ADEQ Arizona Department of Environmental Quality

Clean Air, Safe Water
Healthy Land for Everyone

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 groundwater remediation project that scored 75 points on the National Pollutant Discharge Elimination System (NPDES) Permit Rating Criteria worksheet, which is below the 80-point threshold for classification as a major discharger; therefore, the facility is classified as a minor discharger under the AZPDES program. The effluent 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 five (5) years.

I. PERMITTEE INFORMATION	
Permittee name	Tucson Water
Permittee mailing address	4401 South Tucson Estates Parkway Tucson, AZ 85735
Facility name	Tucson Airport Area Remediation Project (TARP) Water Treatment Plant (WTP)
Facility address or location	1102 West Irvington Road Tucson, AZ 85714
County	Pima County
Contact person name Phone Email address	Chad Lapora, Water Administrator, Water Quality Division (520) 419-0821 Chad.Lapora@tucsonaz.gov
AZPDES permit number	AZ0026417
Inventory number	513665
LTF number	116062

II. STATUS OF PERMIT(s)	
AZPDES permit applied for	Renewal
Date application received	May 1, 2026
Date application determined administratively complete	June 22, 2026
Previous permit number (if different)	N/A
Previous permit expiration date	October 31, 2026

DRAFT

II. STATUS OF PERMIT(s)

208 Consistency:

Under Section 208 of the Clean Water Act, Designated Planning Agencies are required to develop comprehensive water quality management plans, commonly referred to as 208 Plans. In accordance with A.A.C. R18-9-A903(6), a permit cannot be issued for a discharge inconsistent with the governing 208 Plan or plan amendment approved under section 208(b) of the Clean Water Act.

The Pima Association of Governments (PAG) Areawide Water Quality Management Plan (208 Plan) encourages the remediation and beneficial use of contaminated groundwater. During the previous permit issuance, PAG determined that issuance of the permit was not inconsistent with the 208 Plan, and ADEQ concurred with that determination. The permittee has submitted an application to renew the existing AZPDES permit, and no changes are proposed that would affect the previous 208 consistency determination. The notification requirements included in the current permit to address concerns raised by PAG, Pima County, and the Town of Marana regarding certain PFAS levels have been retained in the proposed permit. Based on the previous consistency determination and the information provided in the renewal application, ADEQ has determined that reissuance of the permit is not inconsistent with the applicable 208 Plan.

Based on the information provided in the renewal application, Tucson Water did not identify any other ADEQ-issued permits applicable to the Tucson Airport Remediation project (TARP) WTP.

III. GENERAL FACILITY INFORMATION

Type of facility	Groundwater Remediation Water Treatment Plant (WTP)
Facility location description	The facility is in Tucson, Pima County, Arizona, east of the Santa Cruz River and north of its confluence with the West Branch Santa Cruz River. Coordinates in Decimal Degrees: [32.1689, -110. 9898]
Discharge flow	10.2 million gallons per day (MGD)
Applicable treatment processes	Treatment processes include sediment removal, hydrogen peroxide addition, ion exchange treatment for PFAS removal, ultraviolet advanced oxidation process (UV AOP), and granular activated carbon (GAC) contactors. The ion exchange treatment system is located upstream of the UV AOP system and is currently operational. Chlorination is available for flows conveyed to the reclaimed water system (RWS), when required.
Nature of facility discharge	Treated groundwater generated from the extraction and remediation of contaminated groundwater associated with the TARP.
Continuous or intermittent discharge	Continuous

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III. GENERAL FACILITY INFORMATION	
Discharge pattern summary	Treated groundwater is discharged as a part of the ongoing operation of the TARP groundwater remediation system to maintain hydraulic containment of the groundwater contamination plume. Treated water may be discharged to the receiving water or conveyed to the reclaimed water system, depending on operational needs.
The TARP WTP operates in accordance with a 1991 Consent Decree with the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Tucson Water has operated the TARP WTP since September 1994. The facility was initially constructed to address volatile organic compounds (VOCs), principally trichloroethene (TCE). Treatment process upgrades over the past two decades have expanded the facility's treatment capabilities to address 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). Treated groundwater is conveyed to the City of Tucson recycled water system for non-potable uses and discharged to the Santa Cruz River for managed groundwater recharge, which began in November 2021.	

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 United States Protected Surface Water (WOTUS PSW) for TARP WTP is the Santa Cruz River. This is a surface water listed in A.A.C. R18-11 Appendix B. The applicable receiving water segment is the Santa Cruz River from Tubac Bridge to Agua Nueva WRF at 32° 17' 04" N/ 111° 01' 45" W.
Waterbody ID (WBID)	Outfall 001: 15050301-005B
River basin	Santa Cruz River Basin
Outfall location	Outfall 001: Township 14 S, Range 13 E, Section 35 Latitude 32° 10' 08" N, Longitude 110° 59' 23.35" W Coordinates in Decimal Degrees: [32.1689, -110.9898]
Designated uses for the receiving water listed above	Aquatic and Wildlife ephemeral (A&We) Partial Body Contact (PBC) Agricultural Livestock watering (AgL)
Per A.A.C. R18-11-113(D), the water quality standards that apply to effluent-dependent waters (EDWs) will be applied to derive discharge limitations for any point source discharge of wastewater to an ephemeral water. The AZPDES permit includes discharge limitations and monitoring requirements designed to achieve compliance with A&Wedw standards. Therefore, the following uses are applied to the receiving water: • Aquatic and Wildlife effluent dependent water (A&Wedw) • Partial Body Contact (PBC) • Agricultural Livestock watering (AgL)	

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Is the receiving water on the Clean Water Act section 303(d) list of impaired waters?	No. The receiving water is not listed on the Clean Water Act Section 303(d) List, and there are no associated Total Maximum Daily Loads (TMDLs).

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. Permit limits are developed to meet technology-based requirements consistent with 40 CFR 125.3(a) and, when necessary, additional water quality-based effluent limitations to ensure protection of all applicable designated uses.

V. DESCRIPTION OF DISCHARGE

Because the facility is in operation and discharges have occurred, effluent monitoring data are available. The following is the measured effluent quality reported in the application.

Parameters	Units	Maximum Daily Discharge Concentration
Arsenic	mg/L	0.0054
Barium	mg/L	0.07
Chromium, Total	mg/L	0.0058
Chloroform	mg/L	0.00054
Cyanide, Total	mg/L	0.0056
Fluoride	mg/L	0.79
Hardness ($CaCO_3$)	mg/L	281
pH	S.U.	7.9
PFOA	µg/L	< 0.002
PFOS	µg/L	< 0.002
Selenium	mg/L	0.0026
Temperature	°C	25.7
Total Organic Carbon (TOC)	mg/L	0.44
Total Suspended Solids (TSS)	mg/L	< 1
Trichloroethylene (TCE)	mg/L	< 0.0005

VI. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT

Date of most recent inspection	June 24, 2026; no potential violations were noted as a result of this inspection.
Discharge Monitoring Reports (DMR) reviewed	December 2021 through August 2026

DRAFT

Lab reports reviewed	December 2021 through August 2026
Notice(s) of Violation (NOV) issued	None
NOVs closed	N/A
Formal enforcement action(s)	None

VII. SUMMARY OF PERMIT CHANGES

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

Parameter	Previous Permit	New Permit	Reason for Change
Noncompliance Reporting	(602) 771-2330	Noncompliance events resulting in imminent threat to human health or the environment must be reported to (602) 771-2330, while all other noncompliance events must be reported to (602) 771-1440.	Routing emergency noncompliance events to the Emergency Response Unit, but all other noncompliance events to a non-emergency number.
Reporting Method for Effluent Characterization (EC) Monitoring	Submit test results electronically in DMRs.	Submit test results electronically in DMRs. Attach certified laboratory reports for monitoring performed during the reporting period to the DMR (including "No Discharge" DMR). Submit test results on the Data Form provided by ADEQ for permit renewal or modification. See Part I.D.2 and Part II.B.3 of the permit.	ADEQ is implementing a new requirement through prescriptive permit language to ensure clear compliance expectations for both the agency and permittees, particularly regarding reporting for monitoring periods when a facility is not discharging. This initiative aims to streamline data processing, decrease cost, and enhance the overall quality of data review, as outlined in the ADEQ *Surface Water Protection Quality Assurance Program Plan* (2022).

DRAFT

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Sufficiently Sensitive Test Methods and Limit of Quantitation (LOQ) Reporting Requirements	Limited explanation of analytical requirements for LOQ and sufficiently sensitive test methods.	Analytical test sensitivity requirements are specified in the footnotes of Part I Tables 1-4 of the permit and associated definitions in Appendix A Part B. The requirement to use sufficiently sensitive test methods is specified in Part II.A.5.	The Limit of Quantitation (LOQ) must be low enough to allow comparison of the results to the applicable water quality standards (WQS) to be protective of the receiving water designated uses. New language clarifies the requirement that parameters must be analyzed using sufficiently sensitive test methods in accordance with 40 CFR 136.1(c).
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.	Water quality-based effluent limitations (WQBELs) and assessment levels (ALs) were converted from dissolved to total recoverable using the process from the EPA's *The Metals Translator: Guidance for Calculating A Total Recoverable Permit Limit from A Dissolved Criterion*.	Metal toxicity to aquatic life is primarily determined by the dissolved concentration for which WQS are established. To set total recoverable WQBELs as required by 40 CFR §122.45(c) while protecting the dissolved WQS, a metal translator is used. The translator is the fraction of total recoverable metal in the downstream water that is dissolved. ADEQ uses a conservative translator of 1 to determine reasonable potential (RP), assuming all metal is dissolved. If RP exists, the WQBEL is calculated by applying EPA's default metal translator. The use of EPA's default metal translator to calculate WQBELs is both protective of receiving water quality and less stringent for the permittee than the previous practice of using a translator of 1 by accounting for the portion of total recoverable metal that is not dissolved.

DRAFT

VII. SUMMARY OF PERMIT CHANGES			
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Parameter	**Previous Permit**	**New Permit**	**Reason for Change**
Whole Effluent Toxicity (WET) Data Evaluation and Reporting	Calculation of the no observed effect concentration (NOEC) and the 25% inhibition effect concentration (IC25). Report results on the DMR as Pass (0) / Fail (1) for acute tests and 100/NOEC result in toxicity units (TUc) for chronic tests. An exceedance was any one test result greater than 1.6 TUc or any calculated monthly median value greater than 1.0 TUc or a Fail.	Pass and Fail results are declared by comparing percent effect (PE) to the regulatory management decision (RMD) threshold established for the test. For acute tests, report results as Pass (0) / Fail (1) on the DMR. For chronic tests, report Pass (0) / Fail (1) and report the PE on the DMR.	WET test results must now be analyzed and reported using the Test for Significant Toxicity (TST). This statistical approach detailed in EPA's 2010 "National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document" (EPA-833-R-10-004) encourages the generation of higher quality WET data through increased within-test replicates or improved method precision. The TST ultimately minimizes false negative and positive results leading to more reliable data for regulatory decision-making.
WET Reporting	Certified laboratory reports must be submitted as attachments to the DMR for the monitoring period. No specific requirement to email the certified laboratory report to ADEQ.	Certified laboratory reports must be submitted as attachments to the DMR for the monitoring period. Laboratory reports with a Fail test result shall be emailed to AZPDES@azdeq.gov within five (5) days of receipt.	Prompt notification to ADEQ is crucial for protecting aquatic and wildlife when toxicity is detected during action level or limitations monitoring. This new requirement for notification ensures that all necessary follow-up testing is conducted as required by the permit.
Toxicity Reduction Evaluation (TRE) Plan	TRE Plan developed following detection of effluent toxicity.	TRE Plan developed within 90 days of permit effective date. This is required regardless of whether effluent toxicity has been detected or not. Use the template supplied by ADEQ. See Part IV of the permit.	Permittees may be required to execute a TRE Plan to address effluent toxicity issues. To facilitate timely response to the detection of effluent toxicity, permittees will proactively develop a plan to identify and eliminate the cause of toxicity. This enables a timely response to protect aquatic and wildlife designated uses.

DRAFT

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Parameter	**Previous Permit**	**New Permit**	**Reason for Change**
Narrative Surface Water Quality Standards	Narrative surface water quality standards applicable to the receiving water listed in Part I.E of the permit.	Narrative requirements for the effluent are listed in Part I.E of the permit to ensure the discharge is protective of the narrative surface water quality standards of the receiving water.	ADEQ is clarifying that all narrative permit requirements are applicable to the discharge rather than the "end result" in the receiving water in accordance with *City and County of San Francisco, California v. Environmental Protection Agency.*
Biochemical Oxygen Demand (BOD) & Chemical Oxygen Demand (COD)	Monitoring not required	Discharge characterization (DC) monitoring required See Table 4.a of the permit	No quantitative data provided in the application, although at least one analysis is required under 40 CFR §122.21. Monitoring is indicated to characterize the discharge and confirm the absence of organic loading. Based on the nature of groundwater treated and the treatment process, these parameters are not expected to be present at significant levels; however, data are required to confirm this assumption, consistent with 40 CFR §122.44(i).
Ammonia and Ammonia Impact Ratio (AIR)	Monitoring not required	DC monitoring required	No quantitative data provided in the application, although at least one analysis is required under 40 CFR §122.21. The parameter is subject to applicable water quality standards; therefore, monitoring is included to characterize the discharge and support future reasonable potential (RP) evaluation, consistent with 40 CFR §122.44(d)(1) and 122.44(i). The AIR is a trackable numeric value. See Section VIII for details

DRAFT

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Parameter	**Previous Permit**	**New Permit**	**Reason for Change**
Dissolved Oxygen, *E. coli*, Nitrate/Nitrite (as N), Total Kjeldahl Nitrogen (TKN), Oil & Grease, and Phosphorus	Monitoring not required	DC monitoring required See Table 4.a of the permit.	ADEQ now requires all minor industrial facilities to monitor for all general chemistry and microbiology parameters in Table 4.a to characterize the discharge. This update aligns the permit with standard monitoring requirements applied to minor facilities of similar size and discharge type within the state.
Perfluorooctanesulfonic Acid (PFOS) & Perfluorooctanoic Acid (PFOA)	Effluent limitation based on EPA's 2016 Health Advisory Level (HAL) of 70 ng/L (nanograms per liter) combined	Monitoring only (no effluent limitation) See Table 1 of the permit	The prior limit was based on U.S. EPA HAL guidance, which is non-regulatory and not developed as an enforceable water quality standard under the Clean Water Act (CWA). The limit was not derived using standard WQBEL procedures (40 CFR 122.44(d)(1)) and is not supported by applicable effluent limitation guidelines (ELGs). Based on new information, including improved analytical methods and additional monitoring data, ADEQ has determined that a monitoring-based approach is appropriate to characterize PFAS and support future regulatory decisions.
Effluent Limit and Assessment Level Structure (General)	Daily maximum limits only; assessment levels also expressed as daily maximum values only	Monthly average and daily maximum limits; assessment levels expressed as monthly average and daily maximum values See Tables 1 and 2 of the permit.	Updated evaluation indicates the need to control both short-term (acute) and long-term(chronic) impacts. Inclusion of monthly average limits for effluent limits and assessment levels ensures protection of designated uses (A&Wedw and PBC) and better characterizes variability in the discharge over time. This approach is consistent with the Clean Water Act, including 40 CFR §122.44 (d)(1) and 40 CFR §122.45 (d) which require control of both acute and chronic impacts using appropriate averaging periods.

DRAFT

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Parameter	Previous Permit	New Permit	Reason for Change
pH	Monitoring only	Discharge limitation and monitoring required See Table 1 of the permit.	The permit was reevaluated during renewal using the current permitting approach. A pH discharge limitation is established based on the applicable surface water quality criterion to ensure compliance with the applicable water quality standard.
Antimony, Beryllium, Cadmium, Chromium total, Chromium VI, Iron, Mercury, Lead, Nickel, Silver, and Thallium	Assessment level	Discharge Characterization See Table 4.b of the permit.	Data submitted indicated no reasonable potential (RP) for an exceedance of a standard.
Copper	Discharge Characterization	Assessment level and monitoring required	Limited detected discharge data are available, and reporting limits for non-detect results are above the applicable hardness-based copper criterion. An assessment level and monitoring are established to obtain sufficient and representative data to support future reasonable potential evaluations.
Barium, Boron, Fluoride, Manganese, and Uranium	No monitoring required	Discharge characterization testing See Table 4.b of permit	Applicable numeric water quality standards exist for these parameters based on the designated used of the receiving water. Discharge characterization monitoring is established to obtain representative discharge data for comparison with the applicable water quality standards and to support reasonable potential determinations pursuant to 40 CFR §122.44(d)(1).
Selenium	Assessment level	Discharge limitation See Table 1 of the permit	Data submitted indicated RP for an exceedance of a standard.

DRAFT

VII. SUMMARY OF PERMIT CHANGES			
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Parameter	**Previous Permit**	**New Permit**	**Reason for Change**
Hydrogen sulfide and Sulfides	Assessment level	Assessment level with corresponding DC testing requirements See Table 4.b of the permit.	Inclusion of discharge characterization monitoring for all assessment levels whether the facility is discharging or not ensures sufficient data is available to calculate RP for the discharge to cause or contribute to an excursion of a standard.
Total Organic Carbon (TOC)	No monitoring required	Discharge characterization testing See Table 4.a of the permit	Monitoring is established to characterize the discharge and provide representative discharge data for permit renewal and RP evaluations, consistent with 40 CFR §122.21(g)(7)(iii) and 40 CFR §122.44(d)(1).
WET Monitoring Frequencies	Action Levels: 1x/year DC: 3x/permit term	Action Levels and DC: 4x/permit term See Tables 3 and 4.b of the permit	Monitoring frequency is based on tiers established for design flow to 1) obtain sufficient data to protect surface water quality and 2) set monitoring requirements consistently among permitted discharges. Monitoring frequency is updated to match this facility's design flow tier.

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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 National Pollutant Discharge Elimination System (NPDES) permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes identify exceptions to these circumstances where backsliding is acceptable. This permit has been drafted with consideration of anti-backsliding requirements. Discharge Limitations for the following parameters(s) have been removed, and monitoring requirements have been retained:

- Combined Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA)

The effluent limitation in the previous permit for these parameters were expressed as the combined concentration of PFOS and PFOA and was based on the U.S. Environmental Protection Agency's HAL values. HALs are non-regulatory guidance and were not developed using Clean Water Act methodologies, including WQBEL procedures under 40 CFR §122.44(d)(1). At the time of permit reissuance, there are no applicable promulgated water quality standards or effluent limitation guidelines for PFAS under the Clean Water Act.

Since issuance of the previous permit, additional facility-specific monitoring data and advancements in analytical methods have become available, supporting a monitoring-based approach to further characterize PFAS occurrence and concentrations in the discharge. This revision is consistent with 40 CFR §122.44(l)(2)(i)(B), which allows for less stringent effluent limitations where new information demonstrates that the previous limits are no longer necessary to ensure compliance with applicable requirements.

Although effluent limitations have been removed, monitoring for PFOA and PFOS is retained in accordance with 40 CFR §122.44(i) to characterize the discharge, evaluate variability, and support future permitting decisions. Continued monitoring will provide information necessary to assess potential impacts to receiving waters and to inform future permit conditions as analytical methods and regulatory frameworks for PFAS continue to evolve. This approach is also consistent with antidegradation requirements; see Section XII for additional information.

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

VIII. DETERMINATION OF EFFLUENT LIMITATIONS, OTHER LIMITATIONS, AND ASSESSMENT LEVELS

To determine monitoring requirements and/or limits for this permit, ADEQ compared both technology-based and water quality-based criteria and applied the more stringent criteria.

Technology-based Limitations:
Technology-based effluent limitations (TBELs) are established in accordance with the Clean Water Act (CWA) and implementing regulations at 40 CFR 125.3, based on applicable effluent limitation guidelines (ELGs) or Best Professional Judgement (BPJ) where ELGs have not been promulgated.

For per- and polyfluoroalkyl substances (PFAS), including PFOA and PFOS, no federal ELGs have been promulgated for the treatment category applicable to this facility. Therefore, TBELs cannot be established based on national categorial standards.

In the absence of ELGs, ADEQ evaluated whether TBELs could be developed using Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3(c). At this time, sufficient information is not available to establish defensible TBELs for PFAS. Specifically:

- There are no established treatment performance standards or technology-based benchmarks applicable to PFAS under the Clean Water Act (CWA).

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- PFAS treatment effectiveness varies depending on site-specific conditions and treatment technologies (e.g. granular activated carbon, ion exchange, reverse osmosis).
- Available information does not support development of consistent, enforceable technology-based limits applicable to this discharge.

Accordingly, TBELs for PFAS are not included in this permit.

Instead, the permit retained monitoring only for PFAS to characterize their presence and variability in the discharge and to support future evaluation of treatment performance and potential development of effluent limitations.

Water Quality-based Effluent Limitations:
Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), water quality-based effluent limitations (WQBELs) must be included in the permit for parameters with "reasonable potential" (RP); that is, parameters known to be or expected to be present in the effluent at a level that could potentially cause an exceedance of any applicable numeric water quality standard. 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 "highest estimated value." 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. The basis for the RP determination for each parameter with a WQBEL is shown in Table 1 below.

Ammonia is not expected to be generated by the treatment process; however, it may be present at low concentrations in the source groundwater. Therefore, ammonia monitoring is included to characterize the discharge and provide sufficient data to evaluate the Ammonia Impact Ratio (AIR) and determine whether the discharge exhibits RP to cause or contribute to an exceedance of applicable water quality standards. The AIR is calculated by dividing the ammonia concentration in the effluent by the applicable ammonia standard based on the discharge pH and temperature at the time of sampling. Calculated AIR values will be reported on Discharge Monitoring Reports (DMRs) and also documented on the Ammonia Data Log which is included as Appendix B in the permit.

ADEQ established the proposed WQBELs using a methodology developed by EPA and described in Chapter 5 of the *TSD*. ADEQ calculated long term averages (LTAs) for each designated use and used the lowest LTA to calculate the average monthly limit (AML) and maximum daily limit (MDL) necessary to protect all uses. This methodology considers water quality criteria, effluent variability, and the number of observations taken to determine compliance with prescribed limits. ADEQ developed limits based on A&W criteria using the "two-value steady state wasteload allocation" model described on page 99 of the *TSD*. When the limit is based on human health criteria, ADEQ set the AML at the level of the applicable standard and determined the MDL as specified in Sections 5.4.4 and 5.5.3 of the *TSD*.

Mixing Zone:
Arizona 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 the receiving stream for this discharge is ephemeral prior to the discharge, no water is available for a mixing zone, and all water quality criteria are applied at end-of pipe. This means that the effluent concentration must meet stream standards.

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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. Rather, ALs serve as triggers, alerting the permitting authority when there is cause for re-evaluation of RP for exceeding a water quality standard. The AL numeric values also serve to advise the permittee of the analytical sensitivity needed for meaningful data collection. ADEQ requires trace substance monitoring 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. The permit includes a reopener clause 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" section above.

Expression of Effluent Limitations (Concentration-Based vs. Mass-Based Limits):
Effluent limitations in this permit are expressed as concentration-based limits. Although 40 CFR §122.45(f) generally requires effluent limits to be expressed in terms of mass, ADEQ has determined that mass-based limits are not necessary for this discharge.

The facility is a groundwater remediation system with relatively consistent and controlled flow, and pollutant loading is primarily driven by influent groundwater concentrations rather than variable discharge conditions. As such, concentration-based limits are sufficient to ensure compliance with applicable water quality standards and to protect the designated uses of the receiving water.

These effluent limitations are water quality-based effluent limits (WQBELs) derived from applicable surface water quality standards associated with the designated uses of receiving water, consistent with 40 CFR §122.44(d)(1). Since the applicable standards are expressed in terms of concentration, the corresponding effluent limits are appropriately expressed as concentration-based limits.

In this context, inclusion of mass-based limits would not provide additional environmental benefit beyond that achieved through concentration-based limits. Therefore, effluent limitations are appropriately expressed in terms of concentration in this permit.

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. ADEQ used the hardness value of 250 mg/L (the average hardness of the effluent as supplied in the application) to calculate the applicable water quality standards, assessment levels, and 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 IV) 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

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ADEQ requires the permittee to analyze WET test data using the Test of Significant Toxicity (TST) statistical approach. This statistical approach is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010; TST Implementation Document) and *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-004, 2010; TST Technical Document). This statistical approach supports important choices made within a toxicity laboratory which support the correct classification of effluents as non-toxic. For both acute and chronic WET test methods, the low-risk Regulatory Management Decision (RMD) threshold is set at a 10 percent mean effect at the Instream-Waste Concentration (IWC). For mean effect levels greater than 10 percent but less than the unacceptable toxicity RMD threshold (20 percent for acute and 25 percent for chronic WET tests), the TST approach will declare the IWC non-toxic depending on within-test variability. The TST maintains ADEQ's desired low false positive rate for WET methods when quality toxicity laboratories conduct toxicity tests (EPA 833-R-10-004, 2010).

ADEQ analyzed the available data and determined that the discharge does not have reasonable potential (RP) for unacceptable levels of toxicity to *Pimephales promelas* (fathead minnow) and *Selenastrum capricornutum* but does have RP for unacceptable levels of toxicity to *Ceriodaphnia dubia* (water flea). This is because no toxicity test result for *Pimephales promelas* (fathead minnow) or *Selenastrum capricornutum* is Fail (1) and no associated PE (Percent Effect) value is ≥ 10 (see Table 1 of this fact sheet and section 1.4 and Appendix E in EPA's TST Technical Document). However, at least one toxicity test result for *Ceriodaphnia dubia* (water flea) is Fail (1) or at least one associated PE value is ≥ 10, indicating unacceptable toxicity is present in the effluent. ADEQ has retained the requirement to monitor and report toxicity with action levels, so that effluent toxicity can be assessed in relation to Clean Water Act (CWA) requirements for the permitted discharge (see Part I.C of the permit).

Any failed test during a monitoring period where discharge occurred 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) based on a TRE Plan drafted within 90 days of the permit effective date. A Toxicity Identification Evaluation (TIE) to identify the source of toxicity and decrease toxicity may also be required. The conditions described in this paragraph are required to identify and rectify sources of toxicity in discharges [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 determining the cause of toxicity if it is detected. Additional procedural requirements for the WET test are included in the permit.

The required WET monitoring frequency for this facility is consistent with the WET testing frequency required for facilities with a similar design flow. The permit requires WET test results to be reported on DMRs. WET laboratory reports for all WET tests performed must be attached to the corresponding DMR. When a WET limit is exceeded and the facility discharged during the monitoring period when the limit exceedance occurred, the result is subject to the Twenty-four Hour Reporting of Noncompliance requirements, per Part II.C. All action level and limit exceedance results and lab reports shall be emailed to AZPDES@azdeq.gov within five days of receipt.

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.b of the permit, *Discharge Characterization Testing,* as follows:

- Table 4.a—General Chemistry: Ammonia, BOD, COD, TOC, dissolved oxygen, PFOS / PFOA, pH, temperature, VOC's, total dissolved solids (TDS), and total suspended solids (TSS).
- Table 4.b—Selected Metals, Hardness, Cyanide, and WET

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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, EC monitoring of representative samples of the effluent is still required.

The purpose of DC monitoring is to characterize the effluent and determine if the parameters of concern are present in the discharge and at what levels. ADEQ will use this monitoring to assess RP per 40 CFR 122.44(d)(1)(iii)). DC 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, ADEQ may also reopen this permit to add related limits or conditions.

Permit Limitations and Monitoring Requirements:

Table 1 summarizes the parameters with effluent limitations or monitoring requirements, identifies those omitted from the permit, and explains the basis for these determinations. 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*, which have been adopted by reference in A.A.C. R18-9-A905, *AZPDES Program Standards*.

Trichloroethylene (TCE) and 1,4-Dioxane remain contaminants of concern associated with the TARP groundwater remediation and are addressed by EPA's 2023 Interim Record of Decision Amendment for the Tucson Airport Area Superfund Site. Although the reasonable potential analysis did not demonstrate reasonable potential for TCE to exceed the applicable PBC water quality criterion of 280 µg/L, the existing TCE effluent limitations of 5 µg/L and associated monitoring requirement are retained in the renewed permit. The previous permit identified the TCE limitation as protective of drinking water. The existing 1,4-Dioxane effluent limitation of 0.35 µg/L and associated monitoring requirement are also retained in the renewed permit.

DRAFT

Table 1. Permit Limitations and Monitoring Requirements.

Parameter	No. of Samples	Maximum Reported Concentration[1]	RP Multiplier [2]	Calculated Critical Concentration	Most Stringent Criterion	Most Stringent Criterion Basis[3]	Reasonable Potential Determination	Proposed Monitoring Requirement / Rationale[4]
Flow	- - -	- - -	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be monitored on a continual basis using a flow meter.
Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)	BOD: 0 COD: 0	No Data	N/A	N/A	N/A	N/A	N/A	Monitoring is required for discharge characterization.
Dissolved Oxygen	0	No Data	N/A	N/A	The percent saturation of dissolved oxygen is equal to or greater than 90 percent, or single sample **minimum** concentration of 3 mg/L from 3 hours after sunrise to sunset and 1 mg/L from sunset to 3 hours after sunrise	A&Wedw	RP Indeterminate **(No Data)**	Monitoring is required as a discrete sample for discharge characterization.
pH	18	7.9 S.U.	N/A	N/A	Minimum: 6.5 Maximum: 9.0 A.A.C. R18-11-109(B)	A&Wedw and PBC	Limit is always included	pH is to be monitored using a discrete sample of the discharge and a WQBEL is set. 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. pH sampling must also coincide with ammonia sampling when required. [5]
Temperature	9	25.70 °C	N/A	N/A	The discharge shall not cause an increase in the ambient water temperature of no more than 3.0 °C A.A.C. R18-11-109(C)	A&Wedw	N/A	Effluent temperature is to be monitored for discharge characterization by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. Temperature sampling must also coincide with ammonia sampling when required.[5]
Total Dissolved Solids (TDS)	5	517 mg/L	N/A	N/A	No applicable standard	N/A	N/A	Monitoring is required for discharge characterization.

DRAFT

Table 1. Permit Limitations and Monitoring Requirements.

Parameter	No. of Samples	Maximum Reported Concentration[1]	RP Multiplier [2]	Calculated Critical Concentration	Most Stringent Criterion	Most Stringent Criterion Basis[3]	Reasonable Potential Determination	Proposed Monitoring Requirement / Rationale[4]
Total Suspended Solids (TSS)	5	< 1 mg/L	N/A	N/A	No applicable standard	N/A	N/A	TSS does not have an applicable technology-based effluent limitation for this discharge. Therefore, TSS monitoring is included to characterize the discharge and evaluate treatment performance. The data will be used to support future permitting decisions and determine whether additional requirements are necessary consistent with 40 CFR 122.44(i).
Ammonia	0	No Data	N/A	N/A	Standard varies with temperature and pH	A&Wedw	RP Indeterminate [6] (No Data)	Ammonia is not expected to be generated by the treatment process; however, it may be present at low concentrations in the source groundwater. Monitoring is included to characterize the discharge, calculate the Ammonia Impact Ratio (AIR) [5], and provide data for future RP evaluations. An Ammonia Data Log with concurrent pH and temperature monitoring is also required. One sample must coincide with WET sampling to aid in the determination of the cause of toxicity, if toxicity is detected.
PFOA and PFOS	243	< 0.002 µg/L	N/A	N/A	No applicable standard	N/A	N/A	Monitoring retained to characterize PFAS in the discharge. Discharge limitations are not included due to the absence of applicable Clean Water Act based standards and effluent limitations guidelines.
1,4-dioxane	243	0.089 µg/L	N/A	N/A	N/A	No applicable numeric surface water quality criterion	N/A	The existing effluent limitation of 0.35 µg/L and associated monitoring requirement are retained. 1,4-dioxane remains a contaminant of concern with the TARP groundwater remediation and addressed by EPA's 2023 Interim Record of Decision Amendment.
Trichloroethylene (Trichloroethene (TCE))	243	< 0.5 µg/L	1.15	N/A	5 µg/L	DWS (5 µg/L); PBC (280 µg/L)	No RP for PBC	The existing effluent limitations of 5 µg/L and associated monitoring requirement are retained. TCE remains a contaminant of concern associated with the TARP groundwater remediation and is addressed by EPA's 2023 Interim Record of Decision Amendment.

DRAFT

Table 1. Permit Limitations and Monitoring Requirements.

Parameter	No. of Samples	Maximum Reported Concentration[1]	RP Multiplier [2]	Calculated Critical Concentration	Most Stringent Criterion	Most Stringent Criterion Basis[3]	Reasonable Potential Determination	Proposed Monitoring Requirement / Rationale[4]
1,1,-Dichloroethylene (1,1,-Dichloroethene (1,1-DCE))	3	< 0.5 µg/L	5.62	N/A	950 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
1,2-cis-dichloroethylene (c-1,2-dichloroethene (c-1,2-DCE)	3	< 0.5 µg/L	5.62	N/A	70 µg/L	PBC	No RP	Monitoring required for discharge characterization.
Chloroform	3	< 0.5 µg/L	5.62	N/A	900 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Hardness	17	281 mg/L	N/A	N/A	No applicable standard. Hardness is used to determine standards for specific metal parameters.	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 effluent hardness value of 250 mg/L.[7] Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
Antimony	17	< 1 µg/L	2.44	N/A	600 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Arsenic	6	5.38 µg/L	3.82	20.54 µg/L	150 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Beryllium	17	< 1 µg/L	2.44	N/A	5.3 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Cadmium[7]	17	< 1 µg/L	2.44	N/A	4.4 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Chromium VI	0	No Data	N/A	N/A	11 µg/L	A&Wedw chronic	No RP (Based on total chromium data)	Monitoring required for discharge characterization
Chromium (Total)	17	5.78 µg/L	1.74	10.03 µg/L	1000 µg/L	AgL	No RP	Monitoring required as an indicator parameter for Chromium VI.

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Table 1. Permit Limitations and Monitoring Requirements.

Parameter	No. of Samples	Maximum Reported Concentration[1]	RP Multiplier [2]	Calculated Critical Concentration	Most Stringent Criterion	Most Stringent Criterion Basis[3]	Reasonable Potential Determination	Proposed Monitoring Requirement / Rationale[4]
Copper[7]	13	< 20 µg/L	2.71	N/A	19.6 µg/L	A&Wedw chronic	RP Indeterminate (High LOQ)	RP is indeterminate due to limited detected data, reporting limits above the applicable hardness based copper criterion. Copper is retained in the assessment level table with monitoring using sufficiently sensitive analytical methods to characterize the discharge and support future RP evaluations.
Cyanide	17	< 50 µg/L	2.44	N/A	9.7 µg/L	A&Wedw chronic	RP Indeterminate (High LOQ)	RP is indeterminate due to limited detected data, reporting limits above the applicable free cyanide criterion, and uncertainty regarding total versus free cyanide results. Cyanide is retained in the Assessment Level table with monitoring using sufficiently sensitive analytical methods to characterize the discharge and support future RP evaluations.
Hydrogen sulfide	0	No Data	N/A	N/A	2 µg/L	A&Wedw chronic	RP Indeterminate (No Data)	Monitoring is required for sulfides as an indicator parameter for hydrogen sulfide. If sulfides are detected, monitoring for hydrogen sulfide is required for the remainder of the permit term.
Iron	17	< 20 µg/L	2.44	N/A	1,000 ug/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Lead[7]	17	< 1 µg/L	2.44	N/A	6.7 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Mercury	18	< 0.0005 µg/L	2.39	N/A	0.01 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Nickel[7]	17	< 20 µg/L	2.44	N/A	113 µg/L	A&Wedw chronic	No RP	Monitoring required for discharge characterization.
Selenium	17	2.62 µg/L	1.42	3.72 µg/L	2 µg/L	A&Wedw chronic	RP Exists	Monitoring required and a WQBEL is set in the permit.
Silver[7]	17	< 1 µg/L	2.44	N/A	15.6 µg/L	A&Wedw acute	No RP	Monitoring required for discharge characterization.
Sulfides	18	< 50	2.39	N/A	No applicable standard	N/A	N/A	Indicator parameter for hydrogen sulfide. Monitoring required. If sulfides are detected, monitoring for hydrogen sulfide is required for the remainder of the permit term.

DRAFT

Table 1. Permit Limitations and Monitoring Requirements.

Parameter	No. of Samples	Maximum Reported Concentration[1]	RP Multiplier [2]	Calculated Critical Concentration	Most Stringent Criterion	Most Stringent Criterion Basis[3]	Reasonable Potential Determination	Proposed Monitoring Requirement / Rationale[4]
Thallium	17	< 1 µg/L	2.44	N/A	75 µg/L	PBC	No RP	Monitoring required for discharge characterization.
Zinc[7]	13	< 20 µg/L	2.71	N/A	255 µg/L	A&Wedw acute and chronic	No RP	Monitoring required for discharge characterization.
Whole Effluent Toxicity (WET):								
Ceriodaphnia dubia (water flea)	3	12.60 PE	N/A	N/A	No toxicity A.A.C. R18-11-108(A)(5)	A&Wedw	RP Indeterminate[6]	Monitoring is required, and an action level remains in the permit.
Pimephales promelas (fathead minnow)	3	-0.36 PE	N/A	N/A	No toxicity A.A.C. R18-11-108(A)(5)	A&Wedw	RP Indeterminate[6]	Monitoring is required, and an action level remains in the permit.
Pseudo-kirchneriella subcapitata (green algae)[8]	3	-23.79 PE	N/A	N/A	No toxicity A.A.C. R18-11-108(A)(5)	A&Wedw	RP Indeterminate[6]	Monitoring is required, and an action level remains in the permit.

Footnotes:

1. Maximum quantified result or maximum reporting limit, whichever is highest. A maximum reporting limit is indicated with less than "<" sign.
2. Reasonable potential (RP) multiplier is a factor applied to the limited dataset reported to ADEQ by the permittee over the current permit term. This factor is a function of the sample count and coefficient of variation for the dataset that is used to approximate the 99th percentile value at a 99% confidence level based on a lognormal distribution.
3. Most stringent criterion basis is the applicable designated use that determines the lowest (most protective) water quality standard for each pollutant. Designated use abbreviations are defined in A.A.C. R18-11-101.
4. The monitoring frequencies are as specified in the permit.
5. An ammonia impact ratio (AIR) is calculated by dividing effluent ammonia concentration by the applicable standard using the effluent pH and temperature.
6. Monitoring with ALs or action levels is required for parameters with indeterminate reasonable potential (RP), unless RP is established and effluent limitations are included in the permit.
7. Hardness-dependent metal – the standard for this parameter is based on the average hardness value of the effluent of 250 mg/L.
8. Formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata*

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VIII. NARRATIVE WATER QUALITY STANDARDS

Narrative standards applicable to the receiving water are listed in A.A.C. R18-11-108. Part I of the permit contains discharge limitations, other limitations, and monitoring requirements to ensure the discharge is protective of the receiving water, including the narrative standards.
The table below outlines the applicable narrative standards and how ADEQ implements each standard in the permit.

Narrative Water Quality Standard	Permit Implementation
A surface water shall not contain pollutants in amounts or combinations that settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life.	The permit requires monitoring for Total Suspended Solids (TSS). Given the nature of the discharge from a groundwater treatment facility, TSS monitoring is considered sufficient to evaluate and control potential sediment-related impacts and to ensure the discharge does not cause bottom deposits.
A surface water shall not contain pollutants in amounts or combinations that cause objectionable odor in the area in which the surface water is located.	The permit contains a narrative requirement that the discharge must not contain objectionable odor.
A surface water shall not contain pollutants in amounts or combinations that cause off-flavor in aquatic organisms; and are toxic to humans, animals, plants, or other organisms.	The permit contains requirements for Whole Effluent Toxicity (WET) Testing to ensure the discharge is free from toxicity. The permit also contains discharge characterization monitoring to assess the quality of the discharge and determine what parameters of concern are present in the discharge and at what levels. Technology -based limitations (TBELs) are not applicable to this discharge. The permit includes applicable water quality based effluent limitations (WQBELs) where reasonable potential exists, to ensure the discharge is non-toxic and safe for aquatic organisms, wildlife, and human health.
A surface water shall not contain pollutants in amounts or combinations that 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	Based on the nature of the discharge from a groundwater treatment facility, the discharge is not expected to contain nutrients at levels that would promote the growth of algae or aquatic plants. Accordingly, the discharge is not anticipated to cause conditions that would impair recreational uses, and nutrient monitoring is not required.
A surface water shall not contain pollutants in amounts or combinations that change the color of the surface water from natural background levels of color	The permit contains a narrative requirement that the discharge must not contain unnatural color.
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 permit contains a narrative requirement that the discharge must not contain oil, grease, or other floating pollutants such as debris, foam, or scum. Additionally, the discharge cannot have a film or iridescent appearance.

DRAFT

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.	The permit requires monitoring for Total Suspended Solids (TSS) to characterize particulate matter in the discharge. Based on the nature of the discharge from a groundwater treatment facility, the discharge is not expected to interfere with treatment processes at the nearest downstream potable water treatment plant or substantially increase the cost of handling solids. Accordingly, the discharge is not anticipated to adversely affect downstream potable water treatment operations.
A surface water shall not contain solid waste such as refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, appliances, or tires.	The permit contains a narrative requirement that the discharge must not contain refuse, rubbish, demolition or construction debris, trash, or garbage. Motor vehicles, appliances, or tires are not expected to be present in the discharge.

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 effluent limitations. Additionally, monitoring may be required to gather data for future effluent limitations or to monitor effluent 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.
For the purpose of this permit, discrete (i.e., grab) samples are specified for all parameters. As this facility treats groundwater, the influent and resulting effluent are expected to be relatively steady-state, and the quality of the discharge is not anticipated to be highly variable. Therefore, discrete sampling is sufficient to obtain representative data of the discharge in accordance with 40 CFR §122.44(i).
Monitoring locations are specified in the permit (Part I.A and Part II.A) 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(j). The permittee has the responsibility to determine that all data collected for purposes of this permit meet the requirements specified in this permit and are collected, analyzed, and properly reported to ADEQ.
The permit 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 in Part II.A.3.
Reporting requirements for monitoring results are detailed in Part II.B of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs), AZPDES Flow Record forms, and Ammonia Data Logs. The permit requires annual submittal of an Ammonia Data Log that records the results for temperature, pH, and ammonia samples and date of sampling (Part II.B.5). Because the ammonia standards in 18 A.A.C. 11, Article 1, Appendix A are contingent upon the pH and temperature at the time of sampling for ammonia, the permittee must

DRAFT

determine the applicable ammonia standard using the ammonia criteria table(s) and calculate the Ammonia Impact Ratio for that ammonia sample result. The AIR is recorded on the DMR.

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

Electronic Reporting:
The U.S. 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 of this information (Federal Register, Vol. 80, No. 204, October 22, 2015). Beginning December 21, 2016, the Federal rule required permittees to use available information technology to electronically report information and data related to the permit in lieu of filing paper-based reports. ADEQ's online portal, myDEQ, allows users to electronically report information and data per their permit.

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

X. BIOSOLIDS REQUIREMENTS (Part III in Permit)

Not Applicable

XI. SPECIAL CONDITIONS (Part V in Permit)

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

Notification Requirements:

The permittee must notify ADEQ if the combined concentrations of PFOS and PFOA exceed 18 ng/L during any monitoring event. Reporting requirements for such an event include reviewing treatment effectiveness and countermeasures used to reduce PFAS in the discharge. Additionally, notification to the Pima Association of Governments (PAG), Pima County, and Town of Marana is required. ADEQ encourages further collaboration and partnerships to address concerns raised regarding groundwater contamination, and encourages local, state and federal entities to work together as necessary. Public involvement is likewise encouraged.

XII. 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 TARP water treatment plant will be to an ephemeral wash which will become (for purposes of this permit) an effluent-dependent water. Except for flows resulting from rain events, the only water in the wash will be the discharge. Therefore, the discharge and the receiving water will normally be one and the same.

Effluent 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.

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XIII. STANDARD CONDITIONS

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

XIV. 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 online on ADEQ's website after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908(A))
Rules require that permits be public noticed on ADEQ's website or in a newspaper of general circulation within the area affected by the facility or activity. The public comment period begins on the publication date of the notice and extends for 30 calendar days. ADEQ shall respond to all significant written comments submitted during the public comment period when a final permit decision is reached or when a final permit is 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 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.

XV. ADDITIONAL INFORMATION

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

Arizona Department of Environmental Quality
Water Quality Division – Surface Water Protection Permits
Attn: Swathi Kasanneni
1110 West Washington Street
Phoenix, Arizona 85007

Or by contacting Swathi Kasanneni at (602) 771 – 4577 or by email at kasanneni.swathi@azdeq.gov.

XVI. INFORMATION SOURCES

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

1. AZPDES Permit Application Form(s) 1 and 2C, received May 1, 2026, along with supporting data, facility diagram,

DRAFT

and maps submitted by the applicant with the application forms.

2. Supplemental information to the application received by ADEQ on October 5, 2026, and October 14, 2026 .

3. ADEQ files on TARP WTP.

4. ADEQ Geographic Information System (GIS) Website.

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 (EPA-505-2-90-001, 1991).

9. U.S. EPA NPDES Permit Writers' Manual, September 2010.

10. The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion, U.S. EPA (EPA-823-B-96-007, 1996).

11. National Pollutant Discharge Elimination System Whole Effluent Toxicity Permit Writers' Manual, U.S. EPA (EPA-833-B-24-001).

12. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012, 2002).

13. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013, 2002).

14. National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document, U.S. EPA (EPA-833-R-10-003, 2010).

15. *Method Guidance and recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)* (EPA-821-B-00-004, 2000).

16. National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, U.S. EPA (EPA-833-R-10-004, 2010).

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