence with the East Verde River			A&Wc			FBC			FC	AgI	AgL
VR	East Verde River	Headwaters to confluence with Ellison Creek			A&Wc			FBC		DWS	FC	AgI	AgL
VR	East Verde River	Below confluence with Ellison Creek to confluence with the Verde River			A&Ww			FBC		DWS	FC	AgI	AgL
VR	Ellison Creek	Headwaters to confluence with the East Verde River			A&Wc			FBC			FC		AgL
VR	Fossil Creek (OAW)	Headwaters to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Fossil Springs (OAW)	34°25'24"/111°34'27"			A&Ww			FBC		DWS	FC		
VR	Foxboro Lake	34°53'42"/111°39'55"			A&Ww			FBC			FC		AgL
VR	Fry Lake	35°03'45"/111°48'04"			A&Ww			FBC			FC		AgL
VR	Gap Creek	Headwaters to confluence with Government Spring			A&Wc			FBC			FC		AgL
VR	Gap Creek	Below Government Spring to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Garrett Tank	35°18'57"/112°42'20"			A&Ww			FBC			FC		AgL
VR	Goldwater Lake, Lower	34°29'56"/112°27'17"	Sedimentary	A&Wc				FBC		DWS	FC		
VR	Goldwater Lake, Upper	34°29'52"/112°26'59"	Igneous	A&Wc				FBC		DWS	FC		
VR	Granite Basin Lake	34°37'01"/112°32'58"	Igneous	A&Wc				FBC			FC	AgI	AgL
VR	Granite Creek	Headwaters to Watson Lake			A&Wc			FBC			FC	AgI	AgL
VR	Granite Creek	Below Watson Lake to confluence with the Verde River			A&Ww			FBC			FC	AgI	AgL
VR	Green Valley Lake (EDW)	34°13'54"/111°20'45"	Urban				A&Wedw		PBC		FC		
VR	Heifer Tank	35°20'27"/112°32'59"			A&Ww			FBC			FC		AgL
VR	Hell Canyon Tank	35°04'59"/112°24'07"	Igneous	A&Ww				FBC			FC		AgL
VR	Homestead Tank	35°21'24"/112°41'36"	Igneous	A&Ww				FBC			FC		AgL
VR	Horse Park Tank	34°58'15"/111°36'32"			A&Ww			FBC			FC		AgL
VR	Horseshoe Reservoir	34°00'25"/111°43'36"	Sedimentary	A&Ww				FBC			FC	AgI	AgL
VR	Houston Creek	Headwaters to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Huffer Tank	34°27'46"/111°23'11"			A&Ww			FBC			FC		AgL
VR	J.D. Dam Lake	35°04'02"/112°01'48"	Shallow	A&Wc				FBC			FC	AgI	AgL
VR	Jacks Canyon Wash	Headwaters to Big Park WWTP outfall at 34°45'46"/111°43'51"				A&We			PBC				
VR	Jacks Canyon Wash (EDW)	Below Big Park WWTP outfall to confluence with Dry Beaver Creek					A&Wedw		PBC				

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Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 83)	Lake Category	Aquatic and Wildlife			Human Health			Agricultural			
VR	Lime Creek	Headwaters to Horseshoe Reservoir			A&Ww			FBC		FC		AgL	
VR	McLellan Reservoir	35°13'09"/112°17'06"	Igneous		A&Ww			FBC		FC	AgI	AgL	
VR	Meath Dam Tank	35°07'52"/112°27'35"			A&Ww			FBC		FC		AgL	
VR	Mullican Place Tank	34°44'16"/111°36'10"	Igneous		A&Ww			FBC		FC		AgL	
VR	Oak Creek (OAW)	Headwaters to confluence with unnamed tributary at 34°59'15"/111°44'47"		A&Wc				FBC		DWS	FC	AgI	AgL
VR	Oak Creek (OAW)	Below confluence with unnamed tributary to confluence with Verde River			A&Ww			FBC		DWS	FC	AgI	AgL
VR	Oak Creek, West Fork (OAW)	Headwaters to confluence with Oak Creek		A&Wc				FBC			FC		AgL
VR	Odell Lake	34°56'5"/111°37'53"	Igneous	A&Wc				FBC			FC		
VR	Peck's Lake	34°46'51"/112°02'01"	Shallow		A&Ww			FBC			FC	AgI	AgL
VR	Perkins Tank	35°06'42"/112°04'12"	Shallow		A&Wc			FBC			FC		AgL
VR	Pine Creek	Headwaters to confluence with unnamed tributary at 34°21'51"/111°26'49"		A&Wc				FBC		DWS	FC	AgI	AgL
VR	Pine Creek	Below confluence with unnamed tributary to confluence with East Verde River			A&Ww			FBC		DWS	FC	AgI	AgL
VR	Red Creek	Headwaters to confluence with the Verde River			A&Ww			FBC			FC		AgL
VR	Reservoir #1	35°13'5"/111°50'09"	Igneous		A&Ww			FBC			FC		
VR	Reservoir #2	35°13'17"/111°50'39"	Igneous		A&Ww			FBC			FC		
VR	Roundtree Canyon Creek	Headwaters to confluence with Tangle Creek			A&Ww			FBC			FC		AgL
VR	Scholze Lake	35°11'53"/112°00'37"	Igneous	A&Wc				FBC			FC		AgL
VR	Spring Creek	Headwaters to confluence with unnamed tributary at 34°57'23"/111°57'21"			A&Wc			FBC			FC	AgI	AgL
VR	Spring Creek	Below confluence with unnamed tributary to confluence with Oak Creek			A&Ww			FBC			FC	AgI	AgL
VR	Steel Dam Lake	35°13'36"/112°24'54"	Igneous	A&Wc				FBC			FC		AgL
VR	Stehr Lake	34°22'01"/111°40'02"	Sedimentary		A&Ww			FBC			FC		AgL
VR	Stone Dam Lake	35°13'32"/112°24'10"			A&Wc			FBC			FC	AgI	AgL
VR	Stoneman Lake	34°46'47"/111°31'14"	Shallow		A&Wc			FBC			FC	AgI	AgL
VR	Sullivan Lake	34°51'42"/112°27'51"			A&Ww			FBC			FC	AgI	AgL
VR	Sycamore Creek	Headwaters to confluence with unnamed tributary at 35°03'41"/111°57'31"		A&Wc				FBC			FC	AgI	AgL
VR	Sycamore Creek	Below confluence with unnamed tributary to confluence with Verde River			A&Ww			FBC			FC	AgI	AgL
VR	Sycamore Creek	Headwaters to confluence with Verde River at 33°37'55"/111°39'58"			A&Ww			FBC			FC	AgI	AgL
VR	Sycamore Creek	Headwaters to confluence with Verde River			A&Ww			FBC			FC		AgL
VR	Tangle Creek	Headwaters to confluence with Verde River			A&Ww			FBC			FC	AgI	AgL
VR	Trinity Tank	35°27'44"/112°48'01"			A&Ww			FBC			FC		AgL
VR	Unnamed Wash	Flagstaff Meadows WWTP outfall at '35°13'59"/111°48'35" to Volunteer Wash					A&Wedw		PBC				
VR	Verde River	From confluence of Chino Wash and Granite Creek to Bartlett Lake Dam			A&Ww			FBC			FC	AgI	AgL
VR	Verde River	Below Bartlett Lake Dam to Salt River			A&Ww			FBC		DWS	FC	AgI	AgL
VR	Walnut Creek	Headwaters to confluence with Big Chino Wash			A&Ww			FBC			FC		AgL
VR	Watson Lake	34°34'58"/112°25'26"	Igneous		A&Ww			FBC			FC	AgI	AgL
VR	Webber Creek	Headwaters to confluence with the East Verde River		A&Wc				FBC			FC		AgL
VR	West Clear Creek	Headwaters to confluence with Meadow Canyon			A&Wc			FBC			FC		AgL
VR	West Clear Creek	Below confluence with Meadow Canyon to confluence with the Verde River			A&Ww			FBC			FC	AgI	AgL
VR	Wet Beaver Creek	Headwaters to unnamed springs at 34°41'17"/111°34'34"			A&Wc			FBC			FC	AgI	AgL
VR	Wet Beaver Creek	Below unnamed springs to confluence with Dry Beaver Creek			A&Ww			FBC			FC	AgI	AgL
VR	Whitehorse Lake	35°06'59"/112°00'48"	Igneous	A&Wc				FBC		DWS	FC	AgI	AgL
VR	Williamson Valley Wash	Headwaters to confluence with Mint Wash				A&We			PBC				AgL
VR	Williamson Valley Wash	From confluence of Mint Wash to 10.5 km downstream			A&Ww			FBC			FC		AgL
VR	Williamson Valley Wash	From 10.5 km downstream of Mint Wash confluence to confluence with Big Chino Wash				A&We			PBC				AgL
VR	Williscraft Tank	35°11'22"/112°35'40"			A&Ww			FBC			FC		AgL
VR	Willow Creek	Above Willow Creek Reservoir			A&Wc			FBC			FC		AgL
VR	Willow Creek	Below Willow Creek Reservoir to confluence with Granite Creek			A&Ww			FBC			FC		AgL
VR	Willow Creek Reservoir	34°36'17"/112°26'19"	Shallow		A&Ww			FBC			FC	AgI	AgL
VR	Willow Valley Lake	34°41'08"/111°20'02"	Sedimentary		A&Ww			FBC			FC		AgL

**Watersheds**

- BW = Bill Williams
- CG = Colorado – Grand Canyon
- CL = Colorado – Lower Gila
- LC = Little Colorado
- MG = Middle Gila
- SC = Santa Cruz – Rio Magdalena – Rio Sonoyta
- SP = San Pedro – Willcox Playa – Rio Yaqui
- SR = Salt River
- UG = Upper Gila
- VR = Verde River

**Other Abbreviations**

- WWTP = Wastewater Treatment Plant
- Km = kilometers

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1). Appendix B repealed, new Appendix B adopted effective April 24, 1996 (Supp. 96-2). Amended by final rulemaking at 8 A.A.R. 1264, effective March 8, 2002 (Supp. 02-1). Amended by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**Appendix C. Site-Specific Standards**

Watershed	Surface Water	Surface Water Description & Location	Parameter	Site-Specific Criterion
LC	Rio de Flag (EDW)	Flagstaff WWTP outfall to the confluence with San Francisco Wash at 35°14'04"/111°28'02.5"	Copper (D)	36 µg/L (A&Wedw)
CL	Yuma East Wetlands	From inlet culvert from Colorado River into restored channel to Ocean Bridge	Selenium (T)	2.2 mg/L (A&Ww chronic)
			Total residual chlorine	33 µg/L (A&Ww acute)
				20 µg/L (A&Ww chronic)
SR	Pinto Creek	From confluence of Ellis Ranch tributary at 33°19'26.7"/110°54'57.5" to the confluence of West Fork of Pinto Creek at 33°27'32.3"/111°00'19.7"	Copper (D)	34 µg/L (A&Ww acute for hardness values below 268 mg/L)
				34 µg/L (A&Ww chronic)
CG	Bright Angel Wash	South Rim Grand Canyon National Park WWTP at 36°02'59"/112°09'02" to Coconino Wash	Copper (D)	42.5 µg/L (A&Wedw)
CG	Transept Canyon	North Rim Grand Canyon WWTP at 36°12'20"/112°03'35" to 1km downstream	Copper (D)	42.5 µg/L (A&Wedw)

EPA disapproved site-specific copper criteria for Bright Angel Wash and Transept Canyon. These criteria are not in effect for CWA purposes.

**Historical Note**

Adopted effective February 18, 1992 (Supp. 92-1). Appendix C repealed effective April 24, 1996 (Supp. 96-2). New Appendix C made by final rulemaking at 14 A.A.R. 4708, effective January 31, 2009 (Supp. 08-4). Amended by final rulemaking at 22 A.A.R. 2328, effective August 2, 2016 (Supp. 16-4).

**ARTICLE 2. REPEALED**

**R18-11-201. Repealed**

**Historical Note**

Amended effective January 29, 1980 (Supp. 80-1). Amended subsection A. effective April 17, 1984 (Supp. 84-2). Former Section R9-21-201 repealed, former Section R9-21-203 renumbered as Section R9-21-201 and amended effective January 7, 1985 (Supp. 85-1). Amended effective August 12, 1986 (Supp. 86-4). Former Section R9-21-201 renumbered without change as Section R18-11-201 (Supp. 87-3). Amended effective December 1, 1988 (Supp. 88-4). Section repealed effective February 18, 1992 (Supp. 92-1).

**R18-11-202. Repealed**

**Historical Note**

Former Section R9-21-202 repealed, former Section R9-21-102 renumbered as Section R9-21-202 and amended effective January 7, 1985 (Supp. 85-1). Amended

subsections (B), (D), and (E) effective August 12, 1986 (Supp. 86-4). Former Section R9-21-202 renumbered without change as Section R18-11-202 (Supp. 87-3). Section repealed, new Section adopted effective February 18, 1992 (Supp. 92-1). Section repealed effective April 24, 1996 (Supp. 96-2).

**R18-11-203. Repealed**

**Historical Note**

Amended effective January 29, 1980 (Supp. 80-1). Amended subsection (B) by adding paragraphs (27) and (28) effective October 14, 1981 (Supp. 81-5). Former Section R9-21-203 renumbered as Section R9-21-201, former Section R9-21-204 renumbered as Section R9-21-203 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-203 renumbered and amended as Section R9-21-204, new Section R9-21-203 adopted effective August 12, 1986 (Supp. 86-4). Former Section R9-21-203 renumbered without change as Section R18-11-203 (Supp. 87-3). Amended subsection

(B) effective December 1, 1988 (Supp. 88-4). Section repealed, new Section adopted effective February 18, 1992 (Supp. 92-1). Section repealed effective April 24, 1996 (Supp. 96-2).

#### **R18-11-204. Repealed**

##### **Historical Note**

Former Section R9-21-204 renumbered and amended as Section R9-21-207, former Section R9-21-206 renumbered and amended as Section R9-21-204 effective January 29, 1980 (Supp. 80-1). Former Section R9-21-204 renumbered as Section R9-21-203, former Section R9-21-205 renumbered as Section R9-21-204 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-204 renumbered and amended as Section R9-21-205, former Section R9-21-203 renumbered and amended as Section R9-21-204 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-204 renumbered without change as Section R18-11-204 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-205. Repealed**

##### **Historical Note**

Former Section R9-21-205 repealed, new Section R9-21-205 adopted effective January 29, 1980 (Supp. 80-1). Former Section R9-21-205 renumbered as Section R9-21-204, former Section R9-21-206 renumbered as Section R9-21-205 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-205 renumbered and amended as Section R9-21-206, former Section R9-21-204 renumbered and amended as Section R9-21-205 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-205 renumbered without change as Section R18-11-205 (Supp. 87-3). Section repealed, new Section adopted effective February 18, 1992 (Supp. 92-1). Section repealed April 24, 1996 (Supp. 96-2).

#### **R18-11-206. Repealed**

##### **Historical Note**

Former Section R9-21-206 renumbered and amended as Section R9-21-204, new Section R9-21-206 adopted effective January 29, 1980 (Supp. 80-1). Amended by adding subsection (B) effective October 14, 1981 (Supp. 81-5). Amended subsection (B) and Table 1 effective January 29, 1982 (Supp. 82-1). Amended subsection (B) and Table 1 effective August 13, 1982 (Supp. 82-4). Former Section R9-21-206 renumbered as Section R9-21-205, former Section R9-21-207 renumbered as Section R9-21-206 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-206 renumbered and amended as Section R9-21-207, former Section R9-21-205 renumbered and amended as R9-21-206 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-206 renumbered without change as Section R18-11-206 (Supp. 87-3).

#### **R18-11-207. Repealed**

##### **Historical Note**

Former Section R9-21-207 repealed, former Section R9-21-204 renumbered and amended as Section R9-21-207 effective January 29, 1980 (Supp. 80-1). Former Section R9-21-207 renumbered as Section R9-21-206, former Section R9-21-208 renumbered as Section R9-21-207 and amended effective January 7,

1985 (Supp. 85-1). Former Section R9-21-207 renumbered without change as Section R9-21-208, former Section R9-21-206 renumbered and amended as Section R9-21-207 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-207 renumbered without change as Section R18-11-207 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-208. Repealed**

##### **Historical Note**

Former Section R9-21-208 repealed, new Section R9-21-208 adopted effective January 29, 1980 (Supp. 80-1). Former Section R9-21-208 renumbered as Section R9-21-207, Appendices 1 through 9 amended as Appendix A (now shown following R9-21-213), former Section R9-21-209 renumbered as R9-21-208 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-208 renumbered and amended as Section R9-21-209, former Section R9-21-207 renumbered without change as Section R9-21-208 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-208 renumbered without change as Section R18-11-208 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-209. Repealed**

##### **Historical Note**

Former Section R9-21-209 renumbered and amended as Section R9-21-210, new Section R9-21-209 adopted effective January 29, 1980 (Supp. 80-1). Former Section R9-21-209 renumbered as Section R9-21-208, Tables I and II amended as Appendix B (now shown following R9-21-213 and Appendix A), former Section R9-21-210 renumbered as Section R9-21-209 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-209 renumbered and amended as Section R9-21-210, former Section R9-21-208 renumbered and amended as Section R9-21-209 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-209 renumbered without change as Section R18-11-209 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-210. Repealed**

##### **Historical Note**

Former Section R9-21-210 renumbered and amended as Section R9-21-211, former Section R9-21-209 renumbered and amended as Section R9-21-210 effective January 29, 1980 (Supp. 80-1). Amended subsection (A) effective April 17, 1984 (Supp. 84-2). Former Section R9-21-210 renumbered as Section R9-21-209, former Section R9-21-211 renumbered as Section R9-21-210 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-210 renumbered and amended as Section R9-21-211, former Section R9-21-209 renumbered and amended as Section R9-21-210 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-210 renumbered without change as Section R18-11-210 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-211. Repealed**

##### **Historical Note**

Former Section R9-21-210 renumbered and amended as Section R9-21-211 effective January 29, 1980 (Supp. 80-1). Amended subsections (D), (G) three (I), and added (J)

effective October 14, 1981 (Supp. 81-5). Former Section R9-21-211 renumbered as Section R9-21-210, former Section R9-21-212 renumbered as Section R9-21-211 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-211 renumbered and amended as Section R9-21-212, former Section R9-21-210 renumbered and amended as Section R9-21-211 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-211 renumbered without change as Section R18-11-211 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-212. Repealed**

##### **Historical Note**

Adopted effective January 29, 1980 (Supp. 80-1). Former Section R9-21-212 renumbered as Section R9-21-211, former Section R9-21-213 renumbered as Section R9-21-212 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-212 repealed, former Section R9-21-211 renumbered and amended as Section R9-21-212 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-212 renumbered without change as Section R18-11-212 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-213. Repealed**

##### **Historical Note**

Adopted effective January 29, 1980 (Supp. 80-1). Amended effective April 17, 1984 (Supp. 84-2). Former Section R9-21-213 renumbered as Section R9-21-212, former Section R9-21-103 renumbered as Section R9-21-213 and amended effective January 7, 1985 (Supp. 85-1). Former Section R9-21-213 renumbered without change as Section R9-21-214, new Section R9-21-213 adopted effective August 12, 1986 (Supp. 86-4). Former Section R9-21-213 renumbered without change as Section R18-11-213 (Supp. 87-3). Amended effective December 1, 1988 (Supp. 88-4). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **R18-11-214. Repealed**

##### **Historical Note**

Former Section R9-21-213 renumbered without change as Section R9-21-214 effective August 12, 1986 (Supp. 86-4). Former Section R9-21-214 renumbered without change as Section R18-11-214 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1).

#### **Appendix A. Repealed**

##### **Historical Note**

Former Section R9-21-208, Appendices 1 through 9 renumbered and amended as new Appendix A adopted effective January 7, 1985 (Supp. 85-1). Amended effective August 12, 1986 (Supp. 86-4). Appendix repealed effective February 18, 1992 (Supp. 92-1).

#### **Appendix B. Repealed**

##### **Historical Note**

Former R9-21-209, Table 1 and Table 2 renumbered and amended as Appendix B adopted effective January 7, 1985 (Supp. 85-1). Amended effective August 12, 1986 (Supp. 86-4). Appendix repealed effective February 18, 1992 (Supp. 92-1).

### **ARTICLE 3. RECLAIMED WATER QUALITY STANDARDS**

#### **R18-11-301. Definitions**

The terms in this Article have the following meanings:

“Direct reuse” has the meaning prescribed in R18-9-701(1).

“Disinfection” means a treatment process that uses oxidants, ultraviolet light, or other agents to kill or inactivate pathogenic organisms in wastewater.

“Filtration” means a treatment process that removes particulate matter from wastewater by passage through porous media.

“Gray water” means wastewater, collected separately from a sewage flow, that originates from a clothes washer, bathtub, shower, or sink, but it does not include wastewater from a kitchen sink, dishwasher, or a toilet.

“Industrial wastewater” means wastewater generated from an industrial process.

“Landscape impoundment” means a manmade lake, pond, or impoundment of reclaimed water where swimming, wading, boating, fishing, and other water-based recreational activities are prohibited. A landscape impoundment is created for storage, landscaping, or for aesthetic purposes only.

“NTU” means nephelometric turbidity unit.

“On-site wastewater treatment facility” has the meaning prescribed in A.R.S. § 49-201(24).

“Open access” means that access to reclaimed water by the general public is uncontrolled.

“Reclaimed water” has the meaning prescribed in A.R.S. § 49-201(31).

“Recreational impoundment” means a manmade lake, pond, or impoundment of reclaimed water where boating or fishing is an intended use of the impoundment. Swimming and other full-body recreation activities (for example, water-skiing) are prohibited in a recreational impoundment.

“Restricted access” means that access to reclaimed water by the general public is controlled.

“Secondary treatment” means a biological treatment process that achieves the minimum level of effluent quality defined by the federal secondary treatment regulation at 40 CFR § 133.102.

“Sewage” means untreated wastes from toilets, baths, sinks, lavatories, laundries, and other plumbing fixtures in places of human habitation, employment, or recreation.

##### **Historical Note**

Adopted effective July 9, 1981 (Supp. 81-4). Former Section R9-21-301 renumbered without change as Section R18-11-301 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

#### **R18-11-302. Applicability**

This Article applies to the direct reuse of reclaimed water, except for:

1. The direct reuse of gray water, or
2. The direct reuse of reclaimed water from an onsite wastewater treatment facility regulated by a general Aquifer Protection Permit under 18 A.A.C. 9, Article 3.

##### **Historical Note**

Adopted effective June 8, 1981 (Supp. 81-3). Amended effective January 7, 1985 (Supp. 85-1). Former Section

R9-21-302 renumbered without change as Section R18-11-302 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-303. Class A+ Reclaimed Water**

- A.** Class A+ reclaimed water is wastewater that has undergone secondary treatment, filtration, nitrogen removal treatment, and disinfection. Chemical feed facilities to add coagulants or polymers are required to ensure that filtered effluent before disinfection complies with the 24-hour average turbidity criterion prescribed in subsection (B)(1). Chemical feed facilities may remain idle if the 24-hour average turbidity criterion in (B)(1) is achieved without chemical addition.
- B.** An owner of a facility shall ensure that:
1. The turbidity of Class A+ reclaimed water at a point in the wastewater treatment process after filtration and immediately before disinfection complies with the following:
    - a. The 24-hour average turbidity of filtered effluent is two NTUs or less, and
    - b. The turbidity of filtered effluent does not exceed five NTUs at any time.
  2. Class A+ reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
    - a. There are no detectable fecal coliform organisms in four of the last seven daily reclaimed water samples taken, and
    - b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 23 / 100 ml.
    - c. If alternative treatment processes or alternative turbidity criteria are used, or reclaimed water is blended with other water to produce Class A+ reclaimed water under subsection (C), there are no detectable enteric virus in four of the last seven monthly reclaimed water samples taken.
  3. The 5-sample geometric mean concentration of total nitrogen in a reclaimed water sample is less than 10 mg / L.
- C.** An owner of a facility may use alternative treatment methods other than those required by subsection (A), or comply with alternative turbidity criteria other than those required by subsection (B)(1), or blend reclaimed water with other water to produce Class A+ reclaimed water provided the owner demonstrates through pilot plant testing, existing water quality data, or other means that the alternative treatment methods, alternative turbidity criteria, or blending reliably produces a reclaimed water that meets the disinfection criteria in subsection (B)(2) and the total nitrogen criteria in subsection (B)(3) before discharge to a reclaimed water distribution system.
- D.** Class A+ reclaimed water is not required for any type of direct reuse. A person may use Class A+ reclaimed water for any type of direct reuse listed in Table A.

**Historical Note**

Adopted effective January 7, 1985 (Supp. 85-1).  
Amended effective August 12, 1986 (Supp. 86-4).  
Former Section R9-21-303 renumbered without change as Section R18-11-303 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-304. Class A Reclaimed Water**

- A.** Class A reclaimed water is wastewater that has undergone secondary treatment, filtration, and disinfection. Chemical feed facilities to add coagulants or polymers are required to ensure that filtered effluent before disinfection complies with the 24-hour average turbidity criterion prescribed in subsection (B)(1). Chemical feed facilities may remain idle if the 24-hour average turbidity criterion in subsection (B)(1) is achieved without chemical addition.
- B.** An owner of a facility shall ensure that:
1. The turbidity of Class A reclaimed water at a point in the wastewater treatment process after filtration and immediately before disinfection complies with the following:
    - a. The 24-hour average turbidity of filtered effluent is two NTUs or less, and
    - b. The turbidity of filtered effluent does not exceed five NTUs at any time.
  2. Class A reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
    - a. There are no detectable fecal coliform organisms in four of the last seven daily reclaimed water samples taken, and
    - b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 23 / 100 ml.
    - c. If alternative treatment processes or alternative turbidity criteria are used, or reclaimed water is blended with other water to produce Class A reclaimed water under subsection (C), there are no detectable enteric virus in four of the last seven monthly reclaimed water samples taken.
- C.** An owner of a facility may use alternative treatment methods other than those required by subsection (A), or comply with alternative turbidity criteria other than those required by subsection (B)(1), or blend reclaimed water with other water to produce Class A reclaimed water provided the owner demonstrates through pilot plant testing, existing water quality data, or other means that the alternative treatment methods, alternative turbidity criteria, or blending reliably produces a reclaimed water that meets the disinfection criteria in subsection (B)(2) before discharge to a reclaimed water distribution system.
- D.** A person shall use Class A reclaimed water for a type of direct reuse listed as Class A in Table A. A person may use Class A reclaimed water for a type of direct reuse listed as Class B or Class C in Table A.

**Historical Note**

Adopted effective January 7, 1985 (Supp. 85-1).  
Amended effective August 12, 1986 (Supp. 86-4).  
Former Section R9-21-304 renumbered without change as Section R18-11-304 (Supp. 87-3). Section repealed effective February 18, 1992 (Supp. 92-1). New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-305. Class B+ Reclaimed Water**

- A.** Class B+ reclaimed water is wastewater that has undergone secondary treatment, nitrogen removal treatment, and disinfection.
- B.** An owner of a facility shall ensure that:
1. Class B+ reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
    - a. The concentration of fecal coliform organisms in four of the last seven daily reclaimed water samples is less than 200 / 100 ml.

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- b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 800 / 100 ml.
- 2. The 5-sample geometric mean concentration of total nitrogen in a reclaimed water sample is less than 10 mg / L.
- C. Class B+ reclaimed water is not required for a type of direct reuse. A person may use Class B+ reclaimed water for a type of direct reuse listed as Class B or Class C in Table A. A person shall not use Class B+ reclaimed water for a type of direct reuse listed as Class A in Table A.

**Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-306. Class B Reclaimed Water**

- A. Class B reclaimed water is wastewater that has undergone secondary treatment and disinfection.
- B. An owner of a facility shall ensure that Class B reclaimed water meets the following criteria after disinfection treatment and before discharge to a reclaimed water distribution system:
  - 1. The concentration of fecal coliform organisms in four of the last seven daily reclaimed water samples is less than 200 / 100 ml.
  - 2. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 800 / 100 ml.
- C. A person shall use a minimum of Class B reclaimed water for a type of direct reuse listed as Class B in Table A. A person may use Class B reclaimed water for a type of direct reuse listed as Class C in Table A. A person shall not use Class B reclaimed water for a type of direct reuse listed as Class A in Table A.

**Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-307. Class C Reclaimed Water**

- A. Class C reclaimed water is wastewater that has undergone secondary treatment in a series of wastewater stabilization ponds, including aeration, with or without disinfection.
- B. The owner of a facility shall ensure that:
  - 1. The total retention time of Class C reclaimed water in wastewater stabilization ponds is at least 20 days.
  - 2. Class C reclaimed water meets the following criteria after treatment and before discharge to a reclaimed water distribution system:
    - a. The concentration of fecal coliform organisms in four of the last seven reclaimed water samples taken is less than 1000 / 100 ml.
    - b. The single sample maximum concentration of fecal coliform organisms in a reclaimed water sample is less than 4000 / 100 ml.
- C. A person shall use a minimum of Class C reclaimed water for a type of direct reuse listed as Class C in Table A. A person shall not use Class C reclaimed water for a type of direct reuse listed as Class A or Class B in Table A.

**Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-308. Industrial Reuse**

- A. The reclaimed water quality requirements for the following direct reuse applications are industry-specific and shall be determined by the Department on a case-by-case basis in a

reclaimed water permit issued by the Department under 18 A.A.C. 9, Article 7:

- 1. Direct reuse of industrial wastewater containing sewage.
- 2. Direct reuse of industrial wastewater for the production or processing of any crop used as human or animal food.
- B. The Department shall use best professional judgment to determine the reclaimed water quality requirements needed to protect public health and the environment for a type of direct reuse specified in subsection (A).

**Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**R18-11-309. Reclaimed Water Quality Standards for an Unlisted Type of Direct Reuse**

- A. The Department may prescribe in an individual reclaimed water permit issued under 18 A.A.C. 9, Article 7, reclaimed water quality requirements for a type of direct reuse not listed in Table A. Before permitting a direct reuse of reclaimed water not listed in Table A, the Department shall, using its best professional judgment, determine and require compliance with reclaimed water quality requirements needed to protect public health and the environment.
- B. Department may determine that Class A+, A, B+, B, or C reclaimed water is appropriate for a new type of direct reuse.
- C. The Department shall consider the following factors when prescribing reclaimed water quality requirements for a new type of direct reuse:
  - 1. The risk to public health;
  - 2. The degree of public access to the site where the reclaimed water is reused and human exposure to the reclaimed water;
  - 3. The level of treatment necessary to ensure that the reclaimed water is aesthetically acceptable;
  - 4. The level of treatment necessary to prevent nuisance conditions;
  - 5. Specific water quality requirements for the intended type of direct reuse;
  - 6. The means of application of the reclaimed water;
  - 7. The degree of treatment necessary to avoid a violation of surface water quality standards or aquifer water quality standards;
  - 8. The potential for improper or unintended use of the reclaimed water;
  - 9. The reuse guidelines, criteria, or standards adopted or recommended by the U.S. Environmental Protection Agency or other federal or state agencies that apply to the new type of direct reuse; and
  - 10. Similar wastewater reclamation experience of reclaimed water providers in the United States.

**Historical Note**

New Section adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**Table A. Minimum Reclaimed Water Quality Requirements for Direct Reuse**

Type of Direct Reuse	Minimum Class of Reclaimed Water Required
Irrigation of food crops	A
Recreational impoundments	A
Residential landscape irrigation	A
Schoolground landscape irrigation	A

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Open access landscape irrigation	A
Toilet and urinal flushing	A
Fire protection systems	A
Spray irrigation of an orchard or vineyard	A
Commercial closed loop air conditioning systems	A
Vehicle and equipment washing (does not include self-service vehicle washes)	A
Snowmaking	A
Surface irrigation of an orchard or vineyard	B
Golf course irrigation	B
Restricted access landscape irrigation	B
Landscape impoundment	B
Dust control	B
Soil compaction and similar construction activities	B
Pasture for milking animals	B
Livestock watering (dairy animals)	B
Concrete and cement mixing	B
Materials washing and sieving	B
Street cleaning	B
Pasture for non-dairy animals	C
Livestock watering (non-dairy animals)	C
Irrigation of sod farms	C
Irrigation of fiber, seed, forage, and similar crops	C
Silviculture	C

Note: Nothing in this Article prevents a wastewater treatment plant from using a higher quality reclaimed water for a type of direct reuse than the minimum class of reclaimed water listed in Table A. For example, a wastewater treatment plant may provide Class A reclaimed water for a type of direct reuse where Class B or Class C reclaimed water is acceptable.

**Historical Note**

New Table adopted by final rulemaking at 7 A.A.R. 870, effective January 22, 2001 (Supp. 01-1).

**ARTICLE 4. AQUIFER WATER QUALITY STANDARDS****R18-11-401. Definitions**

In addition to the definitions contained in A.R.S. §§ 49-101 and 49-201, the terms of this Article shall have the following meanings:

1. “Beta particle and photon radioactivity from man-made radionuclides” means all radionuclides emitting beta particles or photons, except Thorium-232, Uranium-235, Uranium-238 and their progeny.
2. “Dose equivalent” means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements.
3. “Drinking water protected use” means the protection and maintenance of aquifer water quality for human consumption.
4. “Gross alpha particle activity” means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

5. “Mg/l” means milligrams per liter.
6. “Millirem” means 1/1000 of a rem. A rem means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system.
7. “Non-drinking water protected use” means the protection and maintenance of aquifer water quality for a use other than for human consumption.
8. “pCi” means picocurie, or the quantity of radioactive material producing 2.22 nuclear transformations per minute.
9. “Total trihalomethanes” means the sum of the concentrations of the following trihalomethane compounds: trichloromethane (chloroform), dibromo-chloromethane, bromodichloromethane and tribromo-methane (bromoform).

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Amended effective August 14, 1992 (Supp. 92-3).

**R18-11-402. Repealed****Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**R18-11-403. Analytical Methods**

Analysis of a sample to determine compliance with an aquifer water quality standard shall be in accordance with an analytical method specified in A.A.C. Title 9, Chapter 14, Article 6 or an alternative analytical method that is approved by the Director of the Arizona Department of Health Services pursuant to A.A.C. R9-14-607(B).

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Amended effective August 14, 1992 (Supp. 92-3).

**R18-11-404. Laboratories**

A test result from a sample taken to determine compliance with an aquifer water quality standard shall be valid only if the sample has been analyzed by a laboratory that is licensed by the Arizona Department of Health Services for the analysis performed.

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Amended effective August 14, 1992 (Supp. 92-3).

**R18-11-405. Narrative Aquifer Water Quality Standards**

- A. A discharge shall not cause a pollutant to be present in an aquifer classified for a drinking water protected use in a concentration which endangers human health.
- B. A discharge shall not cause or contribute to a violation of a water quality standard established for a navigable water of the state.
- C. A discharge shall not cause a pollutant to be present in an aquifer which impairs existing or reasonably foreseeable uses of water in an aquifer.

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Amended effective August 14, 1992 (Supp. 92-3).

**R18-11-406. Numeric Aquifer Water Quality Standards: Drinking Water Protected Use**

- A. The aquifer water quality standards in this Section apply to aquifers that are classified for drinking water protected use.

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**B.** The following are the aquifer water quality standards for inorganic chemicals:

Pollutant	mg/L
Antimony	0.006
Arsenic	0.05
Asbestos	7 million fibers/liter (longer than 10 mm)
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide (As Free Cyanide)	0.2
Fluoride	4.0
Lead	0.05
Mercury	0.002
Nickel	0.1
Nitrate (as N)	10
Nitrite (as N)	1
Nitrate and nitrite (as N)	10
Selenium	0.05
Thallium	0.002

**C.** The following are the aquifer water quality standards for organic chemicals:

Pollutant	(mg/L)
Benzene	0.005
Benzo (a) pyrene	0.0002
Carbon Tetrachloride	0.005
o-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
1,2-Dichloropropane	0.005
Dichloromethane	0.005
Di (2-ethylhexyl) adipate	0.4
Di (2-ethylhexyl) pthalate	0.006
Ethylbenzene	0.7
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Monochlorobenzene	0.1
Pentachlorophenol	0.001
Styrene	0.1
2,3,7,8-TCDD (Dioxin)	0.00000003
Tetrachloroethylene	0.005
Toluene	1
Trihalomethanes (Total)	0.10
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.20
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Vinyl Chloride	0.002
Xylenes (Total)	10

**D.** The following are the aquifer water quality standards for pesticides and polychlorinated biphenyls (PCBs):

Pollutant	(mg/L)
Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
Dalapon	0.2
1,2-Dibromo-3-Chloropropane (DBCP)	0.0002
2,4,-Dichlorophenoxyacetic Acid(2,4-D)	0.07
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene Dibromide (EDB)	0.00005
Glyphosate	0.7
Heptachlor	0.0004
Heptachlor Epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Oxamyl	0.2
Picloram	0.5
Polychlorinated Biphenols (PCBs)	0.0005
Simazine	0.004
Toxaphene	0.003
2,4,5-Trichlorophenoxypropionic Acid (2,4,5-TP or Silvex)	0.05

**E.** The following are the aquifer water quality standards for radionuclides:

1. The maximum concentration for gross alpha particle activity, including Radium-226 but excluding radon and uranium, shall not exceed 15 pCi/l.
2. The maximum concentration for combined Radium-226 and Radium-228 shall not exceed 5 pCi/l.
3. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.
4. Except for the radionuclides listed in this subsection, the concentration of man-made radionuclides causing 4 millirem total body or organ dose equivalents shall be calculated on the basis of a 2-liter-per-day drinking water intake using the 168-hour data listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," National Bureau of Standards Handbook 69, National Bureau of Commerce, as amended August 1963 (and no future editions), incorporated herein by reference and on file with the Office of the Secretary of State and with the Department. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 millirem/year. The following average annual concentrations are assumed to produce a total body or organ dose of 4 millirem/year:

Radionuclide	Critical Organ	pCi/l
Tritium	Total body	20,000
Strontium-90	Bone Marrow	8

**F.** The aquifer water quality standard for microbiological contaminants is based upon the presence or absence of total coli-

forms in a 100-milliliter sample. If a sample is total coliform-positive, a 100-milliliter repeat sample shall be taken within two weeks of the time the sample results are reported. Any total coliform-positive repeat sample following a total coliform-positive sample constitutes a violation of the aquifer water quality standard for microbiological contaminants.

- G.** The following are the aquifer water quality standards for turbidity:
1. One nephelometric turbidity unit as determined by a monthly average except that five or fewer nephelometric turbidity units may be allowed if it can be determined that the higher turbidity does not interfere with disinfection, prevent maintenance of effective disinfectant agents in water supply distribution systems, or interfere with microbiological determinations.
  2. Five nephelometric turbidity units based on an average of two consecutive days.

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Amended effective August 14, 1992 (Supp. 92-3).  
Amended effective May 26, 1994 (Supp. 94-2).

**R18-11-407. Aquifer Water Quality Standards in Reclassified Aquifers**

- A.** All aquifers in the state are classified for drinking water protected use except for aquifers which are reclassified to a non-drinking water protected use pursuant to A.R.S. § 49-224 and A.A.C. R18-11-503.
- B.** Aquifer water quality standards for drinking water protected use apply to reclassified aquifers except where expressly superseded by aquifer water quality standards adopted pursuant to subsection (C) of this Section.
- C.** The Director shall adopt, by rule, aquifer water quality standards for reclassified aquifers within one year of the date of the order reclassifying the aquifer to a nondrinking water protected use. The Director shall adopt aquifer water quality standards for reclassified aquifers only for pollutants that are specifically identified in a petition for reclassification as prescribed by A.R.S. § 49-223(D) and A.A.C. R18-11-503(B). Aquifer water quality standards for reclassified aquifers shall be sufficient to protect the use of the reclassified aquifer.

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Amended effective August 14, 1992 (Supp. 92-3).

**R18-11-408. Petition for Adoption of a Numeric Aquifer Water Quality Standard**

- A.** Any person may petition the Director to adopt, by rule, a numeric aquifer water quality standard for a pollutant for which no numeric aquifer water quality standard exists.
- B.** Petitions for adoption of a numeric aquifer water quality standard shall be filed with the Department and shall comply with the requirements applicable to petitions for rule adoption as provided by A.R.S. § 41-1033 and A.A.C. R18-1-302, except as otherwise provided by A.R.S. § 49-223 or this Section.
- C.** In addition to the requirements of A.A.C. R18-1-302, a petition for rule adoption to establish a numeric aquifer water quality standard shall include specific reference to:
1. Technical information that the pollutant is a toxic pollutant.
  2. Technical information upon which the Director reasonably may base the establishment of a numeric aquifer water quality standard.
  3. Evidence that the pollutant that is the subject of the petition is or may in the future be present in an aquifer or part of an aquifer that is classified for drinking water pro-

TECTED use. Evidence may include, but is not limited to, any of the following:

- a. A laboratory analysis of a water sample by a laboratory licensed by the Arizona Department of Health Services which indicates the presence of the pollutant in the aquifer.
  - b. A hydrogeological study which demonstrates that the pollutant that is the subject of the petition may be present in an aquifer in the future. The hydrogeological study shall include the following:
    - i. A description of the use that results in a discharge of the pollutant that is the subject of the petition.
    - ii. A description of the mobility of the pollutant in the vadose zone and in the aquifer.
    - iii. A description of the persistence of the pollutant in the vadose zone and in the aquifer.
- D.** Within 180 calendar days of the receipt of a complete petition for rule adoption to establish a numeric aquifer water quality standard, the Director shall make a written determination of whether the petition should be granted or denied. The Director shall give written notice by regular mail of the determination to the petitioner.
- E.** If the petition for rule adoption is granted, the Director shall initiate rulemaking proceedings to adopt a numeric aquifer water quality standard. The Director shall, within one year of the date that the petition for adoption of a numeric aquifer water quality standard is granted, either adopt a rule establishing a numeric aquifer water quality standard or publish a notice of termination of rulemaking in the Arizona Administrative Register.
- F.** If the petition for rule adoption is denied, the Director shall issue a denial letter to the petitioner which explains the reasons for the denial. The denial of a petition for rule adoption to establish a numeric aquifer water quality standard is not subject to judicial review.

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).

**Appendix 1. Repealed**

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**Appendix 2. Repealed**

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**Appendix 3. Repealed**

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**Appendix 4. Repealed**

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**Appendix 5. Repealed**

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**Appendix 6. Repealed**

**Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**Appendix 7. Repealed****Historical Note**

Adopted effective January 4, 1990 (Supp. 90-1).  
Repealed effective August 14, 1992 (Supp. 92-3).

**ARTICLE 5. AQUIFER BOUNDARY AND PROTECTED USE CLASSIFICATION****R18-11-501. Definitions**

In addition to the definitions contained in A.R.S. § 49-201, the words and phrases of this Article shall have the following meaning:

1. "Drinking water protected use" means the protection and maintenance of aquifer water quality for human consumption.
2. "Hardrock areas containing little or no water" means areas of igneous or metamorphic rock which do not yield usable quantities of water.
3. "Nondrinking water protected use" means the protection and maintenance of aquifer water quality for a use other than human consumption.
4. "Usable quantities" means five gallons of water per day.

**Historical Note**

Adopted effective October 22, 1987 (Supp. 87-4).

**R18-11-502. Aquifer boundaries**

- A. Except as provided in subsection (B) of this rule, aquifer boundaries for the aquifers in this state are identified and defined as being identical to the hydrologic basin and subbasin boundaries, as found by the Director of the Department of Water Resources, Findings and Order In The Matter of The Designation of Groundwater Basins and Subbasins In The State of Arizona (dated June 21, 1984), pursuant to A.R.S. §§ 45-403 and 45-404, which is incorporated herein by reference and on file with the Department of Environmental Quality and the Office of the Secretary of State.
- B. Excluded from the boundaries of the aquifers are hard rock areas which contain little or no water, as identified in Plate 1 of the Department of Water Resources, Water Resource Hydrologic Map Series Report Number 2 (dated January 1981) and as further identified in the Bureau of Mines, University of Arizona County Geologic Map Series (individual county maps dated 1957 through 1960), which are incorporated herein by reference and on file with the Department of Environmental Quality and the Office of the Secretary of State.
- C. The Director may, by rule, modify or add an aquifer boundary provided that one or more of the following applies:
  1. The Department of Water Resources modifies the boundaries of its basins or subbasins.
  2. The Director is made aware of new technical information or data which supports refinement of an aquifer boundary.
- D. Facilities located outside of the boundaries defined in these rules shall be subject to A.R.S. § 49-241 except as provided therein.

**Historical Note**

Adopted effective October 22, 1987 (Supp. 87-4).

**R18-11-503. Petition for reclassification**

- A. Any person may petition the Director to reclassify an aquifer from a drinking water protected use to a nondrinking water protected use pursuant to A.R.S. § 49-224(C).
- B. A written petition for reclassification pursuant to A.R.S. § 49-224(C) or A.R.S. § 49-224(D) shall be filed with the Department

and shall include the following categories of information:

1. The proposed protected use for which the reclassification is being requested.
2. The pollutant and affected aquifer water quality standards for which the reclassification is being requested.
3. A hydrogeologic report which demonstrates that the aquifer proposed for reclassification is or will be hydrologically isolated, to the extent described in A.R.S. § 49-224(C)(1). This report and demonstration of hydrologic isolation for the area containing such aquifer, and immediate adjacent geologic units, shall include at least the following:
  - a. Hydrogeologic area maps and cross sections.
  - b. An analysis of subsurface geology, including geologic and hydrologic separation.
  - c. Water level elevation or piezometric level contour maps.
  - d. Analysis of hydrologic characteristics of the aquifer and the immediate adjacent geologic units.
  - e. Description of existing water quality and analysis of water chemistry.
  - f. Projected annual quantity of water to be withdrawn.
  - g. Identification of pumping centers, cones of depression and areas of recharge.
  - h. A water balance.
  - i. Existing flow direction and evaluation of the effects of seasonal and future pumping on flow.
  - j. An evaluation as to whether the reclassification will contribute to or cause a violation of aquifer water quality standards in other aquifers, or in parts of the aquifer not being proposed for reclassification.
4. Documentation demonstrating that water from the aquifer or part of the aquifer for which reclassification is proposed is not being used as drinking water. This documentation shall include at least the following:
  - a. A list of all wells or springs including their location, ownership and use within the aquifer or part of the aquifer being proposed for reclassification.
  - b. Identification of groundwater withdrawal rights, on file with the Department of Water Resources, within the aquifer or part of the aquifer being proposed for reclassification.
  - c. A comprehensive list of agencies, persons and other information sources consulted for aquifer use documentation.
5. A cost-benefit analysis developed pursuant to the requirements of A.R.S. § 49-224(C)(3), except for petitions submitted pursuant to A.R.S. § 49-224(D). This analysis shall identify potential future uses of the aquifer being proposed for reclassification, as well as other opportunity costs associated with reclassification, and shall contain a description of the cost-benefit methodology used, including all assumptions, data, data sources and criteria considered and all supporting statistical analyses.

**Historical Note**

Adopted effective October 22, 1987 (Supp. 87-4).

**R18-11-504. Agency action on petition**

- A. Upon receipt of a petition for reclassification, the Director shall review the petition for compliance with the requirements of R18-11-503. If additional information is necessary, the petitioner shall be notified of specific deficiencies in writing within 30 calendar days of receipt of the petition.
- B. Within 120 calendar days after receipt of a complete petition, and after consultation with the appropriate advisory council

pursuant to A.R.S. §§ 49-224(C) and 49-204, the Director shall make a final decision to grant or deny the petition and shall notify the petitioner of such decision and the reason for such determination in writing.

- C. Upon a decision to grant a petition for aquifer reclassification, the Director shall initiate proceedings for promulgation of aquifer water quality standards and, if applicable, for aquifer boundary designation for the reclassified aquifers.

#### Historical Note

Adopted effective October 22, 1987 (Supp. 87-4).

#### R18-11-505. Public participation

- A. Within 30 days of receipt of a complete petition for reclassification filed pursuant to A.R.S. § 49-224(D), or if the Director deems it necessary to consider a reclassification under A.R.S. § 49-224(C), the Director shall give public notice of the proposed reclassification pursuant to A.A.C. R18-1-401.
- B. The Director shall hold at least one public hearing at a location as near as practicable to the aquifer proposed for reclassification. The Director shall give notice of each public hearing and conduct the public hearing in accordance with the provisions of A.A.C. R18-1-402.

#### Historical Note

Adopted effective June 29, 1989 (Supp. 89-2).

#### R18-11-506. Rescission of reclassification

The Director may, by rule, rescind an aquifer reclassification and return an aquifer to a drinking water protected use if he determines that any of the conditions under which the reclassification was granted are no longer valid. If the Director initiates a change under this Section, he shall consult with the appropriate advisory council pursuant to A.R.S. §§ 49-224(C) and 49-204.

#### Historical Note

Adopted effective October 22, 1987 (Supp. 87-4).

### ARTICLE 6. IMPAIRED WATER IDENTIFICATION

*Article 6, consisting of Sections R18-11-601 through R18-11-606, made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).*

#### R18-11-601. Definitions

In addition to the definitions established in A.R.S. §§ 49-201 and 49-231, and A.A.C. R18-11-101, the following terms apply to this Article:

1. "303(d) List" means the list of surface waters or segments required under section 303(d) of the Clean Water Act and A.R.S. Title 49, Chapter 2, Article 2.1, for which TMDLs are developed and submitted to EPA for approval.
2. "Attaining" means there is sufficient, credible, and scientifically defensible data to assess a surface water or segment and the surface water or segment does not meet the definition of impaired or not attaining.
3. "AZPDES" means the Arizona Pollutant Elimination Discharge System.
4. "Credible and scientifically defensible data" means data submitted, collected, or analyzed using:
  - a. Quality assurance and quality control procedures under A.A.C. R18-11-602;
  - b. Samples or analyses representative of water quality conditions at the time the data were collected;
  - c. Data consisting of an adequate number of samples based on the nature of the water in question and the parameters being analyzed; and
  - d. Methods of sampling and analysis, including analytical, statistical, and modeling methods that are generally accepted and validated by the scientific community as appropriate for use in assessing the condition of the water.
5. "Designated use" means those uses specified in 18 A.A.C. 11, Article 1 for each surface water or segment whether or not they are attaining.
6. "EPA" means the U.S. Environmental Protection Agency.
7. "Impaired water" means a Navigable water for which credible scientific data exists that satisfies the requirements of A.R.S. § 49-232 and that demonstrates that the water should be identified pursuant to 33 United States Code § 1313(d) and the regulations implementing that statute. A.R.S. § 49-231(1).
8. "Laboratory detection limit" means a "Method Reporting Limit" (MRL) or "Reporting Limit" (RL). These analogous terms describe the laboratory reported value, which is the lowest concentration level included on the calibration curve from the analysis of a pollutant that can be quantified in terms of precision and accuracy.
9. "Monitoring entity" means the Department or any person who collects physical, chemical, or biological data used for an impaired water identification or a TMDL decision.
10. "Naturally occurring condition" means the condition of a surface water or segment that would have occurred in the absence of pollutant loadings as a result of human activity.
11. "Not attaining" means a surface water is assessed as impaired, but is not placed on the 303(d) List because:
  - a. A TMDL is prepared and implemented for the surface water;
  - b. An action, which meets the requirements of R18-11-604(D)(2)(h), is occurring and is expected to bring the surface water to attaining before the next 303(d) List submission; or
  - c. The impairment of the surface water is due to pollution but not a pollutant, for which a TMDL load allocation cannot be developed.
12. "NPDES" means National Pollutant Discharge Elimination System.
13. "Planning List" means a list of surface waters and segments that the Department will review and evaluate to determine if the surface water or segment is impaired and whether a TMDL is necessary.
14. "Pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. 33 U.S.C. 1362(6). Characteristics of water, such as dissolved oxygen, pH, temperature, turbidity, and suspended sediment are considered pollutants if they result or may result in the non-attainment of a water quality standard.
15. "Pollution" means "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." 33 U.S.C. 1362(19).
16. "QAP" means a quality assurance plan detailing how environmental data operations are planned, implemented, and assessed for quality during the duration of a project.
17. "Sampling event" means one or more samples taken under consistent conditions on one or more days at a distinct station or location.
18. "SAP" means a site specific sampling and analysis plan that describes the specifics of sample collection to ensure that data quality objectives are met and that samples collected and analyzed are representative of surface water conditions at the time of sampling.

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19. “Spatially independent sample” means a sample that is collected at a distinct station or location. The sample is independent if the sample was collected:
  - a. More than 200 meters apart from other samples, or
  - b. Less than 200 meters apart, and collected to characterize the effect of an intervening tributary, outfall or other pollution source, or significant hydrographic or hydrologic change.
20. “Temporally independent sample” means a sample that is collected at the same station or location more than seven days apart from other samples.
21. “Threatened” means that a surface water or segment is currently attaining its designated use, however, trend analysis, based on credible and scientifically defensible data, indicates that the surface water or segment is likely to be impaired before the next listing cycle.
22. “TMDL” means total maximum daily load.
23. “TMDL decision” means a decision by the Department to:
  - a. Prioritize an impaired water for TMDL development,
  - b. Develop a TMDL for an impaired water, or
  - c. Develop a TMDL implementation plan.
24. “*Total maximum daily load*” means an estimation of the total amount of a pollutant from all sources that may be added to a water while still allowing the water to achieve and maintain applicable surface water quality standards. Each total maximum daily load shall include allocations for sources that contribute the pollutant to the water, as required by section 303(d) of the clean water act (33 United States Code section 1313(d)) and regulations implementing that statute to achieve applicable surface water quality standards. A.R.S. § 49-231(4).
25. “Water quality standard” means a standard composed of designated uses (classification of waters), the numerical and narrative criteria applied to the specific water uses or classification, the antidegradation policy, and moderating provisions, for example, mixing zones, site-specific alternative criteria, and exemptions, in A.A.C. Title 18, Chapter 11, Article 1.
26. “WQARF” means the water quality assurance revolving fund established under A.R.S. § 49-282.

**Historical Note**

New Section made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).

**R18-11-602. Credible Data**

- A. Data are credible and relevant to an impaired water identification or a TMDL decision when:
  1. Quality Assurance Plan. A monitoring entity, which contribute data for an impaired water identification or a TMDL decision, provides the Department with a QAP that contains, at a minimum, the elements listed in subsections (A)(1)(a) through (A)(1)(f). The Department may accept a QAP containing less than the required elements if the Department determines that an element is not relevant to the sampling activity and that its omission will not impact the quality of the results based upon the type of pollutants to be sampled, the type of surface water, and the purpose of the sampling.
    - a. An approval page that includes the date of approval and the signatures of the approving officials, including the project manager and project quality assurance manager;
    - b. A project organization outline that identifies all key personnel, organizations, and laboratories involved in monitoring, including the specific roles and responsibilities of key personnel in carrying out the procedures identified in the QAP and SAP, if applicable;
  - c. Sampling design and monitoring data quality objectives or a SAP that meets the requirements of subsection (A)(2) to ensure that:
    - i. Samples are spatially and temporally representative of the surface water,
    - ii. Samples are representative of water quality conditions at the time of sampling, and
    - iii. The monitoring is reproducible;
  - d. The following field sampling information to assure that samples meet data quality objectives:
    - i. Sampling and field protocols for each parameter or parametric group, including the sampling methods, equipment and containers, sample preservation, holding times, and any analysis proposed for completion in the field or outside of a laboratory;
    - ii. Field and laboratory methods approved under subsection (A)(5);
    - iii. Handling procedures to identify samples and custody protocols used when samples are brought from the field to the laboratory for analysis;
    - iv. Quality control protocols that describe the number and type of field quality control samples for the project that includes, if appropriate for the type of sampling being conducted, field blanks, travel blanks, equipment blanks, method blanks, split samples, and duplicate samples;
    - v. Procedures for testing, inspecting, and maintaining field equipment;
    - vi. Field instrument calibration procedures that describe how and when field sampling and analytical instruments will be calibrated;
    - vii. Field notes and records that describe the conditions that require documentation in the field, such as weather, stream flow, transect information, distance from water edge, water and sample depth, equipment calibration measurements, field observations of watershed activities, and bank conditions. Indicate the procedures implemented for maintaining field notes and records and the process used for attaching pertinent information to monitoring results to assist in data interpretation;
    - viii. Minimum training and any specialized training necessary to do the monitoring, that includes the proper use and calibration of field equipment used to collect data, sampling protocols, quality assurance/quality control procedures, and how training will be achieved;
  - e. Laboratory analysis methods and quality assurance/quality control procedures that assure that samples meet data quality objectives, including:
    - i. Analytical methods and equipment necessary for analysis of each parameter, including identification of approved laboratory methods described in subsection (A)(5), and laboratory detection limits for each parameter;
    - ii. The name of the designated laboratory, its license number, if licensed by the Arizona Department of Health Services, and the name

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- of a laboratory contact person to assist the Department with quality assurance questions;
- iii. Quality controls that describe the number and type of laboratory quality control samples for the project, including, if appropriate for the type of sampling being conducted, field blanks, travel blanks, equipment blanks, method blanks, split samples, and duplicate samples;
  - iv. Procedures for testing, inspecting, and maintaining laboratory equipment and facilities;
  - v. A schedule for calibrating laboratory instruments, a description of calibration methods, and a description of how calibration records are maintained; and
  - vi. Sample equipment decontamination procedures that outline specific methods for sample collection and preparation of equipment, identify the frequency of decontamination, and describe the procedures used to verify decontamination;
- f. Data review, management, and use that includes the following:
- i. A description of the data handling process from field to laboratory, from laboratory to data review and validation, and from validation to data storage and use. Include the role and responsibility of each person for each step of the process, type of database or other storage used, and how laboratory and field data qualifiers are related to the laboratory result;
  - ii. Reports that describe the intended frequency, content, and distribution of final analysis reports and project status reports;
  - iii. Data review, validation, and verification that describes the procedure used to validate and verify data, the procedures used if errors are detected, and how data are accepted, rejected, or qualified; and
  - iv. Reconciliation with data quality objectives that describes the process used to determine whether the data collected meets the project objectives, which may include discarding data, setting limits on data use, or revising data quality objectives.
2. Sampling and analysis plan.
- a. A monitoring entity shall develop a SAP that contains, at a minimum, the following elements:
    - i. The experimental design of the project, the project goals and objectives, and evaluation criteria for data results;
    - ii. The background or historical perspective of the project;
    - iii. Identification of target conditions, including a discussion of whether any weather, seasonal variations, stream flow, lake level, or site access may affect the project and the consideration of these factors;
    - iv. The data quality objectives for measurement of data that describe in quantitative and qualitative terms how the data meet the project objectives of precision, accuracy, completeness, comparability, and representativeness;
    - v. The types of samples scheduled for collection;
    - vi. The sampling frequency;
    - vii. The sampling periods;
    - viii. The sampling locations and rationale for the site selection, how site locations are bench-
- marked, including scaled maps indicating approximate location of sites; and
- ix. A list of the field equipment, including tolerance range and any other manufacturer's specifications relating to accuracy and precision.
- b. The Department may accept a SAP containing less than the required elements if the Department determines that an element is not relevant to the sampling activity and that its omission will not impact the quality of the results based upon the type of pollutants to be samples, the type of surface water, and the purpose of the sampling.
3. The monitoring entity may include any of the following in the QAP or SAP:
    - a. The name, title, and role of each person and organization involved in the project, identifying specific roles and responsibilities for carrying out the procedures identified in the QAP and SAP;
    - b. A distribution list of each individual and organization receiving a copy of the approved QAP and SAP;
    - c. A table of contents;
    - d. A health and safety plan;
    - e. The inspection and acceptance requirements for supplies;
    - f. The data acquisition that describes types of data not obtained through this monitoring activity, but used in the project;
    - g. The audits and response actions that describe how field, laboratory, and data management activities and sampling personnel are evaluated to ensure data quality, including a description of how the project will correct any problems identified during these assessments; and
    - h. The waste disposal methods that identify wastes generated in sampling and methods for disposal of those wastes.
  4. Exceptions. The Department may determine that the following data are also credible and relevant to an impaired water identification or TMDL decision when data were collected, provided the conditions in subsections (A)(5), (A)(6), and (B) are met, and where the data were collected in the surface water or segment being evaluated for impairment:
    - a. The data were collected before July 12, 2002 and the Department determines that the data yield results of comparable reliability to the data collected under subsections (A)(1) and (A)(2);
    - b. The data were collected after July 12, 2002 as part of an ongoing monitoring effort by a governmental agency and the Department determines that the data yield results of comparable reliability to the data collected under subsections (A)(1) and (A)(2); or
    - c. The instream water quality data were or are collected under the terms of a NPDES or AZPDES permit or a compliance order issued by the Department or EPA, a consent decree signed by the Department or EPA, or a sampling program approved by the Department or EPA under WQARF or CERCLA, and the Department determines that the data yield results of comparable reliability to data collected under subsections (A)(1) and (A)(2).
  5. Data collection, preservation, and analytical procedures. The monitoring entity shall collect, preserve, and analyze data using methods of sample collection, preservation, and analysis established under A.A.C. R9-14-610.

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6. Laboratory. The monitoring entity shall ensure that chemical and toxicological samples are analyzed in a state-licensed laboratory, a laboratory exempted by the Arizona Department of Health Services for specific analyses, or a federal or academic laboratory that can demonstrate proper quality assurance/quality control procedures substantially equal to those required by the Arizona Department of Health Services, and shall ensure that the laboratory uses approved methods identified in A.A.C. R9-14-610.
- B. Documentation for data submission.** The monitoring entity shall provide the Department with the following information either before or with data submission:
1. A copy of the QAP or SAP, or both, revisions to a previously submitted QAP or SAP, and any other information necessary for the Department to evaluate the data under subsection (A)(4);
  2. The applicable dates of the QAP and SAP, including any revisions;
  3. Written assurance that the methods and procedures specified in the QAP and SAP were followed;
  4. The name of the laboratory used for sample analyses and its certification number, if the laboratory is licensed by the Arizona Department of Health Services;
  5. The quality assurance/quality control documentation, including the analytical methods used by the laboratory, method number, detection limits, and any blank, duplicate, and spike sample information necessary to properly interpret the data, if different from that stated in the QAP or SAP;
  6. The data reporting unit of measure;
  7. Any field notes, laboratory comments, or laboratory notations concerning a deviation from standard procedures, quality control, or quality assurance that affects data reliability, data interpretation, or data validity; and
  8. Any other information, such as complete field notes, photographs, climate, or other information related to flow, field conditions, or documented sources of pollutants in the watershed, if requested by the Department for interpreting or validating data.
- C. Recordkeeping.** The monitoring entity shall maintain all records, including sample results, for the duration of the listing cycle. If a surface water or segment is added to the Planning List or to the 303(d) List, the Department shall coordinate with the monitoring entity to ensure that records are kept for the duration of the listing.
- Historical Note**
- New Section made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).
- R18-11-603. General Data Interpretation Requirements**
- A.** The Department shall use the following data conventions to interpret data for impaired water identifications and TMDL decisions:
1. Data reported below laboratory detection limits.
    - a. When the analytical result is reported as <X, where X is the laboratory detection limit for the analyte and the laboratory detection limit is less than or equal to the surface water quality standard, consider the result as meeting the water quality standard:
      - i. Use these statistically derived values in trend analysis, descriptive statistics or modeling if there is sufficient data to support the statistical estimation of values reported as less than the laboratory detection limit; or
      - ii. Use one-half of the value of the laboratory detection limit in trend analysis, descriptive statistics, or modeling, if there is insufficient data to support the statistical estimation of values reported as less than the laboratory detection limit.
    - b. When the sample value is less than or equal to the laboratory detection limit but the laboratory detection limit is greater than the surface water quality standard, shall not use the result for impaired water identifications or TMDL decisions;
  2. Identify the field equipment specifications used for each listing cycle or TMDL developed. A field sample measurement within the manufacturer's specification for accuracy meets surface water quality standards;
  3. Resolve a data conflict by considering the factors identified under the weight-of-evidence determination in R18-11-605(B);
  4. When multiple samples from a surface water or segment are not spatially or temporally independent, or when lake samples are from multiple depths, use the following resultant value to represent the specific dataset:
    - a. The appropriate measure of central tendency for the dataset for:
      - i. A pollutant listed in the surface water quality standards 18 A.A.C. 11, Article 1, Appendix A, Table 1, except for nitrate or nitrate/nitrite;
      - ii. A chronic water quality standard for a pollutant listed in 18 A.A.C. 11, Article 1, Appendix A, Table 2;
      - iii. A surface water quality standard for a pollutant that is expressed as an annual or geometric mean;
      - iv. The surface water quality standard for temperature or the single sample maximum water quality standard for suspended sediment concentration, nitrogen, and phosphorus in R18-11-109;
      - v. The surface water quality standard for radiochemicals in R18-11-109(G); or
      - vi. Except for chromium, all single sample maximum water quality standards in R18-11-112.
    - b. The maximum value of the dataset for:
      - i. The acute water quality standard for a pollutant listed in 18 A.A.C. 11, Article 1, Appendix A, Table 2 and acute water quality standard in R18-11-112;
      - ii. The surface water quality standard for nitrate or nitrate/nitrite in 18 A.A.C. 11, Article 1, Appendix A, Table 1;
      - iii. The single sample maximum water quality standard for bacteria in subsections R18-11-109(A); or
      - iv. The 90th percentile water quality standard for nitrogen and phosphorus in R18-11-109(F) and R18-11-112.
    - c. The worst case measurement of the dataset for:
      - i. Surface water quality standard for dissolved oxygen under R18-11-109(E). For purposes of this subsection, worst case measurement means the minimum value for dissolved oxygen;
      - ii. Surface water quality standard for pH under R18-11-109(B). For purposes of this subsection, "worst case measurement" means both the minimum and maximum value for pH.

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- B.** The Department shall not use the following data for placing a surface water or segment on the Planning List, the 303(d) List, or in making a TMDL decision.
- Any measurement outside the range of possible physical or chemical measurements for the pollutant or measurement equipment,
  - Uncorrected data transcription errors or laboratory errors, and
  - An outlier identified through statistical procedures, where further evaluation determines that the outlier represents a valid measure of water quality but should be excluded from the dataset.
- C.** The Department may employ fundamental statistical tests if appropriate for the collected data and type of surface water when evaluating a surface water or segment for impairment or in making a TMDL decision. The statistical tests include descriptive statistics, frequency distribution, analysis of variance, correlation analysis, regression analysis, significance testing, and time series analysis.
- D.** The Department may employ modeling when evaluating a surface water or segment for impairment or in making a TMDL decision, if the method is appropriate for the type of waterbody and the quantity and quality of available data meet the requirements of R18-11-602. Modeling methods include:
- Better Assessment Science Integrating Source and Non-point Sources (BASINS),
  - Fundamental statistics, including regression analysis,
  - Hydrologic Simulation Program-Fortran (HSPF),
  - Spreadsheet modeling, and
  - Hydrologic Engineering Center (HEC) programs developed by the Army Corps of Engineers.
- Historical Note**
- New Section made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).
- R18-11-604. Types of Surface Waters Placed on the Planning List and 303(d) List**
- A.** The Department shall evaluate, at least every five years, Arizona's surface waters by considering all readily available data.
- The Department shall place a surface water or segment on:
    - The Planning List if it meets any of the criteria described in subsection (D), or
    - The 303(d) List if it meets the criteria for listing described in subsection (E).
  - The Department shall remove a surface water or segment from the Planning List based on the requirements in R18-11-605(E)(1) or from the 303(d) List, based on the requirements in R18-11-605(E)(2).
  - The Department may move surface waters or segments between the Planning List and the 303(d) List based on the criteria established in R18-11-604 and R18-11-605.
- B.** When placing a surface water or segment on the Planning List or the 303(d) List, the Department shall list the stream reach, derived from EPA's Reach File System or National Hydrography Dataset, or the entire lake, unless the data indicate that only a segment of the stream reach or lake is impaired or not attaining its designated use, in which case, the Department shall describe only that segment for listing.
- C.** Exceptions. The Department shall not place a surface water or segment on either the Planning List or the 303(d) List if the non-attainment of a surface water quality standard is due to one of the following:
- Pollutant loadings from naturally occurring conditions alone are sufficient to cause a violation of applicable water quality standards;
  - The data were collected within a mixing zone or under a variance or nutrient waiver established in a NPDES or AZPDES permit for the specific parameter and the result does not exceed the alternate discharge limitation established in the permit. The Department may use data collected within these areas for modeling or allocating loads in a TMDL decision; or
  - An activity exempted under R18-11-117, R18-11-118, or a condition exempted under R18-11-119.
- D.** Planning List.
- The Department shall:
    - Use the Planning List to prioritize surface waters for monitoring and evaluation as part of the Department's watershed management approach;
    - Provide the Planning List to EPA; and
    - Evaluate each surface water and segment on the Planning List for impairment based on the criteria in R18-11-605(D) to determine the source of the impairment.
  - The Department shall place a surface water or segment on the Planning List based the criteria in R18-11-605(C). The Department may also include a surface water or segment on the Planning List when:
    - A TMDL is completed for the pollutant and approved by EPA;
    - The surface water or segment is on the 1998 303(d) List but the dataset used for the listing:
      - Does not meet the credible data requirements of R18-11-602, or
      - Contains insufficient samples to meet the data requirements under R18-11-605(D);
    - Some monitoring data exist but there are insufficient data to determine whether the surface water or segment is impaired or not attaining, including:
      - A numeric surface water quality standard is exceeded, but there are not enough samples or sampling events to fulfill the requirements of R18-11-605(D);
      - Evidence exists of a narrative standard violation, but the amount of evidence is insufficient, based on narrative implementation procedures and the requirements of R18-11-605(D)(3);
      - Existing monitoring data do not meet credible data requirements in R18-11-602; or
      - A numeric surface water quality standard is exceeded, but there are not enough sample results above the laboratory detection limit to support statistical analysis as established in R18-11-603(A)(1).
    - The surface water or segment no longer meets the criteria for impairment based on a change in the applicable surface water quality standard or a designated use approved by EPA under section 303(c)(1) of the Clean Water Act, but insufficient current or original monitoring data exist to determine whether the surface water or segment will meet current surface water quality standards;
    - Trend analysis using credible and scientifically defensible data indicate that surface water quality standards may be exceeded by the next assessment cycle;
    - The exceedance of surface water quality standards is due to pollution, but not a pollutant;
    - Existing data were analyzed using methods with laboratory detection limits above the numeric surface

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- water quality standard but analytical methods with lower laboratory detection limits are available;
- h. The surface water or segment is expected to attain its designated use by the next assessment as a result of existing or proposed technology-based effluent limitations or other pollution control requirements under local, state, or federal authority. The appropriate entity shall provide the Department with the following documentation to support placement on the Planning List:
    - i. Verification that discharge controls are required and enforceable;
    - ii. Controls are specific to the surface water or segment, and pollutant of concern;
    - iii. Controls are in place or scheduled for implementation; and
    - iv. There are assurances that the controls are sufficient to bring about attainment of water quality standards by the next 303(d) List submission; or
  - i. The surface water or segment is threatened due to a pollutant and, at the time the Department submits a final 303(d) List to EPA, there are no federal regulations implementing section 303(d) of the Clean Water Act that require threatened waters be included on the list.

**E. 303(d) List.** The Department shall:

1. Place a surface water or segment on the 303(d) List if the Department determines:
  - a. Based on R18-11-605(D), that the surface water or segment is impaired due to a pollutant and that a TMDL decision is necessary; or
  - b. That the surface water or segment is threatened due to a pollutant and, at the time the Department submits a final 303(d) List to EPA, there are federal regulations implementing section 303(d) of the Clean Water Act that require threatened waters be included on the list.
2. Provide public notice of the 303(d) List according to the requirements of A.R.S. § 49-232 and submit the 303(d) List according to section 303(d) of the Clean Water Act.

**Historical Note**

New Section made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).

**R18-11-605. Evaluating A Surface Water or Segment For Listing and Delisting**

- A.** The Department shall compile and evaluate all reasonably current, credible, and scientifically defensible data to determine whether a surface water or segment is impaired or not attaining.
- B.** Weight-of-evidence approach.
  1. The Department shall consider the following concepts when evaluating data:
    - a. Data or information collected during critical conditions may be considered separately from the complete dataset, when the data show that the surface water or segment is impaired or not attaining its designated use during those critical conditions, but attaining its uses during other periods. Critical conditions may include stream flow, seasonal periods, weather conditions, or anthropogenic activities;
    - b. Whether the data indicate that the impairment is due to persistent, seasonal, or recurring conditions. If the data do not represent persistent, recurring, or sea-

sonal conditions, the Department may place the surface water or segment on the Planning List;

- c. Higher quality data over lower quality data when making a listing decision. Data quality is established by the reliability, precision, accuracy, and representativeness of the data, based on factors identified in R18-11-602(A) and (B), including monitoring methods, analytical methods, quality control procedures, and the documented field and laboratory quality control information submitted with the data. The Department shall consider the following factors when determining higher quality data:
  - i. The age of the measurements. Newer measurements are weighted heavier than older measurements, unless the older measurements are more representative of critical flow conditions;
  - ii. Whether the data provide a direct measure of an impact on a designated use. Direct measurements are weighted heavier than measurements of an indicator or surrogate parameter; or
  - iii. The amount or frequency of the measurements. More frequent data collection are weighted heavier than nominal datasets.
2. The Department shall evaluate the following factors to determine if the water quality evidence supports a finding that the surface water or segment is impaired or not attaining:
  - a. An exceedance of a numeric surface water quality standard based on the criteria in subsections (C)(1), (C)(2), (D)(1), and (D)(2);
  - b. An exceedance of a narrative surface water quality standard based on the criteria in subsections (C)(3) and (D)(3);
  - c. Additional information that determines whether a water quality standard is exceeded due to a pollutant, suspected pollutant, or naturally occurring condition:
    - i. Soil type, geology, hydrology, flow regime, biological community, geomorphology, climate, natural process, and anthropogenic influence in the watershed;
    - ii. The characteristics of the pollutant, such as its solubility in water, bioaccumulation potential, sediment sorption potential, or degradation characteristics, to assist in determining which data more accurately indicate the pollutant's presence and potential for causing impairment; and
    - iii. Available evidence of direct or toxic impacts on aquatic life, wildlife, or human health, such as fish kills and beach closures, where there is sufficient evidence that these impacts occurred due to water quality conditions in the surface water.
  - d. Other available water quality information, such as NPDES or AZPDES water quality discharge data, as applicable.
  - e. If the Department determines that a surface water or segment does not merit listing under numeric water quality standards based on criteria in subsections (C)(1), (C)(2), (D)(1), or (D)(2) for a pollutant, but there is evidence of a narrative standard exceedance in that surface water or segment under subsection (D)(3) as a result of the presence of the same pollutant, the Department shall list the surface water or segment as impaired only when the evidence indi-

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states that the numeric water quality standard is insufficient to protect the designated use of the surface water or segment and the Department justifies the listing based on any of the following:

- i. The narrative standard data provide a more direct indication of impairment as supported by professionally prepared and peer-reviewed publications;
- ii. Sufficient evidence of impairment exists due to synergistic effects of pollutant combinations or site-specific environmental factors; or
- iii. The pollutant is bioaccumulative, relatively insoluble in water, or has other characteristics that indicate it is occurring in the specific surface water or segment at levels below the laboratory detection limits, but at levels sufficient to result in an impairment.

- 3. The Department may consider a single line of water quality evidence when the evidence is sufficient to demonstrate that the surface water or segment is impaired or not attaining.

C. Planning List.

- 1. When evaluating a surface water or segment for placement on the Planning List.
  - a. Consider at least ten spatially or temporally independent samples collected over three or more temporally independent sampling events; and
  - b. Determine numeric water quality standards exceedances. The Department shall:
    - i. Place a surface water or segment on the Planning List following subsection (B), if the number of exceedances of a surface water quality standard is greater than or equal to the number listed in Table 1, which provides the number of exceedances that indicate a minimum of a 10 percent exceedance frequency with a minimum of a 80 percent confidence level using a binomial distribution for a given sample size; or
    - ii. For sample datasets exceeding those shown in Table 1, calculate the number of exceedances using the following equation:  $(X \geq x | n, p)$  where  $n$  = number of samples;  $p$  = exceedance probability of 0.1;  $x$  = smallest number of exceedances required for listing with “ $n$ ” samples; and confidence level  $\geq$  80 percent.

**Table 1. Minimum Number of Samples Exceeding the Numeric Standard**

MINIMUM NUMBER OF SAMPLES EXCEEDING THE NUMERIC STANDARD								
Number of Samples		Number of Samples Exceeding Standard	Number of Samples		Number of Samples Exceeding Standard	Number of Samples		Number of Samples Exceeding Standard
From	To		From	To		From	To	
10	15	3	173	181	22	349	357	41
16	23	4	182	190	23	358	367	42
24	31	5	191	199	24	368	376	43
32	39	6	200	208	25	377	385	44
40	47	7	209	218	26	386	395	45
48	56	8	219	227	27	396	404	46
57	65	9	228	236	28	405	414	47
66	73	10	237	245	29	415	423	48
74	82	11	246	255	30	424	432	49
83	91	12	256	264	31	433	442	50
92	100	13	265	273	32	443	451	51
101	109	14	274	282	33	452	461	52
110	118	15	283	292	34	462	470	53
119	126	16	293	301	35	471	480	54
127	136	17	302	310	36	481	489	55
137	145	18	311	320	37	490	499	56
146	154	19	321	329	38	500		57
155	163	20	330	338	39			
164	172	21	339	348	40			

- 2. When there are less than ten samples, the Department shall place a surface water or segment on the Planning List following subsection (B), if three or more temporally independent samples exceed the following surface water quality standards:
  - a. The surface water quality standard for a pollutant listed in 18 A.A.C. 11, Article 1, Appendix A, Table 1, except for nitrate or nitrate/nitrite;
  - b. The surface water quality standard for temperature or the single sample maximum water quality standard for suspended sediment concentration, nitrogen, and phosphorus in R18-11-109;
  - c. The surface water quality standard for radiochemicals in R18-11-109(G);
  - d. The surface water quality standard for dissolved oxygen under R18-11-109(E);
  - e. The surface water quality standard for pH under R18-11-109(B); or
  - f. The following surface water quality standards in R18-11-112:
    - i. Single sample maximum standards for nitrogen and phosphorus,
    - ii. All metals except chromium, or
    - iii. Turbidity.

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- 3. The Department shall place a surface water or segment on the Planning List if information in subsections (B)(2)(c), (B)(2)(d), and (B)(2)(e) indicates that a narrative water quality standard violation exists, but no narrative implementation procedure required under A.R.S. § 49-232(F) exists to support use of the information for listing.
- D. 303(d) List.
  - 1. When evaluating a surface water or segment for placement on the 303(d) List.
    - a. Consider at least 20 spatially or temporally independent samples collected over three or more temporally independent sampling events; and
    - b. Determine numeric water quality standards exceedances. The Department shall:
      - i. Place a surface water or segment on the 303(d) List, following subsection (B), if the number of exceedances of a surface water quality standard is greater than or equal to the number listed in Table 2, which provides the number of exceedances that indicate a minimum of a 10 percent exceedance frequency with a minimum of a 90 percent confidence level using a binomial distribution, for a given sample size; or
      - ii. For sample datasets exceeding those shown in Table 2, calculate the number of exceedances using the following equation:  $(X \geq x | n, p)$  where  $n$  = number of samples;  $p$  = exceedance probability of 0.1;  $x$  = smallest number of exceedances required for listing with “ $n$ ” samples; and confidence level  $\geq 90$  percent.

**Table 2. Minimum Number of Samples Exceeding the Numeric Standard**

MINIMUM NUMBER OF SAMPLES EXCEEDING THE NUMERIC STANDARD								
Number of Samples		Number of Samples Exceeding Standard	Number of Samples		Number of Samples Exceeding Standard	Number of Samples		Number of Samples Exceeding Standard
From	To		From	To		From	To	
20	25	5	174	182	24	344	352	43
26	32	6	183	191	25	353	361	44
33	40	7	192	199	26	362	370	45
41	47	8	200	208	27	371	379	46
48	55	9	209	217	28	380	388	47
56	63	10	218	226	29	389	397	48
64	71	11	227	235	30	398	406	49
72	79	12	236	244	31	407	415	50
80	88	13	245	253	32	416	424	51
89	96	14	254	262	33	425	434	52
97	104	15	263	270	34	435	443	53
105	113	16	271	279	35	444	452	54
114	121	17	280	288	36	453	461	55
122	130	18	289	297	37	462	470	56
131	138	19	298	306	38	471	479	57
139	147	20	307	315	39	480	489	58
148	156	21	316	324	40	490	498	59
157	164	22	325	333	41	499	500	60
165	173	23	334	343	42			

- 2. The Department shall place a surface water or segment on the 303(d) List, following subsection (B) without the required number of samples or numeric water quality standard exceedances under subsection (D)(1), if either the following conditions occur:
  - a. More than one temporally independent sample in any consecutive three-year period exceeds the surface water quality standard in:
    - i. The acute water quality standard for a pollutant listed in 18 A.A.C. 11, Article 1, Appendix A, Table 2 and the acute water quality standards in R18-11-112;
    - ii. The surface water quality standard for nitrate or nitrate/nitrite in 18 A.A.C. 11, Article 1, Appendix A, Table 1; or
    - iii. The single sample maximum water quality standard for bacteria in subsections R18-11-109(A).
  - b. More than one exceedance of an annual mean, 90th percentile, aquatic and wildlife chronic water quality standard, or a bacteria 30-day geometric mean water quality standard occurs, as specified in R18-11-109, R18-11-110, R18-11-112, or 18 A.A.C. 11, Article 1, Appendix A, Table 2.
- 3. Narrative water quality standards exceedances. The Department shall place a surface water or segment on the Planning List if the listing requirements are met under A.R.S. § 49-232(F).
- E. Removing a surface water, segment, or pollutant from the Planning List or the 303(d) List.
  - 1. Planning List. The Department shall remove a surface water, segment, or pollutant from the Planning List when:
    - a. Monitoring activities indicate that:
      - i. There is sufficient credible data to determine that the surface water or segment is impaired under subsection (D), in which case the Department shall place the surface water or segment

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- on the 303(d) List. This includes surface waters with an EPA approved TMDL when the Department determines that the TMDL strategy is insufficient for the surface water or segment to attain water quality standards; or
- ii. There is sufficient credible data to determine that the surface water or segment is attaining all designated uses and standards.
- b. All pollutants for the surface water or segment are delisted.
2. 303(d) List. The Department shall:
    - a. Remove a pollutant from a surface water or segment from the 303(d) List based on one or more of the following criteria:
      - i. The Department developed, and EPA approved, a TMDL for the pollutant;
      - ii. The data used for previously listing the surface water or segment under R18-11-605(D) is superseded by more recent credible and scientifically defensible data meeting the requirements of R18-11-602, showing that the surface water or segment meets the applicable numeric or narrative surface water quality standard. When evaluating data to remove a pollutant from the 303(d) List, the monitoring entity shall collect the more recent data under similar hydrologic or climatic conditions as occurred when the samples were taken that indicated impairment, if those conditions still exist;
      - iii. The surface water or segment no longer meets the criteria for impairment based on a change in the applicable surface water quality standard or a designated use approved by EPA under section 303(c)(1) of the Clean Water Act;
      - iv. The surface water or segment no longer meets the criteria for impairment for the specific narrative water quality standard based on a change in narrative water quality standard implementation procedures;
      - v. A re-evaluation of the data indicate that the surface water or segment does not meet the criteria for impairment because of a deficiency in the original analysis; or
      - vi. Pollutant loadings from naturally occurring conditions alone are sufficient to cause a violation of applicable water quality standards;
    - b. Remove a surface water, segment, or pollutant from the 303(d) List, based on criteria that are no more stringent than the listing criteria under subsection (D);
    - c. Remove a surface water or segment from the 303(d) List if all pollutants for the surface water or segment are removed from the list;
    - d. Remove a surface water, segment, or pollutant, from the 303(d) List and place it on the Planning List, if:
      - i. The surface water, segment or pollutant was on the 1998 303(d) List and the dataset used in the original listing does not meet the credible data requirements under R18-11-602, or contains insufficient samples to meet the data requirements under subsection (D); or
      - ii. The monitoring data indicate that the impairment is due to pollution, but not a pollutant.

**Historical Note**

New Section made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).

**R18-11-606. TMDL Priority Criteria for 303(d) Listed Surface Waters or Segments**

- A. In addition to the factors specified in A.R.S. § 49-233(C), the Department shall consider the following when prioritizing an impaired water for development of TMDLs:
  1. A change in a water quality standard;
  2. The date the surface water or segment was added to the 303(d) List;
  3. The presence in a surface water or segment of species listed as threatened or endangered under section 4 of the Endangered Species Act;
  4. The complexity of the TMDL;
  5. State, federal, and tribal policies and priorities; and
  6. The efficiencies of coordinating TMDL development with the Department's surface water monitoring program, the watershed monitoring rotation, or with remedial programs.
- B. The Department shall prioritize an impaired surface water or segment for TMDL development based on the factors specified in A.R.S. § 49-233(C) and subsection (A) as follows:
  1. Consider an impaired surface water or segment a high priority if:
    - a. The listed pollutant poses a substantial threat to the health and safety of humans, aquatic life, or wildlife based on:
      - i. The number and type of designated uses impaired;
      - ii. The type and extent of risk from the impairment to human health, aquatic life, or wildlife;
      - iii. The pollutant causing the impairment, or
      - iv. The severity, magnitude, and duration the surface water quality standard was exceeded;
    - b. A new or modified individual NPDES or AZPDES permit is sought for a new or modified discharge to the impaired water;
    - c. The listed surface water or segment is listed as a unique water in A.A.C. R18-11-112 or is part of an area classified as a "wilderness area," "wild and scenic river," or other federal or state special protection of the water resource;
    - d. The listed surface water or segment contains a species listed as threatened or endangered under the federal Endangered Species Act and the presence of the pollutant in the surface water or segment is likely to jeopardize the listed species;
    - e. A delay in conducting the TMDL could jeopardize the Department's ability to gather sufficient credible data necessary to develop the TMDL;
    - f. There is significant public interest and support for the development of a TMDL;
    - g. The surface water or segment has important recreational and economic significance to the public; or
    - h. The pollutant is listed for eight years or more.
  2. Consider an impaired surface water or segment a medium priority if:
    - a. The surface water or segment fails to meet more than one designated use;
    - b. The pollutant exceeds more than one surface water quality standard;
    - c. A surface water quality standard exceedance is correlated to seasonal conditions caused by natural events, such as storms, weather patterns, or lake turnover;

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- d. It will take more than two years for proposed actions in the watershed to result in the surface water attaining applicable water quality standards;
  - e. The type of pollutant and other factors relating to the surface water or segment make the TMDL complex; or
  - f. The administrative needs of the Department, including TMDL schedule commitments with EPA, permitting requirements, or basin priorities that require completion of the TMDL.
3. Consider an impaired surface water or segment a low priority if:
- a. The Department has formally submitted a proposal to delist the surface water, segment, or pollutant to EPA based on R18-11-605(E)(2). If the Department makes the submission outside the listing process cycle, the change in priority ranking will not be effective until EPA approves the submittal;
  - b. The Department has modified, or formally proposed for modification, the designated use or applicable surface water quality standard, resulting in an impaired water no longer being impaired, but the modification has not been approved by EPA;
  - c. The surface water or segment is expected to attain surface water quality standards due to any of the following:
    - i. Recently instituted treatment levels or best management practices in the drainage area,
    - ii. Discharges or activities related to the impairment have ceased, or
    - iii. Actions have been taken and controls are in place or scheduled for implementation that will likely to bring the surface water back into compliance;
  - d. The surface water or segment is ephemeral or intermittent. The Department shall re-prioritize the surface water or segment if the presence of the pollutant in the listed water poses a threat to the health and safety of humans, aquatic life, or wildlife using the water, or the pollutant is contributing to the impairment of a downstream perennial surface water or segment;
  - e. The pollutant poses a low ecological and human health risk;
  - f. Insufficient data exist to determine the source of the pollutant load;
  - g. The uncertainty of timely coordination with national and international entities concerning international waters;
  - h. Naturally occurring conditions are a major contributor to the impairment; and
  - i. No documentation or effective analytical tools exist to develop a TMDL for the surface water or segment with reasonable accuracy.
- C.** The Department will target surface waters with high priority factors in subsections (B)(1)(a) through (B)(1)(d) for initiation of TMDLs within two years following EPA approval of the 303(d) List.
- D.** The Department may shift priority ranking of a surface water or segment for any of the following reasons:
1. A change in federal, state, or tribal policies or priorities that affect resources to complete a TMDL;
  2. Resource efficiencies for coordinating TMDL development with other monitoring activities, including the Department's ambient monitoring program that monitors watersheds on a five-year rotational basis;
  3. Resource efficiencies for coordinating TMDL development with Department remedial or compliance programs;
  4. New information is obtained that will revise whether the surface water or segment is a high priority based on factors in subsection (B); and
  5. Reduction or increase in staff or budget involved in the TMDL development.
- E.** The Department may complete a TMDL initiated before July 12, 2002 for a surface water or segment that was listed as impaired on the 1998 303(d) List but does not qualify for listing under the criteria in R18-11-605, if:
1. The TMDL investigation establishes that the water quality standard is not being met and the allocation of loads is expected to bring the surface water into compliance with standards,
  2. The Department estimates that more than 50 percent of the cost of completing the TMDL has been spent,
  3. There is community involvement and interest in completing the TMDL, or
  4. The TMDL is included within an EPA-approved state workplan initiated before July 12, 2002.

**Historical Note**

New Section made by final rulemaking at 8 A.A.R. 3380, effective July 12, 2002 (Supp. 02-3).