ADEQ Arizona Department of Environmental Quality

DRAFT FACT SHEET

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a water treatment plant (WTP) and is considered to be a minor facility under the NPDES program. The discharge limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (A.A.C.) R18-11-101 et. seq. This permit is proposed to be issued for a period of 5 years.

I. PERMITTEE INFORMATION	
Permittee's Name:	EPCOR Water – Chaparral City
Permittee's Mailing Address:	12021 N. Panorama Dr. Fountain Hills, AZ 85268
Facility Name:	Chaparral City – Shea Water Treatment Plant (WTP)
Facility Address or Location:	15500 E. Palatial Dr. Fountain Hills, AZ 85268
County:	Maricopa
Contact Person(s): Phone/e-mail address	Tom DiDomizio 623-445-2431 /tdidomiz@epcor.com
AZPDES Permit Number:	AZ0022381
Inventory Number:	101375
LTF Number:	78363

II. STATUS OF PERMIT(s)	
AZPDES permit applied for:	Renewal
Date application received:	September 6, 2019
Date application was determined administratively complete:	September 11, 2019
Previous permit number (if different):	N/A
Previous permit expiration date:	March 9, 2020

208 Consistency:

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

II. STATUS OF PERMIT(s)		
208 Plan consistency is not required for industrial facilities.		
EPCOR Water – Chaparral City has the following permits issued by ADEQ applicable to the Shea WTP:		
Type of Permit		
Aquifer Protection Permit (APP)	P-101375	Regulates discharges to the local aquifer

III. GENERAL FACILITY INFORMATION	
Type of Facility:	Privately owned, public water treatment plant (WTP)
Facility Location Description:	The facility is located in Fountain Hills, 2.1 miles northwest of Highway 87, and 5.3 miles west of the Verde River.
Discharge Flow:	1 million gallons per day (mgd)
Applicable Treatment Processes :	The WTP process consists of coagulation, flocculation, sedimentation, and reuse/recycle of treated effluent. The plant has three treatment units (modular-type treatment system) where each unit consists of one up-flow adsorption clarifier and two down-flow granular media filters. Filter backwash water is sent to the lagoon where there is a drying bed. Raw water flowing from Central Arizona Project (CAP) canal to the WTP is first injected with polymerized aluminum hydroxychloride and followed by a cationic polymer for coagulation. The coagulated water flows through an up-flow clarifier before continuing to a mixed media filter. The filtered water is injected with 12.5 % solution of sodium hypochlorite (disinfectant) prior to flowing into the plant's clearwell. Filters and up-flow clarifiers are periodically backwashed. The period of each backwash cycle and cycle frequency are dependent on a number of factors including raw water turbidity levels, filtration rates, pressure losses through the filters, and time between backwashes. All wasted backwash and filter-to-waste water flow into one of two 100,000 gallon decant tanks, operated in parallel. The WTP process water is normally held in the two decant tanks for a period of time to allow settling of suspended matter. Decanted water (supernatant) from the tank is recycled by pumping the water into the raw water pipeline carrying raw water into the raw water reservoir. Periodic flushing of the sludge and sediment from the decant tanks and the raw water reservoir are discharged to a 420,000-gallon unlined detention basin which was built in 1986. All water treatment vessels are designed with emergency overflows. These vessels include the raw water reservoir, filters and filter/clarifiers, clearwell, and the decant tanks. In the rare event that the WTP process wastewater overflows these vessels, it enters the same drain line that carries sludge and sediment to the detention basin.

III. GENERAL FACILITY INFORMATION	
	The 420,000-gallon detention basin is an earthen basin with a concrete divider wall to create two (2) sub-basins. These sub-basins act as a settling basin and a drying bed. The WTP process wastewater in the detention basin is disposed of through evaporation, percolation, and intermittent discharge from its spillway (Outfall 001) into an unnamed wash, tributary to Cereus Wash, tributary to the Verde River. The distance between Outfall 001 and the Verde River is 5.3 miles. Sludge in the detention basin is dried and approximately once a year hauled to a landfill.
Nature of facility discharge:	WTP process water from the detention basin receives periodic flushing of the sludge and sediment from the decant tanks and the raw water reservoir. Sludge from the lagoon is hauled to a landfill.
Average flow per discharge:	No recent discharges. Previous discharge rates have been less than an average flow of 2,500 gallons per day (gpd).
Continuous or intermittent discharge:	Intermittent, discharge only when the stored volume exceeds the rate of evaporation and percolation.
Discharge pattern summary:	ADEQ has taken infrequent flows into consideration and a tiered renewal permit has been written. Limits will vary depending upon how frequently the facility discharges. If the facility discharges for 7 or more consecutive days then Table 1a in the permit will apply. If the facility discharges for less than 7 consecutive days with at least 30 days between discharges then Table 1b will apply. The application indicated that the facility did not discharge during the existing permit term.

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 :	An unnamed wash tributary to Cereus Wash, tributary to the Verde River Headwaters to the Fort McDowell Indian Reservation boundary
River Basin:	Verde River Basin
Outfall Location(s):	Outfall 001: Township 3N, Range 6E, Section 21 Latitude 33^{o} 35’ 05” N Longitude 111^{o} 44’ 45”W
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:	Aquatic and Wildlife ephemeral (A&We) Partial Body Contact (PBC)

IV. RECEIVING WATER	
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 draft AZPDES permit includes discharge limitations and monitoring requirements designed to achieve compliance with A&Wedw standards. Therefore, the following uses are being applied to the receiving water: • Aquatic and Wildlife effluent dependent water (A&Wedw) • Partial Body Contact (PBC)	
Is the receiving water on the 303(d) list?	No, and there are no TMDL issues associated.
Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108, and the applicable numeric water quality standards are listed in A.A.C. R18-11-109 and in Appendix A thereof. There are two standards for the Aquatic and Wildlife uses, acute and chronic. In developing AZPDES permits, the standards for all applicable designated uses are compared and limits that will protect for all applicable designated uses are developed based on the standards.	

V. DESCRIPTION OF DISCHARGE		
The facility is in operation. No discharge occurred during the previous permit term, but the WTP process water monitoring data is available from discharge characterization. The following is the measured discharge quality reported in the application.		
Parameters	**Units**	**Maximum Daily Discharge Concentration**
Total Suspended Solids (TSS)	mg/L	2
Total Organic Carbon (TOC)	mg/L	4.67

VI. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT	
Date of most recent inspection:	07/14/2015; no potential violations were noted as a result of this inspection.
DMR files reviewed:	01/2016 through 12/2018
Lab reports reviewed:	12/2016 through 12/2018
DMR Exceedances:	No exceedances were noted. Discharge characterization (November 2014 and December 2018) showed concentrations above the applicable WQS for selenium.
NOVs issued:	None
NOVs closed:	N/A
Compliance orders:	None

VII. PROPOSED PERMIT CHANGES

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

Parameter	Existing Permit	Proposed permit	Reason for change
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.
Cyanide	Limited (Acute)	Limit removed (Acute)	Data submitted indicated no reasonable potential (RP) for an exceedance of a standard.
Cadmium, Copper, Iron, Lead, Silver, and Zinc	Assessment level	Discharge Characterization	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 discharge limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes do identify exceptions to these circumstances where backsliding is acceptable. This permit has been reviewed and drafted with consideration of anti-backsliding concerns.

Limits for the following parameter 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:

• Cyanide (Acute)

This is considered allowable backsliding under 303(d)(4). The discharge limitations in the current permit for this parameter is 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.

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

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

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

Technology-based Limitations:

There are no applicable promulgated technology-based standards for water treatment plant discharges.

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 discharge 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

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

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.

Ammonia water quality criteria vary based on the discharge pH and temperature at the time of discharge sampling. As a result, no single ammonia concentration can be included as a permit limit. To overcome this, an Ammonia Impact Ratio (AIR) of 1 for the monthly average and a value of 2 for the maximum daily limits has been established as the permit limits for ammonia. The AIR is calculated by dividing the ammonia concentration in the discharge by the applicable ammonia standard based on the discharge pH and temperature at the time of sampling. AIR values will be reported on DMRs and on the Ammonia Data Log which is included as Appendix B in the permit.

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.

Mixing Zone

Arizona water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies 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 discharge concentration must meet stream standards.

Assessment Levels (ALs)

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

The requirement to monitor for these parameters is included in the draft 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 Numeric Water Quality Standards Section above).

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

Hardness

The permittee is required to sample hardness as $CaCO_3$ at the same time the trace metals are sampled because the water quality standards for some metals are calculated using the water hardness values. The hardness value of 291 mg/L (the average hardness of the discharge as supplied in the application) was used to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals (cadmium, copper, lead, nickel, silver and zinc).

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Whole Effluent Toxicity (WET)

WET testing is required in the draft 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 and/or acute toxicity is required. The requirement to conduct chronic toxicity testing is contingent upon the frequency or duration of discharges. Since completion of the chronic WET test requires a minimum of three samples be taken for renewals, the chronic WET test is not required during any given monitoring period in which the discharge does not occur over seven consecutive calendar days and is not repeated more frequently than every thirty days.

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

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

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

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

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

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

Discharge Characterization (DC)

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

- Table 4a. – General Chemistry and Microbiology: ammonia, COD, total residual chlorine (TRC), nitrogen, oil and grease, pH, phosphorus, temperature, total dissolved solids (TDS), and total suspended solids (TSS)
- Table 4.b. – Selected Metals, Hardness, Cyanide, and WET
- Table 4.c. – Selected Organic Compounds

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

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

Permit Limitations and Monitoring Requirements

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*.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Flow	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be monitored on a continual basis using a flow meter.
Total Suspended Solids (TSS)	No applicable standard	TSS: 2 mg/L	TSS: 12	N/A	N/A	Monitoring is required for discharge characterization.
Chlorine, Total Residual (TRC)	11 µg/L/ A&Wedw chronic	< 19 µg/L	4	N/A	RP always expected when chlorine or bromine is used for disinfection.	TRC is to be monitored as a discrete sample and a WQBEL remains in the permit. 40 CFR Part 136 specifies that discrete samples must be collected for chlorine. At least one sample per month must coincide with WET testing to aid in the determination of the cause of toxicity, if toxicity is detected.
E. coli	30-day geometric mean: 126 cfu /100 mL (4 sample minimum) Single sample maximum: 575 cfu /100 mL/ PBC	No Data (No discharge)	0	N/A	RP Indeterminate (no data) (4)	*E. coli* is to be monitored as a discrete sample and a WQBEL remains in the permit.
pH	Minimum: 6.5 Maximum: 9.0 A&Wedw and PBC A.A.C. R18-11-109(B)	7.9 – 8.1	3	N/A	WQBEL 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.
Temperature	No applicable numeric standard	19ºC	3	N/A	N/A	Discharge 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.
Total Dissolved Solids (TDS)	No applicable standard	670 mg/L	3	N/A	N/A	Monitoring required for discharge characterization.
Ammonia	Standard varies with temperature and pH	< 1.0 mg/L	1	N/A	RP Indeterminate	Ammonia is to be monitored by discrete sample and a WQBEL in the form of an ammonia impact ratio (AIR) of 1 is set in the permit (5). 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.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Nutrients (Total Nitrogen and Total Phosphorus)	No applicable standards	N: 0.25 mg/L P: < 0.05 mg/L	3 3	N/A	N/A	Monitoring required for discharge characterization.
Oil & Grease	No applicable standard	< 5 mg/L	3	N/A	N/A	Monitoring required for discharge characterization.
Antimony	600 µg/L/ A&Wedw chronic	0.3 µg/L	5	1.26 µg/L	No RP	Monitoring required for discharge characterization.
Arsenic	150 µg/L/ A&Wedw chronic	2 µg/L	5	8.4 µg/L	No RP	Monitoring required for discharge characterization.
Beryllium	5.3 µg/L/ A&Wedw chronic	< 2 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Cadmium (2)	4.92 µg/L/ A&Wedw chronic	< 0.1 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Chromium (Total)	No applicable standard	< 5 µg/L	5	N/A	No RP	Monitoring required as an indicator parameter for Chromium VI.
Chromium VI	11 µg/L/ A&Wedw chronic	< 15 µg/L	5	N/A	RP Indeterminate (High LOQ)	Monitoring required and a WQBEL remains in the permit.
Copper (2)	22 µg/L/ A&Wedw chronic	< 10 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Cyanide	9.7 µg/L/ A&Wedw chronic	< 10 µg/L	5	N/A	RP Indeterminate (High LOQ)	Monitoring required and a WQBEL remains in the permit.
Cyanide	41 µg/L/ A&Wedw acute	< 10 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Hardness	No applicable standard. Hardness is used to determine standards for specific metal parameters.	300 mg/L	5	N/A	N/A	A&W standards for cadmium, copper, lead, nickel, silver and zinc used for RP determinations were based on the average discharge hardness value of 291 mg/L. Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
Hydrogen Sulfide	2 µg/L/ A&Wedw chronic	No Data	No Data	N/A	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	1,000 ug/L / A&Wedw chronic	110 µg/L	5	462 µg/L	No RP	Monitoring required for discharge characterization.
Lead (2)	7.87 µg/L / A&Wedw chronic	< 1 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Mercury	0.01 µg/L/ A&Wedw chronic	< 0.2 µg/L	5	N/A	RP Indeterminate (High LOQ)	Monitoring required and an assessment level remains in the permit.

Parameter	Lowest Standard / Designated Use		Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Nickel (2)	128 µg/L/ A&Wedw chronic		< 20 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Selenium	2 µg/L/ A&Wedw chronic		3.4 µg/L	5	14.28 µg/L	RP Exists	Monitoring required and a WQBEL remains in the permit.
Selenium	4, 667 µg/L/ PBC		3.4 µg/L	5	14.28 µg/L	No RP	Monitoring required for discharge characterization.
Silver (2)	20.2 µg/L/ A&Wedw acute		< 0.1 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Sulfides	No applicable standard		No Data	No Data	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.
Thallium	75 µg/L/ PBC		< 0.5 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Zinc (2)	290 µg/L/ A&Wedw acute and chronic		< 20 µg/L	5	N/A	No RP	Monitoring required for discharge characterization.
Whole Effluent Toxicity (WET)	No toxicity (A.A.C. R18-11-108(A)(6)	*Pseudo-kirchneriella subcapitata (3)*	1.0 TUc	1	N/A	RP Indeterminate	Monitoring required and an action level remains in the permit.
		Pimephales promelas	1.0 TUc	1	N/A	RP Indeterminate	Monitoring required and an action level remains in the permit.
		Ceriodaphnia dubia	1.0 TUc	1	N/A	RP Indeterminate	Monitoring required and an action level remains in the permit.

Footnotes:
(1) The monitoring frequencies are as specified in the permit.
(2) Hardness-dependent metal - the standard for this parameter is based on the average hardness value of the discharge as indicated above.
(3) Formerly known as *Selenastrum capricornutum or Raphidocelis subcapitata*.
(4) *E. coli* is not expected to be present in filter backwash from water treatment plants. However, *E. coli* monitoring was required in the existing permit due to detection above the applicable WQS in samples of the discharge from the detention basin, possibly due to wildlife. The limit remains in the permit until sufficient sampling has been conducted prior to discharge to the detention basin to demonstrate no RP.
(5) An AIR will be calculated by dividing discharge ammonia concentration by the applicable standard using the discharge pH and temperature.

VIII. NARRATIVE WATER QUALITY STANDARDS

All narrative limitations in A.A.C. R18-11-108 that are applicable to the receiving water are included in Part I, Section E of the 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 discharge limitations. Additionally, monitoring may be required to gather data for future discharge limitations or to monitor discharge impacts on receiving water quality.

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

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

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

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

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

Reporting requirements for monitoring results are detailed in Part II, Sections B.1 and 2 of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs), Ammonia Data Logs, and AZPDES Flow Record forms.
The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.

Electronic reporting

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

The permit also 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.3). 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 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.

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

X. BIOSOLIDS REQUIREMENTS (Part III in Permit)

Not applicable – this is an industrial facility.

XI. SPECIAL CONDITIONS (Part V in Permit)

Operation

This permit condition requires the permittee to ensure that the WWTP has an operator who is certified at the appropriate level for the facility, in accordance with A.A.C. R18-5-104 through -114. The required certification level for the WWTP operator is based on the class (Wastewater Treatment Plant) and grade of the facility, which is determined by population served, level of treatment, and other factors.

Permit Reopener

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

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 Shea 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. Discharge quality limitations and monitoring requirements have been established under the proposed permit to ensure that the discharge will meet the applicable water quality standards. As long as the permittee maintains consistent compliance with these provisions, the designated uses of the receiving water will be presumed protected, and the facility will be deemed to meet currently applicable antidegradation requirements under A.A.C. R18-11-107.

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.

XIV. ADMINISTRATIVE INFORMATION

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 – Surface Water Permits Unit
Attn: Devin McAllister
1110 West Washington Street
Phoenix, Arizona 85007

Or by contacting Devin McAllister at (602) 771 – 4374 or by e-mail at mcallister.devin@azdeq.gov.

XVI. INFORMATION SOURCES

While developing discharge 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 6, 2019, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.

2. ADEQ files on EPCOR Water - Chaparral City – Shea WTP.

3. ADEQ Geographic Information System (GIS) Web site.

4. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted December 31, 2016.

5. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.

6. 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*.

7. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.

8. *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, US EPA, May 31, 1996.

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

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