ADEQ Arizona Department of Environmental Quality

DRAFT FACT SHEET

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a riparian habitat restoration area which requires the discharge of up to 3.62 million gallons per day (mgd) during peak irrigation demand and is considered to be a minor industrial facility under the AZPDES program. The discharge limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (A.A.C.) R18-11-101 *et seq*. This permit is proposed to be issued for a period of 5 years.

I. PERMITTEE INFORMATION	
Permittee's Name:	City of Phoenix—Parks and Recreation Department
Permittee's Mailing Address:	200 West Washington Street, 16th Floor Phoenix, AZ 85003
Facility Name:	Rio Salado Habitat Restoration Area
Facility Address or Location:	The Salt River between 19th Avenue and 28th Street in Phoenix, AZ
County:	Maricopa
Contact Person(s): Phone/e-mail address	Jarod Rogers, Deputy Director 602-286-3891/jarod.rogers@phoenix.gov
AZPDES Permit Number:	AZ0024554
Inventory Number:	105483
LTF Number:	97959

II. STATUS OF PERMIT(s)	
AZPDES permit applied for:	Renewal
Date application received:	February 28, 2023
Date application was determined administratively complete:	March 3, 2023
Previous permit number (if different):	N/A
Previous permit expiration date:	August 27, 2023

208 Consistency:

In accordance with A.A.C. R18-9-A903(6), a permit cannot be issued for any discharge inconsistent with a plan or plan amendment approved under section 208(b) of the Clean Water Act.

208 Plan consistency is not required for industrial facilities.

III. GENERAL FACILITY INFORMATION

Type of Facility:	Riparian habitat restoration area
Facility Location Description:	The Rio Salado Habitat Restoration Area extends 5 miles along the Salt River, approximately between 19th Avenue and 28th Street in Phoenix, Arizona.
Nature of facility discharge:	The Rio Salado Habitat Restoration Area receives water from five non-potable groundwater production wells. The wells are identified as Rio Salado Supply Wells (RSSW) 002, 003, 004, 005, and 006. The wells are drilled approximately 220 to 360 feet below ground surface (bgs) and are screened into the upper alluvial unit of the aquifer. The wells pump groundwater to three geotextile lined reservoirs referred to as the 7th Avenue, Central Avenue, and 7th Street reservoirs, which are designed to store water prior to distribution to three vertical-turbine pump stations. From the reservoirs, water is supplied by a gravity-flow delivery system, made up of open canals and two small waterfalls, to the wetland ponds and irrigated areas. Drip irrigation is used to minimize water needs and provides flow as a supplement to natural rainfall and any water that plant roots draw from the ground.
Average flow per discharge:	The maximum daily water demand through the life of the Rio Salado Habitat Area was estimated to be 3.62 MGD during a drought year. During a non-drought year, the demand was estimated to be lower at approximately 2.67 MGD. Discharge flow rates pumped from each of the three wells between January 2018 and December 2022 are provided below. RSSWs 003 and 005 are not currently operational and there was no discharge from Outfalls 003 and 005 during the previous permit term.
Continuous or intermittent discharge:	Continuous for Outfalls 002, 004, and 006. Outfalls 003 and 005 are not currently operational.

Discharge Flow Rates (January 2018 through December 2022)

Well Number	Outfall	Maximum Flow (MGD)	Average Flow (MGD)
RSSW-002	002	2.395	0.040
RSSW-003	003	No Discharge	No Discharge
RSSW-004	004	4.767	0.099
RSSW-005	005	No Discharge	No Discharge
RSSW-006	006	7.410	0.304

There are inactive landfills within and active landfills outside the project boundaries. Based on previously submitted data and the City of Phoenix Treatment Contingency Plan, it was determined that some level of treatment may be needed for certain volatile organic compounds (VOCs). In April 2009, construction of a VOC water treatment facility was completed at 7th Avenue and Lower Buckeye Road. The facility uses air strippers to remove VOCs from RSSW-5 and RSSW-6, but has never been needed. RSSW-5 was taken out of service on March 4, 2009 and remains out of service due to elevated levels of copper and lead detected in February 2009. RSSW-3 was taken out of service on April 3, 2013 due to elevated levels of copper and lead in November 2012. Both RSSW-3 and RSSW-5 are included in the renewal permit to allow for the future use of these wells with the understanding that the City of Phoenix will be in contact with ADEQ prior to bringing the well back on-line and after proper mitigation has occurred.

IV. RECEIVING WATER

The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by designated use depending on the level of protection required to maintain that use.

Receiving Water (Federal):	The Water of the U.S. Protected Surface Water (WOTUS PSW) for facility/ outfall is the Salt River (Below Interstate 10 bridge to the City of Phoenix 23rd Avenue WWTP outfall at 33°24'44''/ 112°07'59'').
River Basin:	Middle Gila River Basin
Outfall Location(s):	Outfall 002: Township 1 N, Range 3 E, Section 17 Latitude 33° 25’ 28” N, Longitude 112° 04’ 20” W Outfall 003: Township 1 N, Range 3 E, Section 22 Latitude 33° 25’ 11” N, Longitude 112° 02’ 46” W Outfall 004: Township 1 N, Range 3 E, Section 22 Latitude 33° 24’ 56” N, Longitude 112° 02’ 46” W Outfall 005: Township 1 N, Range 3 E, Section 20 Latitude 33° 25’ 19” N, Longitude 112° 04’ 44” W Outfall 006: Township 1 N, Range 3 E, Section 20 Latitude 33° 24’ 60” N, Longitude 112° 04’ 55” W
Designated uses for the receiving water listed above:	Aquatic and Wildlife warm water (A&Ww) Partial Body Contact (PBC) Fish Consumption (FC)
Is the receiving water on the 303(d) list?	No, and there are no total maximum daily load (TMDL) issues associated.

Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108, and the applicable numeric water quality standards are listed in A.A.C. R18-11-109 and in Appendix A thereof. There are two standards for the Aquatic and Wildlife uses, acute and chronic. In developing AZPDES permits, the standards for all applicable designated uses are compared and limits that will protect for all applicable designated uses are developed based on the standards.

V. DESCRIPTION OF DISCHARGE

The groundwater is not treated prior to discharge and is generally expected to meet the surface water quality standards. A summary of the maximum daily discharge concentration for various parameters is included in table 1 below.

VI. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT

Date of Most Recent Inspection:	06/28/2019; no potential violations were noted as a result of this inspection.
Discharge Monitoring Reports (DMR) Reviewed:	09/2018 through 01/2023
Lab Reports Reviewed:	09/2018 through 01/2023
DMR Exceedances:	None
Notice(s) of Violation (NOV) Issued:	None
NOVs Closed:	N/A
Formal Enforcement Action(s):	None

VII. PROPOSED PERMIT CHANGES

The following table lists the major changes from the previous permit in this permit.

Parameter	Existing Permit	Proposed permit	Reason for change
Noncompliance Reporting Hotline	(602) 771-2330	Noncompliance resulting in imminent threat to human health or the environment must be reported to (602) 771-2330, while all other noncompliance must be reported to (602) 771-1440.	Routing emergency calls to the emergency hotline, but all other calls to a non-emergency number.
Use of Metal Translators to Calculate Total Recoverable Permit Limits from Dissolved Criteria (Applicable to Cadmium, Chromium VI, Copper, Lead, Mercury, Nickel, Silver, and Zinc).	No metal translators were used. Assumed the ratio of dissolved to total recoverable is 1 to 1 for all metals with water quality criteria expressed as dissolved.	WQBELs and ALs were converted from dissolved to total recoverable using the default metal translators from the EPA's *The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit from A Dissolved Criterion.*	New procedure for ADEQ to incorporate default metal translators when calculating total recoverable WQBELs and ALs from dissolved criteria.

Arsenic	Discharge Characterization for Outfall 004	Limited for Outfall 004	Data submitted indicated a reasonable potential (RP) for an exceedance of a standard for Outfall 004.
Selenium	Monitoring frequency set to 1x/quarter for Outfalls 002 and 006	Monitoring frequency is 1x/6 months for Outfalls 002 and 006	See Reduced Monitoring Frequency Analysis below.
Iron	Monitoring frequency set to 1x/quarter for Outfall 004	Monitoring frequency is 1x/6 months for Outfall 004	See Reduced Monitoring Frequency Analysis below.
pH	Monitoring frequency set to 1x/quarter for Outfalls 002, 004, and 006	Monitoring frequency is 1x/6 months for Outfalls 002, 004, and 006	See Reduced Monitoring Frequency Analysis below.
Mercury	Discharge characterization	Assessment level monitoring and permit requires the use of ADHS-certified low-level mercury analytical method	RP indeterminant due to high limit of quantitation (LOQ). Low-level method required to achieve a reporting limit at or below the assessment levels set in the permit. See Part II.A.6 of permit.
Discharge Characterization Testing	Monitoring frequency of 1x/permit term	Monitoring frequency of 2x/permit term (once in 2024 and once in 2026)	Demonstrates any changes during the permit term and provides additional data to assist in RP analysis.
Mitigation Program Submissions – Part IV.B.f	Send to: 1110 W. Washington St Phoenix, AZ 85007	Send to: AZPDES@azdeq.gov	Email submissions expedite ADEQ's review of the mitigation program

Reduced Monitoring Frequency Analysis

The permittee requested consideration of reduced monitoring frequencies for selenium and iron in their permit application. EPA's *Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies* (1996) was used to analyze the appropriate monitoring frequency for the two parameters. The guidance document recommends the following factors be considered:

1. **Facility Enforcement History:** There were no instances of noncompliance of any kind during the permit term.
2. **Parameter-by-Parameter Compliance:** Rio Salado Habitat Restoration Area has met all permit limits for all parameters during the permit term.
3. **Parameter-by-Parameter Performance History:** Determine the ratio of long-term effluent average to monthly average limit is calculated to determine appropriate frequency per Table 1.

   Iron:
   - Long-term effluent average: 149 µg/L
   - Monthly average permit limit: 740 µg/L
   - Ratio: 20%
   - Appropriate frequency per Table 1: 1x/6 months

Selenium:
All selenium results for the permit term were non-detections; therefore, a long-term average could not be calculated. Per the guidance document facilities unable to demonstrate discharges of 75% or less of their monthly average permit limits may still be eligible for reductions in monitoring/reporting frequencies at the discretion of the permitting authority. Based on the facility's consistent non-detection results, history of permit compliance, and use of a sufficiently sensitive method since January 2020, the monitoring frequency for selenium has been reduced to 1x/6 months.

pH:
The pH limit is expressed as a range of values rather than an average monthly limit, so calculation of a ratio is not possible. Per the guidance document facilities unable to demonstrate discharges of 75% or less of their monthly average permit limits may still be eligible for reductions in monitoring/reporting frequencies at the discretion of the permitting authority. Based on the facility's consistent results within the required range, history of permit compliance the monitoring frequency for pH has been reduced to 1x/6 months.

4. **Continued Eligibility for Reductions:** ADEQ will continue to monitor each parameter for any permit limit exceedances, significant noncompliance, failure to submit DMRs, and any new enforcement actions. If violations based on these do occur, ADEQ may modify the permit to require increased monitoring.

Anti-backsliding considerations — "Anti-backsliding" refers to statutory (Section 402(o) of the Clean Water Act) and regulatory (40 CFR 122.44(l)) requirements that prohibit the renewal, reissuance, or modification of an existing NPDES permit that contains discharge limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes do identify exceptions to these circumstances where backsliding is acceptable. This permit has been reviewed and drafted with consideration of anti-backsliding concerns.

No limits have been removed from the permit. Limits are retained in the permit for parameters where reasonable potential (RP) for an exceedance of a standard continues to exist or is indeterminate. In these cases, limits will be recalculated using the most current Arizona Water Quality Standards (WQS). If less stringent limits result due to a change in the WQS then backsliding is allowed in accordance with 303(d)(4) if the new limits are consistent with antidegradation requirements and the receiving water is in attainment of the new standard; see Section XI for information regarding antidegradation requirements.

No limits are less stringent due to a change in the WQS in this permit.

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

When determining what parameters need monitoring and/or limits included in the permit, both technology-based and water quality-based criteria were compared and the more stringent criteria applied.

Technology-based Limitations:

There are no promulgated technology-based limitations for discharges of groundwater to riparian habitat restoration areas. Therefore, no technology-based limitations were applied.

Water Quality-Based Effluent Limitations:

Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), discharge limits must be included in the permit for parameters with "reasonable potential" (RP), that is, those known to be or expected to be present in the discharge at a level that could potentially cause any applicable numeric water quality standard to be exceeded. Numeric water quality standards are outlined in A.A.C. R18-11-109 and Appendix A. RP refers to an analysis, based on the statistical calculations using the data submitted or consideration of other factors, to determine whether the discharge may exceed the Water Quality Standards. The procedures used to determine RP are outlined in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* (EPA/505/2-90-001). In most cases, the highest reported value for a parameter is multiplied by a factor (determined from the variability of the data and number of samples) to determine a "critical effluent concentration". This value is then compared to the lowest applicable Water Quality Standard for the receiving water. If the value is greater than the standard, RP exists and a water quality-based effluent limitation (WQBEL) is required in the permit for that parameter. RP may also be determined from BPJ based on knowledge of the treatment facilities and other factors. For instances where all results for a parameter are non-detects, no critical effluent concentration is calculated. Instead the RP determination is based on the analytical method. If a sufficiently sensitive method was used, there is no RP based on BPJ. If a sufficiently sensitive method was not used, RP is indeterminate and an assessment level or limit may be set. The basis for the RP determination for each parameter with a WQBEL is shown in the table below.

The proposed permit limits were established using a methodology developed by EPA. Long Term Averages (LTA) were calculated for each designated use and the lowest LTA was used to calculate the average monthly limit (AML) and maximum daily limit (MDL) necessary to protect all uses. This methodology takes into account criteria, discharge variability, and the number of observations taken to determine compliance with the limit and is described in Chapter 5 of the TSD. Limits based on A&W criteria were developed using the "two-value steady state wasteload allocation" described on page 99 of the TSD. When the limit is based on human health criteria, the monthly average was set at the level of the applicable standard and a daily maximum limit was determined as specified in Section 5.4.4 of the TSD.

Mixing Zone

The limits in this permit were determined without the use of a mixing zone. Arizona state water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies for and is approved for a mixing zone. Since a mixing zone was not applied for or granted, all water quality criteria are applied at end-of-pipe.

Assessment Levels (ALs)

ALs are listed in Part I.B of the permit. An AL differs from a discharge limit in that an exceedance of an AL is not a permit violation. Instead, ALs serve as triggers, alerting the permitting authority when there is cause for re-evaluation of RP for exceeding a water quality standard, which may result in new permit limitations. The AL numeric values also serve to advise the permittee of the analytical sensitivity needed for meaningful data collection. Trace substance monitoring is required when there is uncertain RP (based on non-detect values or limited datasets) or a need to collect additional data or monitor treatment efficacy on some minimal basis. A reopener clause is included in the permit should future monitoring data indicate water quality standards are being exceeded.

The requirement to monitor for these parameters is included in the permit according to A.A.C. R18-11-104(C) and Appendix A. ALs listed for each parameter were calculated in the same manner that a limit would have been calculated (see Water Quality-Based Effluent Limitations).

The following trace substances were not included as limits or assessment levels in the permit due to a lack of RP based on best professional judgment (BPJ): barium, boron, nitrates, nitrites, manganese, and hydrogen sulfide. The numeric standards for these pollutants are well above what would be expected from a groundwater discharge.

Hardness

The permittee is required to sample hardness as $CaCO_3$ at the same time the trace metals are sampled because the water quality standards for some metals are calculated using the water hardness values. The hardness value of 225 mg/L (Outfall 002), 201 mg/L (Outfall 003 – average from when outfall was last in use from 2008-2012), 192 mg/L (Outfall 004), 337 mg/L (Outfall 005– average from when outfall was last in use from 2008-2012), and 273 mg/L (Outfall 006), the average hardness of the discharge as supplied in the application was used to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals (cadmium, chromium III, copper, lead, nickel, silver and zinc).

Whole Effluent Toxicity (WET)

WET testing is required in the permit (Parts I.C and III) to evaluate the discharge according to the narrative toxic standard in A.A.C. R18-11-108(A)(5), as well as whether the discharge has RP for WET per 40 CFR 122.44(d)(iv).

WET testing for chronic toxicity shall be conducted using the following three surrogate species:

- *Ceriodaphnia dubia* (water flea) – for evaluating toxicity to invertebrates
- *Pimephales promelas* (fathead minnow) – for evaluating toxicity to vertebrates
- *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata)* (a green alga) – for evaluating toxicity to plant life

ADEQ does not have a numeric standard for Whole Effluent Toxicity. However, ADEQ adopted the EPA recommended chronic toxicity benchmark of 1.0 Toxic Unit-Chronic (TUc) for a four-day exposure period. Using this benchmark, the limitations and/or action levels for WET included in the permit were calculated in accordance with the methods specified in the *TSD*. The species chosen for WET testing are as recommended in the *TSD* and in *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*.

An exceedance of a limit or action level will trigger follow-up testing to determine if effluent toxicity is persistent. If toxicity above a limit or action level is found in a follow-up test, the permittee will be required to conduct a Toxicity Reduction Evaluation (TRE) and possibly a Toxicity Identification Evaluation (TIE) to identify the source of toxicity and reduce toxicity. These conditions are required to ensure that toxicants are not discharged in amounts that are toxic to organisms [A.A.C. R18-11-108(A)(5)]. A reopener clause is included in accordance with 40 CFR Parts 122 and 124 and AAC R18-9-B906.

The permit requires discrete samples be collected for WET testing. WET sampling must coincide with testing for all the parameters in Parts I.A and B of the permit, when testing of those parameters is required, to aid in the determination of the cause of toxicity if toxicity is detected. Additional procedural requirements for the WET test are included in the proposed permit.

The required WET monitoring frequency for this facility is consistent with the WET testing frequency required for similar facilities. The permit requires WET test results to be reported on discharge monitoring reports and submittal of the full WET lab report to ADEQ.

Discharge Characterization (DC)

In addition to monitoring for parameters assigned either a limit or an AL, sampling is required to assess the presence of pollutants in the discharge at certain minimum frequencies for additional suites of parameters, whether the facility is discharging or not. This monitoring is specified in Tables 4.a. through 4.e., *Discharge Characterization Testing,* as follows:

• Table 4.a.—General Chemistry and Microbiology: ammonia, BOD-5, *E. coli*, total residual chlorine (TRC), dissolved oxygen, total Kjeldahl nitrogen (TKN), nitrate/nitrite, oil and grease, pH, phosphorus, temperature, total dissolved solids (TDS), and total suspended solids (TSS)

• Table 4.b. —Selected Metals, Hardness, Cyanide, and WET

• Table 4.c. —Selected Volatile Organic Compounds

• Table 4. d. —Selected Acid-Extractible Compounds

• Table 4. e. —Selected Base-Neutral Compounds

NOTE: Some parameters listed in Tables 4.a. and 4.b. are also listed in Tables 1 or 2. In this case, the data from monitoring under Tables 1 or 2 may be used to satisfy the requirements of Tables 4.a. and / or 4.b., provided the specified sample types are the same. In the event the facility does not discharge to a Protected Surface Water during the life of the permit, DC monitoring of representative samples of the discharge is still required.

The purpose of DC monitoring is to characterize the discharge and determine if the parameters of concern are present in the discharge and at what levels. This monitoring will be used to assess RP per 40 CFR 122.44(d)(1)(iii)). EC monitoring is required in accordance with 40 CFR 122.43(a), 40 CFR 122.44(i), and 40 CFR 122.48(b) as well as A.R.S. §49-203(A)(7). If pollutants are noted at levels of concern during the permit term, this permit may also be reopened to add related limits or conditions.

Permit Limitations and Monitoring Requirements

Table 1 summarizes the parameters that are limited in the permit and the rationale for that decision. Also included are the parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for those decisions. The corresponding monitoring requirements are shown for each parameter. In general, the regulatory basis for monitoring requirements is per 40 CFR §122.44(i) *Monitoring requirements,* and 40 CFR §122.48(b), *Required monitoring*; all of which have been adopted by reference in A.A.C. R18-9-A905, *AZPDES Program Standards*.

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use	Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Flow	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be monitored on a continual basis using a flow meter and/or calculated flow measurements.
Chlorine, Total Residual (TRC)	11 µg/L A&Ww chronic	No Data	0	N/A	N/A	Monitoring not required except when chlorine is used as part of a mitigation program—see Part IV.B of the permit. 40 CFR Part 136 specifies that discrete samples must be collected for chlorine.
E. coli	30-day geometric mean: 126 cfu /100 mL (4 sample minimum) Single sample maximum: 575 cfu /100 mL/ PBC	002: <1	5	N/A	N/A	*E. coli* is to be monitored as a discrete sample for discharge characterization at Outfalls 002, 003, 004, 005, and 006.
		003: No Data	0			
		004: <1	6			
		005: No Data	0			
		006: <1	6			
pH (2)	Minimum: 6.5 Maximum: 9.0 A&Ww and PBC A.A.C. R18-11-109(B)	002: 7.4	16	N/A	WQBEL is always applicable.	pH is to be monitored at Outfalls 002, 003, 004, 005, and 006 using a discrete sample and a WQBEL remains in the permit. 40 CFR Part 136 specifies that grab samples must be collected for pH. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity if toxicity is detected.
		003: No Data	0			
		004: 7.6	17			
		005: No Data	0			
		006: 7.3	16			
Temperature	R18-11-109C the discharge shall not cause an increase in the ambient water temperature. A&Ww: no more than 3.0°C	002: 24.3°C	2	N/A	N/A	Discharge temperature is to be monitored for discharge characterization once during summer and once during winter by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. At least one sample must coincide with WET testing to aid in the determination of the cause of toxicity, if toxicity is detected.
		003: No Data	0			
		004: 25.1°C	2			
		005: No Data	0			
		006: 25.1°C	2			
Total Dissolved Solids (TDS)	No applicable standard	002: 564 mg/L	1	N/A	N/A	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0			
		004: 542 mg/L	1			
		005: No Data	0			
		006: 814 mg/L	1			

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use	Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Total Phosphorus	No applicable standards	002: 0.036 mg/L	1	N/A	N/A	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0			
		004: 0.51 mg/L	1			
		005: No Data	0			
		006: 0.043 mg/L	1			
Oil & Grease	Narrative standard A.A.C. R18-11-108(B)	002: <6.2 mg/L	7	N/A	RP Exists (BPJ)	Monitoring required and a limit remains in the permit for Outfalls 002, 003, 004, 005, and 006. RP determination is based on the possibility contamination of oil and grease at the wellhead. The average monthly limit of 10 mg/L and daily maximum of 15 mg/L are commonly accepted values that are considered protective of the narrative standard at A.A.C. R18-11-108(B).
		003: No Data	0			
		004: <5.8 mg/L	8			
		005: No Data	0			
		006: <5.8 mg/L	8			
Antimony	30 µg/L A&Ww chronic	002: <5 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: <5 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: <5 µg/L	1	N/A	No RP	
Arsenic	80 µg/L FC	002: 5.1 µg/L	1	67.30 µg/L	No RP	Monitoring required and a limit is set for Outfall 004. Monitoring required at Outfalls 002, 003, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: 6.3 µg/L	1	83.14 µg/L	RP Exists	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: 5.6 µg/L	1	73.90 µg/L	No RP	

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use	Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Beryllium	5.3 µg/L A&Ww chronic	002: <1 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: <1 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: <1 µg/L	1	N/A	No RP	
Cadmium (2)	002: 4.1 µg/L A&Ww chronic	<2.1 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
	003: 3.8 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 3.6 µg/L A&Ww chronic	<2.1 µg/L	1	N/A	No RP	
	005: 5.5 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 5.3 µg/L A&Ww chronic	<2.1 µg/L	1	N/A	No RP	
Chromium (Total)	No applicable standard.	002: <5 µg/L	1	N/A	N/A	Monitoring required as an indicator parameter for Chromium VI. Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		No Data	0	N/A	N/A	
		004: <5 µg/L	1	N/A	N/A	
		005: No Data	0	N/A	N/A	
		006: <5 µg/L	1	N/A	N/A	

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use	Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Chromium VI	11 µg/L A&Ww chronic	002: No Data	0	N/A	No RP (Based on total chromium data)	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		No Data	0	N/A	RP Indeterminate (No Data)	
		No Data	0	N/A	No RP (Based on total chromium data)	
		No Data	0	N/A	RP Indeterminate (No Data)	
		No Data	0	N/A	No RP (Based on total chromium data)	
Copper (2)	002: 18 µg/L A&Ww chronic	<10 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 004, and 006 for discharge characterization. Monitoring is required and a WQBEL remains in the permit for Outfalls 003 and 005.
	003: 16 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 16 µg/L A&Ww chronic	<10 µg/L	1	N/A	No RP	
	005: 25 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 21 µg/L A&Ww chronic	<10 µg/L	1	N/A	No RP	
Cyanide	9.7 µg/L A&Ww chronic	002: <5 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: <5 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: <5 µg/L	1	N/A	No RP	

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use	Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Hardness	No applicable standard. Hardness is used to determine standards for specific metal parameters.	002: 225 mg/L	1	N/A	N/A	A&W standards for cadmium, chromium III, copper, lead, nickel, silver and zinc used for RP determinations were based on the average discharge hardness value of 225 mg/L (Outfall 002), 201 mg/L (Outfall 003 – average from when outfall was last in use from 2008-2012), 192 mg/L (Outfall 004), 337 mg/L (Outfall 005– average from when outfall was last in use from 2008-2012), and 273 mg/L (Outfall 006). Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
		003: No Data	0			
		004: 192 mg/L	1			
		005: No Data	0			
		006: 273 mg/L	1			
Iron	1,000 ug/L A&Ww chronic	002: <100 µg/L	1	N/A	No RP	Monitoring is required at Outfalls 002 and 006 for discharge characterizations. Monitoring required at Outfall 004 and a WQBEL remains in the permit. Monitoring required at Outfalls 003 and 005 and an assessment level remains in the permit.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: 513 µg/L	17	1855 µg/L	RP Exists	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: <100 µg/L	1	N/A	No RP	
Lead (2)	002: 6.01 µg/L A&Ww chronic	<5 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 004, and 006 for discharge characterization. Monitoring is required and a WQBEL remains in the permit for Outfalls 003 and 005.
	003: 5.33 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 5.08 µg/L A&Ww chronic	<5 µg/L	1	N/A	No RP	
	005: 9.17 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 7.37 µg/L A&Ww chronic	<5 µg/L	1	N/A	No RP	

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use	Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Mercury	0.01 µg/L A&Ww chronic	002: <0.2 µg/L	1	N/A	RP Indeterminate (High LOQ)	Monitoring required and an assessment level is set for Outfalls 002, 003, 004, 005, and 006.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: <0.2 µg/L	1	N/A	RP Indeterminate (High LOQ)	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: <0.2 µg/L	1	N/A	RP Indeterminate (High LOQ)	
Nickel (2)	002: 103 µg/L A&Ww chronic	<20 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
	003: 93.9 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	004: 90.3 µg/L A&Ww chronic	<20 µg/L	1	N/A	No RP	
	005: 145 µg/L A&Ww chronic	No Data	0	N/A	RP Indeterminate (No Data)	
	006: 122 µg/L A&Ww chronic	<20 µg/L	1	N/A	No RP	
Selenium	2 µg/L A&Ww chronic	002: <5 µg/L	16	N/A	RP Indeterminate (High LOQ)	Monitoring required at Outfalls 003 and 004 for discharge characterization. Monitoring required and a WQBEL remains in the permit for Outfalls 002, 005, and 006.
		003: No Data	0	N/A	RP Indeterminate (No Data)	
		004: <2 µg/L	1	N/A	No RP	
		005: No Data	0	N/A	RP Indeterminate (No Data)	
		006: <5 µg/L	16	N/A	RP Indeterminate (High LOQ)	

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use		Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
Silver (2)	002: 13.0 µg/L A&Ww acute		<5 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
	003: 10.7 µg/L A&Ww acute		No Data	0	N/A	RP Indeterminate (No Data)	
	004: 9.88 µg/L A&Ww acute		<5 µg/L	1	N/A	No RP	
	005: 26.0 µg/L A&Ww acute		No Data	0	N/A	RP Indeterminate (No Data)	
	006: 18.1 µg/L A&Ww acute		<5 µg/L	1	N/A	No RP	
Thallium	7.2 µg/L FC		002: <5 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
			003: No Data	0	N/A	RP Indeterminate (No Data)	
			004: <5 µg/L	1	N/A	No RP	
			005: No Data	0	N/A	RP Indeterminate (No Data)	
			006: <5 µg/L	1	N/A	No RP	
Zinc (2)	002: 233 µg/L A&Ww acute and chronic		<60 µg/L	1	N/A	No RP	Monitoring required at Outfalls 002, 003, 004, 005, and 006 for discharge characterization.
	003: 212 µg/L A&Ww acute and chronic		003: No Data	0	N/A	RP Indeterminate (No Data)	
	004: 204 µg/L A&Ww acute and chronic		<60 µg/L	1	N/A	No RP	
	005: 328 µg/L A&Ww acute and chronic		006: No Data	0	N/A	RP Indeterminate (No Data)	
	006: 274 µg/L A&Ww acute and chronic		<60 µg/L	1	N/A	No RP	
Whole Effluent Toxicity (WET)	No toxicity (A.A.C. R18-11-108(A) (6)	*Pseudo-kirchneriella subcapitata (3)*	002: 1 TUc	2	N/A	RP Indeterminate (4)	Monitoring required and an action levels remain in permit for Outfalls 002, 003, 004, 005, and 006.
			003: No Data	0			
			004: 1 TUc	2			
			005: No Data	0			
			006: 1 TUc	2			

Table 1. Permit limitations and monitoring requirements.

Parameter	Lowest Standard/Designated Use		Maximum Reported Daily Value	No. of Samples	Critical effluent concentration	RP Determination	Proposed Monitoring Requirement/Rationale (1)
		Pimephales promelas	002: 1 TUc	2	N/A	RP Indeterminate (4)	Monitoring required and an action levels remain in permit for Outfalls 002, 003, 004, 005, and 006.
			003: No Data	0			
			004: 1 TUc	2			
			005: No Data	0			
			006: 1 TUc	2			
		Ceriodaphnia dubia	002: 1 TUc	2	N/A	RP Indeterminate (4)	Monitoring required and an action levels remain in permit for Outfalls 002, 003, 004, 005, and 006.
			003: No Data	0			
			004: 1 TUc	2			
			005: No Data	0			
			006: 1 TUc	2			

Footnotes:

1. The monitoring frequencies are as specified in the permit.
2 Hardness-dependent metal - the standard is for this parameter is based on the average hardness value of the discharge as indicated above.
3 Formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata.*
4 Monitoring with ALs or Action Levels always required for WWTPs for these parameters unless RP exists and limits are set.

VIII. NARRATIVE WATER QUALITY STANDARDS

All narrative limitations in A.A.C. R18-11-108 that are applicable to the receiving water are included in Part I, Section E of the permit.

IX. MONITORING AND REPORTING REQUIREMENTS (Part II of Permit)

Section 308 of the Clean Water Act and 40 CFR Part 122.44(i) require that monitoring be included in permits to determine compliance with discharge limitations. Additionally, monitoring may be required to gather data for future discharge limitations or to monitor discharge impacts on receiving water quality.

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Monitoring frequencies for some parameters may be reduced in subsequent permits if all monitoring requirements have been met and the limits or ALs for those parameters have not been exceeded during the first permit term.

Discrete (i.e., grab) samples are specified in the permit for all parameters. The quality of the discharge is not expected to be highly variable.

Monitoring locations are specified in the permit (Part I.A and Part II.A) in order to ensure that representative samples of the discharge are consistently obtained.

The requirements in the permit pertaining to Part II, Monitoring and Reporting, are included to ensure that the monitoring data submitted under this permit is accurate in accordance with 40 CFR 122.41(e). The permittee has the responsibility to determine that all data collected for purposes of this permit meet the requirements specified in this permit and is collected, analyzed, and properly reported to ADEQ.

The permit (Part II.A.3) requires the permittee to keep a Quality Assurance (QA) manual at the facility, describing sample collection and analysis processes; the required elements of the QA manual are outlined.

Reporting requirements for monitoring results are detailed in Part II, Section B of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs).

The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.

Electronic reporting

The US EPA has published a final regulation that requires electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination System (NPDES) program information instead of the current paper-based reporting (Federal Register, Vol. 80, No. 204, October 22, 2015). Beginning December 21, 2016 (one year after the effective date of the regulation), the Federal rule required permittees to make electronic submittals of any monitoring reports and forms called for in their permits. ADEQ has created an online portal called myDEQ that allows users to submit their discharge monitoring reports and other applicable reports required in the permit.

Requirements for retention of monitoring records are detailed in Part II.D.1 of the permit.

X. SPECIAL CONDITIONS (Part IV in Permit)

Best Management Practices (BMP) Plan

The permittee was required to develop and implement a BMP Plan prior to commencement of discharge. The BMP Plan, prepared in accordance with good engineering practices, shall address application of pesticides, herbicides, and fertilizers in the habitat. Additionally, it shall address pollutants from sources other than the groundwater supply. A copy of the plan was submitted to and reviewed by ADEQ. The permittee shall update or amend the plan, as appropriate, prior to a change in design, construction, operation or maintenance activity which could have a significant effect on the quality of discharge or if the plan proves ineffective in achieving compliance with this permit. The permittee shall retain a copy of the plan and this permit language at the discharge site for use by all operators.

Mitigation Prior to Discharge

In order to prevent discharge of pumped water that exceeds the applicable limits or assessment levels established in the permit, the permittee is required to implement, when necessary, a mitigation program which may include blending water from two or more wells before discharge or removing wells from service. The mitigation program shall be initiated when the concentration of any of the parameters exceeds the corresponding limit or assessment level two consecutive times as follows:

a. If concentration of a parameter in the pumped water exceeds the monthly average permit limit or assessment level, the permittee shall initiate additional sampling within five (5) calendar days of becoming aware of the exceedance.

b. If the additional sampling results within any calendar month also exceeds the permit limit or assessment level, discharge from the affected supply well(s) shall be stopped until a mitigation program is implemented and further samplings show no additional exceedances.

c. Once the mitigation program has been initiated, frequency of monitoring for the affected parameter(s) shall be increased to once every two weeks until a minimum of three consecutive monthly averages show no more exceedances. The permittee may then return to the original monitoring frequency as required in the permit.

d. To resume pumping (i.e., discharging from) the affected supply well(s) directly (without treatment or blending) to any of the reservoirs, a minimum of three consecutive monthly averages at wellhead(s) must show no exceedance of the permit limit or assessment level for the affected parameter.

e. In addition, if chlorine is used as part of the mitigation program, a groundwater sample must be collected from the well(s) and analyzed for TRC prior to discharging from the outfall(s). Discharge from the outfall(s) shall not occur if TRC is detected above the reporting limit using an ADHS-approved analytical method (use of an ultra-low-level method is not required). The TRC monitoring results shall be provided as a part of the mitigation report.

f. When the implementation of a mitigation program becomes necessary (as described above), the permittee shall notify ADEQ in writing by submitting a copy of the program along with any reports and analytical results required by this Part, to the following address: Arizona Department of Environmental Quality, AZPDES@azdeq.gov.

Permit Reopener

This permit may be modified based on newly available information; to add conditions or limits to address demonstrated discharge toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if assessment levels in this permit are exceeded [A.A.C. R18-9-B906 and 40 CFR Part 122.62 (a) and (b)].

XI. ANTIDEGRADATION

Antidegradation rules have been established under A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. The discharge from the Rio Salado Habitat Restoration Area will be to a perennial water with Tier 2 antidegradation protection. This is a renewal permit for an existing facility with no new or expanded discharge, and the existing uses have been maintained. Therefore, an antidegradation review is not required at this time. Discharge quality limitations and monitoring requirements have been established under the proposed permit to ensure that the discharge will meet the applicable water quality standards. As long as the permittee maintains consistent compliance with these provisions, the designated uses of the receiving water will be presumed protected, and the facility will be deemed to meet currently applicable antidegradation requirements under A.A.C. R18-11-107.

XII. STANDARD CONDITIONS

Conditions applicable to all NPDES permits in accordance with 40 CFR, Part 122 are attached as an appendix to this permit.

XIII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-A907)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft AZPDES permit or other significant action with respect to an AZPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908)

Rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C R18-9-A908(B))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

EPA Review (A.A.C. R18-9-A908(C))

A copy of this permit and any revisions made to this draft as a result of public comments received will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

XIV. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division – Surface Water Permits Unit
Attn: Rachel Heinz
1110 West Washington Street
Phoenix, Arizona 85007

Or by contacting Rachel Heinz at (602) 771 – 0180 or by e-mail at heinz.rachel@azdeq.gov.

XV. INFORMATION SOURCES

While developing discharge limitations, monitoring requirements, and special conditions for the permit, the following information sources were used:

1. AZPDES Permit Application Forms 1 and 2C, received February 28, 2023, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.
2. Supplemental information to the application received by ADEQ on April 21, 2023.
3. ADEQ files on Rio Salado Habitat Restoration Area.
4. ADEQ Geographic Information System (GIS) Web site
5. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted December 31, 2016.
6. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.
7. Code of Federal Regulations (CFR) Title 40:

   Part 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.*

   Part 124, *Procedures for Decision Making*.

   Part 133. *Secondary Treatment Regulation.*

   Part 503. *Standards for the Use or Disposal of Sewage Sludge*.

8. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.
9. *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, US EPA, May 31, 1996.
10. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA /821-R-02-013).
11. U.S. EPA NPDES Permit Writers' Manual, September 2010.
12. *The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion*, US EPA, June 1996.
13. *Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies*, US EPA, April 1996.