

## ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a wastewater treatment plant (WWTP) with a design capacity of approximately 0.1 million gallons per day (mgd) and thus is considered to be a minor facility under the NPDES 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 5 years.

Permittee's Name:	Arizona Department of Environmental Quality
Permittee's Mailing Address:	1110 W. Washington Street Phoenix, AZ 85007
Facility Name:	Camelback & Central WQARF Site
Facility Address or Location:	21 W. Camelback Road Phoenix, AZ
County:	Maricopa
Contact Person(s): Phone/e-mail address	Kevin Snyder, (602) 771- 4186 Snyder.Kevin@azdeq.gov
AZPDES Permit Number:	AZ0024848
Inventory Number:	502621

### **I. STATUS OF PERMIT(s)**

AZPDES permit applied for:	Renewal
Date application received:	9/5/17
Date application was determined administratively complete:	9/11/17
Previous permit expiration date:	4/4/18

### **208 Consistency:**

208 Plan consistency is not required for industrial facilities.

<b>II. GENERAL FACILITY INFORMATION</b>	
Type of Facility:	Industrial
Facility Location Description:	Southwest corner of Central Avenue and Camelback Road approximately 1/3 mile north of the Grand Canal in Phoenix
Permitted Design Flow:	Groundwater treatment system of approx. 0.1 mgd
Constructed Design Flow:	N/A
Treatment Processes (include sludge handling and disposal/use):	The groundwater treatment system consists of two 10,000-pound activated carbon vessels, in series, in a lead/lag configuration. The lead vessel removes volatile organic compounds (VOCs) and petroleum hydrocarbons while the lag vessel filters water from the lead vessel prior to discharge in case breakthrough occurs in the lead vessel. Once the carbon adsorptive capacity of the leading vessel has been saturated, the lagging vessel takes over as the lead vessel and the exhausted carbon from the lead vessel is replaced.
Average flow per discharge:	The applicant indicates that the average flow per discharge is 0.1 mgd.
Discharge pattern summary:	Continuous

The Central & Camelback WQARF Site GWTS is owned and operated by the ADEQ Waste Programs Division. A discharge of tetrachloroethylene (PCE) created a plume of contaminated groundwater below the southwest corner of Central and Camelback Avenues in Phoenix. Due to rising groundwater, this plume seeped into an underground parking garage located 150 feet to the east. The seepage is pumped to keep the garage from flooding. Additionally, there were petroleum discharges from gas stations formerly located in the area, and gasoline-derived constituents such as BTEX and methyl tertiary butyl ether (MTBE) were also found in the groundwater.

<b>III. RECEIVING WATER</b>	
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 :	Phoenix Area Canals - SRP Grand Canal
River Basin:	Middle Gila
Outfall Location(s):	Outfall 001: Township 1 N, Range 3 E, Section 20 Latitude 33° 30' 32.36", Longitude 112° 04' 26.03"
The outfall discharges to, or the discharge may reach, a surface water listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1.	

Designated uses for the receiving water listed above:	Agricultural Irrigation (AgI) Agricultural Livestock watering (AgL)
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In developing AZPDES permits, the standards for all applicable designated uses in Appendix A are compared and limits that will protect for all applicable designated uses are developed based on the standards. There are no drinking water treatment plants on the Grand Canal downstream of the outfall. However, an agreement was made between the ADEQ and SRP in 2003 (“Agreement”) to utilize the Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs) for this segment of water to protect from certain groundwater contaminants and all volatile organic compounds (VOCs). Based on the SRP Agreement and best professional judgment (BPJ), technology-based effluent limitations (TBELS) based on MCLs have been set for certain VOCs listed in the table reasonable potential table in section

**IV. 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
Boron	µg/L	3,700
Benzene	µg/L	< 0.5
Tetrachloroethylene (PCE)	µg/L	< 0.5
Vinyl chloride	µg/L	< 0.5
Additional 9 organic compounds including VOCs	µg/L	Non-detect

**V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT**

Date of most recent inspection:	10/12/16; no potential violations were noted as a result of this inspection.
DMR files reviewed:	7/2013 through 1/2017
Lab reports reviewed:	7/2013 through 1/2017
DMR Exceedances:	None
NOVs issued:	None
NOVs closed:	N/A
Compliance orders:	None

**VI. PROPOSED PERMIT CHANGES**

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

<b>Parameter</b>	<b>Existing Permit</b>	<b>Proposed permit</b>	<b>Reason for change</b>
Reporting Location	Mail in hard copies of DMRs and other attachments	DMRs and other reports to be submitted electronically through myDEQ portal	Language added to support the NPDES electronic DMR reporting rule that became effective on December 21, 2015.
Benzene, 1,2-Dichloroethane, Methyl tertiary-butyl ether, Toluene, and Xylenes, total	Limits	No sampling required	Data submitted indicated no reasonable potential (RP) for an exceedance of a standard.

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 effluent 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.

Limits for the following parameters have been removed from the permit because evaluation of current data allows the conclusion that no reasonable potential (RP) for an exceedance of a standard exists:

- Benzene
- 1,2-Dichloroethane
- Methyl tertiary-butyl ether
- Toluene
- Xylenes, total

Data submitted indicated no reasonable potential (RP) for an exceedance of a standard. These analytes were associated with leaking underground storage tank (LUST) sites in the vicinity of the Central & Camelback (C&C) Water Quality Assurance Revolving Fund (WQARF) Site and are not related to the release being remediated at the C&C WQARF Site. Three of the four LUST sites associated with the analytes requested to be eliminated have been closed by the ADEQ and the fourth LUST site is under consideration for closure by ADEQ. These analytes have not been detected in the influent groundwater samples collected at the C&C WQARF Site treatment system at concentrations greater than the Maximum Allowable Discharge Limitations since operation of the system began in 2003.

This is considered allowable backsliding under 303(d)(4). The effluent limitations in the current permit for these two parameters were based on state standards, the respective receiving waters are in attainment for these parameters, and the revisions are consistent with antidegradation requirements. See Section XII for information regarding antidegradation requirements. Limits are retained in the draft 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 XII for information regarding antidegradation requirements. No limits are less stringent due to a change in the WQS in this permit.

**VII. DETERMINATION OF EFFLUENT LIMITATIONS and ASSESSMENT LEVELS**

When determining what parameters need monitoring and/or limits included in the draft 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 limits (TBELs) for a groundwater treatment system such as the Central & Camelback WQARF Site GWTS. However, it has been demonstrated that this technology allows for efficient removal of the pollutants, and the discharge can be sampled with low detection limits. Based on the SRP Agreement (see Section III above) and best professional judgment (BPJ), technology-based effluent limitations (TBELs) based on MCLs have been set for certain VOCs listed in the table on page 6 of this factsheet.

**Numeric Water Quality Standards:** As outlined in A.A.C. R18-11-109 and Appendix A:

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 effluent at a level that could potentially cause any applicable numeric water quality standard to be exceeded. RP refers to the possibility, 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 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, effluent 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.

**Whole Effluent Toxicity (WET):**

ADEQ does not require WET testing if the receiving water has no aquatic and wildlife designated uses although the narrative standard prohibiting the discharge of toxic pollutants applies to all discharges. Therefore, WET testing is not required in this permit, and Part IV for WET testing is shown as “not applicable.”

**Permit Limitations and Monitoring Requirements:**

The table that follows 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*.

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Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value (1)	RP Determination	Proposed Monitoring Requirement/ Rationale (2)
Flow	---	---	---	---	---	Discharge flow is to be monitored on a continual basis using a flow meter.
pH	Min: 6.5 SU; Max: 9.0 SU/AgL: A.A.C.R 18-11- 109 (B)	No Data	0	N/A	No RP (BPJ)	No monitoring is required. Historical data indicate pH has always met the standard. Groundwater pH values are not expected to vary significantly over time.
Arsenic	200 µg/L/ AgL	No Data	0	N/A	No RP (BPJ)	No monitoring is required. Arsenic is not expected in the groundwater in concentrations that will exceed the standard.
Boron	1,000 µg/L/ Agl	1,500 µg/L	38	3,600 µg/L	RP Exists	Discharge monitoring is required. See Mixing Zone section under Special Conditions below for detail.
Cadmium	50 µg/L/ Agl & AgL	<3 µg/L	17	3.8 µg/L	No RP	No monitoring is required.
Chromium, total	1,000 µg/L/ Agl & AgL	11 µg/L	6	23.1 µg/L	No RP	No monitoring is required.
Copper	500 µg/L/ AgL	No Data	0	N/A	No RP (BPJ)	No monitoring is required. Copper is not expected in the groundwater in concentrations that will exceed the standard.
Lead	100 µg/L/ AgL	<15 µg/L	42	13.5 µg/L	No RP	No monitoring is required.
Mercury	10 µg/L/ AgL	No Data	0	N/A	No RP (BPJ)	No monitoring is required. Mercury is not expected in the groundwater in concentrations that will exceed the standard.
Selenium	20 µg/L/ Agl	No Data	0	N/A	No RP (BPJ)	No monitoring is required. Selenium is not expected in the groundwater in concentrations that will exceed the standard.
Zinc (2)	10,000 µg/L/ Agl	No Data	0	N/A	No RP (BPJ)	No monitoring is required. Zinc is not expected in the groundwater in concentrations that will exceed the standard.
Chloroform	80 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation required. Ground-water continues to contain chloroform in detectable levels. Chloroform is required to be monitored with limitations in the existing permit.
1,2-cis-Dichloroethylene (1,2-cis-DCE)	70 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. Ground-water continues to contain 1, 2-cis-DCE in detectable levels. 1,2-cis-DCE is listed as a pollutant of concern (POC) in the Agreement and is required to be monitored with limitations in the existing permit.
Tetrachloroethylene (PCE)	5 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. Ground-water continues to contain PCE in high concentrations that exceed the standard. PCE is listed as a POC in the Agreement and is required to be monitored with limitations in the existing permit.
Trichloroethylene (TCE)	5 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. Ground-water continues to contain TCE in concentrations that approach the standard. TCE is listed as a POC in the Agreement and is required to be monitored with limitations in the existing permit.

Parameter	Lowest Standard/ Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value (1)	RP Determination	Proposed Monitoring Requirement/ Rationale (2)
1,1-Dichloroethylene (1,1,-DCE)	7 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. 1,1-DCE is listed as a POC in the Agreement and is required to be monitored with limitations in the existing permit.
1,2-trans-Dichloroethylene (1,2-trans-DCE)	100 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. 1,2-trans-DCE is listed as a POC in the Agreement and is required to be monitored with limitations in the existing permit.
1,1,1-Trichloroethane (1,1,1-TCA)	200 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. 1,1,1-TCA is listed as a POC in the Agreement and is required to be monitored without limitations in the existing permit.
Vinyl chloride	2 µg/L / BPJ Technology-based limit	<0.5 µg/L	17	N/A	RP exists (BPJ)	Monitoring with limitation is required. Vinyl chloride is listed as a POC in the Agreement and is required to be monitored with limitations in the existing permit.
Whole effluent toxicity (WET)	Narrative toxicity standard	No data	0	N/A	N/A	No monitoring is required.

Footnotes:

- (1) Estimated maximum value is the product of the maximum observed/reported value and the RP multiplier.
- (2) The monitoring frequencies above are required when the facility is discharging through Outfall 001. If there is no discharge, no monitoring will be required.

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**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, Sections B and C of the draft 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 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 second term permits if all monitoring requirements have been met and the limits 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 I.D in order to ensure that representative samples of the effluent 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.2) 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.

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 requires 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. Submit DMRs and other reports electronically through myDEQ portal.

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

**X. BIOSOLIDS REQUIREMENTS (Part III in Permit)**

This is not a domestic wastewater treatment facility and as such this section is not applicable.

**XI. SPECIAL CONDITIONS (Part V in Permit)**

**Mixing Zone for Boron**

The previous permit authorized a mixing zone for boron. A review of the discharge data submitted to ADEQ indicates that on occasion effluent boron concentrations had reasonable potential to exceed the applicable standards for the receiving water. Pursuant to R18-11-114(G), the director shall reevaluate a mixing zone upon reissuance of the permit. Because conditions have not changed from the last permit cycle ADEQ has approved the mixing zone for discharges into the Arizona Grand Canal.

Compliance with the boron limit is required prior to any AgI water deliveries downstream of the discharge. This is consistent with mixings zones for other discharges that are established for the Salt River Project (SRP) Groundwater Wells. The results of the SRP mixing zone model may be used to demonstrate compliance with boron limits in Table 1 of this 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 (RP), if assessment levels in this permit are exceeded [A.A.C. R18-9-B906 and 40 CFR Part 122.62 (a) and (b)].

**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 Camelback & Central GWTS will be to a canal which is subject to Tier 1 antidegradation protection. 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.

**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 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 draft 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.

**XV. ADDITIONAL INFORMATION**

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

Arizona Department of Environmental Quality  
Water Quality Division – AZPDES Individual Permits Unit  
Attn: Jacqueline Maye  
1110 West Washington Street  
Phoenix, Arizona 85007

Or by contacting Jacqueline Maye at (602) 771 – 4607 or by e-mail at [jpm@azdeq.gov](mailto:jpm@azdeq.gov).

**XVI. INFORMATION SOURCES**

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

1. AZPDES Permit Application Form(s) 1 and 2C, received September 5, 2017.
2. ADEQ files on Central & Camelback WQARF Site GWTS.
3. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters*, adopted December 31, 2016.
4. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.
5. 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*.
6. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.
7. U.S. EPA NPDES Permit Writers' Manual, September 2010.