

STATEMENT OF BASIS FOR MODIFICATION
OF AZPDES PERMIT NO. AZ0025151
(September 26, 2016)

Pursuant to A.A.C. R18-9-B906, on September 12, 2016, ADEQ received an application from the City of Mesa (the City) to modify the Southeast Water Reclamation Plant (SEWRP) AZPDES Permit No. AZ0025151, which became effective on March 18, 2015. The request is to reduce the sampling frequency for copper, cyanide and selenium (Table 1. Limited parameters), and chromium total, chromium VI, hydrogen sulfide, iron, and sulfide (Table 2. Assessment level parameters) from monthly to quarterly. Sampling data from January 14, 2015 to August 10, 2016 was submitted with the application and was added to data previously submitted from March 2012 to June 2014 in order to evaluate the last 4.5 years of data.

The SEWRP is a Publicly Owned Treatment Works (POTW). The receiving water for the SEWRP Outfall 001 and Outfall 002 is the East Maricopa Floodway (EMF), tributary to the Gila River in the Middle Gila watershed. The treatment process includes a headworks, an influent pump station, three primary sedimentation basins, two aeration basins designed for nutrient removal and nitrification/denitrification, three secondary clarifiers, three traveling bridge filters and a hypochlorite disinfection system. The use of an ultraviolet (UV) disinfection system is also approved as a backup for the hypochlorite disinfection system.

ADEQ has reviewed the request and based on the data proposes the following permit changes:

- a) Move Selenium from Table 1 to Table 4.b where the sampling frequency is 1x /quarter for effluent characterization.
- b) Move Chromium (Total), Chromium VI, and Iron from Table 2 to Table 4.b where the sampling frequency is 1x /quarter for effluent characterization.
- c) Move Hydrogen sulfide from Table 2 to Table 4.f where the permittee may initially monitor for sulfide instead of hydrogen sulfide. The limit of quantification shall be no higher than 100 µg/L, and any detection of sulfides shall trigger monitoring for hydrogen sulfide for the remainder of the permit term.

The Limit for Selenium has 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. This is considered allowable backsliding under 303(d)(4). The effluent limitations in the current permit for this parameter was based on state standards, the respective receiving waters are in attainment for this parameter, and the revisions are consistent with antidegradation requirements.

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 City of Mesa Water Resources is to the East Maricopa Floodway, 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 effluent. 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(C).

The data reviewed for Cyanide (8.8 µg/L in 9/2012) and Copper (14.5 µg/L in 2/2013) indicate a reasonable potential for an exceedance of the standard. Therefore, these parameters remain limited on Table 1 and the sampling frequency remains 1x /month.

See Table 1 of the Statement of Basis below for a more detailed explanation of the reasonable potential determination analysis for the applicable parameters.

The following additional updates have been made to the permit to reflect electronic reporting requirements:

Part.II.B(2) DMRs and attachments are to be submitted by the 28th day of the month following the end of a monitoring period. For example, if the monitoring period ends January 31st, the permittee shall submit the DMR by February 28th. The permittee shall electronically submit all compliance monitoring data and reports using the myDEQ electronic portal provided by ADEQ. The reports required to be electronically submitted include, but are not limited to, the following:

- Discharge Monitoring Reports
- Whole Effluent Toxicity (WET) reports
- Original copies of laboratory results
- Ammonia data logs (if applicable)
- AZPDES discharge flow records (if applicable)
- Method detection limit studies (if applicable)
- Bench sheets or similar documentation for field testing parameters (if applicable)

Part.II.B(4) All results of the NPDES DMR-QA Study shall be submitted to the email and addresses listed below, or submit by any other alternative mode as specified by ADEQ:

Arizona Department of Environmental Quality
Email: AZPDES@azdeq.gov

Arizona Department of Health Services
Attn: Office of Laboratory Licensure and
Certification
250 N 17th Avenue
Phoenix, AZ 85007

Part.II.B

6. For parameters with Daily Maximum Limits or Daily Maximum Assessment Levels in this permit, the permittee shall review the results of all samples collected during the reporting period and report as follows:

| For Daily Maximum Limits/Assessment Levels | The Permittee shall Report on the DMR |
|--|---|
| When the maximum value of any analytical result is greater than or equal to the LOQ | The maximum value of all analytical results |
| When the maximum value detected is greater than or equal to the laboratory's LOD but less than the LOQ (1) | NODI (Q) |

| For Daily Maximum Limits/Assessment Levels | The Permittee shall Report on the DMR |
|--|---------------------------------------|
| When the maximum value is less than the laboratory's LOD (2) | NODI (B) |

Footnotes:

- (1) Not Quantifiable
- (2) Below Detection

7. For parameters with Monthly Average Limits or Monthly Average Assessment Levels in this permit, the permittee shall review the results of all samples collected during the reporting period and report:

| For Monthly Average Limits/Assessment Levels | | The Permittee shall Report on the DMR |
|---|---|--|
| If only one sample is collected during the reporting period (monthly, quarterly, annually, etc.) (In this case, the sample result is the monthly average.) | When the value detected is greater than or equal to the LOQ | The analytical result |
| | When the value detected is greater than or equal to the laboratory's LOD, but less than the LOQ | NODI (Q) |
| | When the value is less than the laboratory's LOD | NODI (B) |
| If more than one sample is collected during the reporting period | <p>All samples collected in the same calendar month must be averaged.</p> <ul style="list-style-type: none"> • When all results are greater than or equal to the LOQ, all values are averaged • If some results are less than the LOQ, use the LOD value in the averaging • Use '0' for values less than the LOD | The highest monthly average which occurred during the reporting period |

These changes are considered a major modification. This proposed modification will be public noticed for a 30-day comment period prior to issuance of the final permit decision.

Table 1. Table representing reasonable potential analysis of applicable parameters listed in the major modification application.

| Parameter | Lowest Standard / Designated Use | Maximum Reported Daily Value | No. of Samples | Estimated Maximum Value | RP Determination | Proposed Monitoring Requirement/ Rationale (1) |
|------------------|--|------------------------------|----------------|-------------------------|----------------------------|---|
| Chromium (Total) | 100 µg/L/ PBC | <2 µg/L | 23 | 2.2 µg/L | No RP | Monitoring required as an indicator parameter for Chromium VI. |
| Chromium VI | 11 µg/L/ A&Wedw chronic | <5 µg/L | 18 | 6 µg/L | No RP | Monitoring required for effluent characterization. |
| Copper (2) | 23 µg/L/ A&Wedw chronic | 14.52 µg/L | 35 | 28 µg/L | RP Exists | Monitoring is required and a WQBEL remains in the permit. |
| Cyanide | 9.7 µg/L/ A&Wedw chronic | 8.8 µg/L | 22 | 23 µg/L | RP Exists | Monitoring is required and a WQBEL remains in the permit. |
| Hardness | No applicable standard. Hardness is used to determine standards for specific metal parameters. | 294 mg/L (average) | 51 | 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 294 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 | 0 | 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 | 55 µg/L | 13 | 150 µg/L | No RP | Monitoring required for effluent characterization. |
| Selenium | 2 µg/L/ A&Wedw chronic | <2 µg/L | 33 | 1.9 µg/L | No RP | Monitoring required for effluent characterization. |
| Sulfides | No applicable standard | <100 µg/L | 22 | 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. |

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 effluent as indicated above.