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| ADEQ Inventory No. | 512453 | Permit No. | AZ0026387 |
| LTF No. | 95353 | Place ID No. | 18640 |

AUTHORIZATION TO DISCHARGE UNDER THE ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Article 3.1; the Federal Water Pollution Control Act, (33 U.S.C. §1251 *et seq.*, as amended), and Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 9 and 10, and amendments thereto the,

South32 Hermosa Inc.
January Mine Hermosa Project
1860 East River Road, Suite 200
Tucson, Arizona 85718

is authorized to discharge (1) treated mine drainage water from historic workings associated with January Adit, stormwater, and drainage water from historic dry stack tailings from the January Mine Hermosa Project to Upper Alum Gulch and (2) treated mine drainage water, drainage water from historic and non-historic dry stack tailings, groundwater, core cutting water, drilling water, and stormwater to Lower Harshaw Creek, Protected Surface Waters in Arizona that are Waters of the U.S. (WOTUS) in the Santa Cruz River Basin at:

| Outfall No. | Latitude | Longitude | Legal |
|------------------------------------|---------------|----------------|--------------------------------------|
| 001—WTP 1 (Upper Alum Gulch) | 31° 28' 15" N | 110° 43' 43" W | Township 23 S, Range 16 E, Section 5 |
| 002—WTP 2 (Lower Harshaw Creek) | 31° 27' 57" N | 110° 43' 12" W | Township 23 S, Range 16 E, Section 4 |

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein, and in the attached "Standard AZPDES Permit Conditions." See definition of "historic" in Appendix A. Part B.

Annual Registration Fee [A.R.S. 49-255.01 and A.A.C. R18-14-104]

The annual registration fee for this permit is payable to ADEQ each year. For the purposes of the annual fees, this permit is a Major permit. If the facility is not yet constructed or is incapable of discharge at this time, the permittee may be eligible for reduced fees under rule. Send all correspondence requesting reduced fees to the Water Quality Division of ADEQ. Please reference the permit number, LTF number and why reduced fees are requested under rule.

This permit shall become effective on July 3, 2024.

This permit and the authorization to discharge shall expire on July 2, 2029.

Signed 7/3/2024

DocuSigned by:

A5AF6048FAC8426...

Josephine Maressa, Deputy Director
Water Quality Division
Arizona Department of Environmental Quality

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PART I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Effluent Limitations and Monitoring Requirements

1. The Permittee shall limit and monitor discharges from Outfall 001 as specified in Tables 1.a which follows.
 - a. Discharge of process wastewater is prohibited under this permit except as allowed under 40 CFR 440, Subpart J. Process wastewater is defined in 40 CFR 122.2.
 - b. The only allowable discharges from Outfall 001 are drainage water from historic workings associated with January Adit, drainage water from historic tailings, and stormwater. See definition of “historic” in Appendix A. Part B.
 - c. South32 Hermosa Inc. shall notify ADEQ the first time discharge from Outfall 001 occurs. See Part IV.C.
 - d. The design capacity of the discharging facility (WTP1) is 0.172 MGD.

Table 1.a. Effluent Limitations and Monitoring Requirements

| Parameter | Maximum Allowable Discharge Limitations (1) (2) | | | | Monitoring Requirement (3) (4) | |
|---|---|---------------|-----------------|---------------|--------------------------------|------------------|
| | Concentration Limits | | Mass Limits | | Monitoring Frequency | Sample Type (5) |
| | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum | | |
| Discharge Flow (MGD) | REPORT (6) | REPORT | --- | --- | Continuous | Metered |
| Cadmium (7) | 4.9 µg/L | 9.8 µg/L | --- | 3.9 g/day (8) | 1x/Month | 8-hour Composite |
| Copper (7) | 25 µg/L | 50 µg/L | --- | 11 g/day (8) | 1x/Month | 8-hour Composite |
| Hardness (CaCO ₃) - discharge (7) | REPORT [mg/L] | REPORT [mg/L] | --- | --- | 1x/Month | 8-hour Composite |
| Lead (7) | 15 µg/L | 30 µg/L | 9.8 g/day | 20 g/day | 1x/Month | 8-hour Composite |
| Mercury | 0.01 µg/L | 0.02 µg/L | 0.005 g/day | 0.01 g/day | 1x/Month | 8-hour Composite |
| Total Suspended Solids (TSS) | 20 mg/L | 30 mg/L | 13 kg/day | 20 kg/day | 1x/Month | 8-hour Composite |
| Zinc (7) | 193 µg/L | 388 µg/L | 126 g/day | 252 g/day (9) | 1x/Month | 8-hour Composite |
| pH (10) | Not less than 6.5 standard units (S.U.) nor greater than 9.0 S.U. | | | | 1x/week | Discrete |

Footnotes

- 1 µg/L = micrograms per liter; mg/L = milligrams per liter.
- 2 Metals discharge limits are for total recoverable metals unless specified.
- 3 If discharge is infrequent, see Part I.D for minimum effluent characterization monitoring requirements.
- 4 Testing must coincide with the Whole Effluent Toxicity Test (WET) samples, if any, taken during that monitoring period as per Part I.C, Table 3 of the permit. See Part III of the permit.
- 5 For the purposes of this permit, an “8-hour composite” sample has been defined as a flow-proportioned mixture of two or more discrete samples (aliquots) obtained at equal time intervals over an 8-hour period (if only two samples are collected, they should be taken approximately 8 hours apart). The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling.
- 6 Monitoring and reporting required. No limit set at this time. In addition to the average and maximum flows reported on the Discharge Monitoring forms, daily discharge flow shall be recorded on the Discharge Flow Record provided in Appendix B. See Part II.B for reporting requirements.
- 7 The discharge must be tested for hardness at the same time that these metal samples are taken. The effluent hardness from WTP1 ranged from 743 mg/L to 1040 mg/L as CaCO₃. Therefore, a hardness value of 400 mg/L (the maximum allowable hardness value that can be used to calculate standards, per Title 18, Chapter 11, Article 1, Appendix B, footnote d(ii)) was used to calculate the applicable limits for the hardness dependent metals. Please see the hardness definition in Appendix A, Part B.

- 8 The mass limits for cadmium and copper are wasteload allocations (WLA) from the 2003 Alum Gulch TMDL. WLAs from the TMDL are based on a baseflow discharge of 0.04 cfs from January Adit as only passive seepage from January Adit was considered during development of the 2003 TMDL.
 - 9 The mass limits for zinc are WQBELs which are more stringent than the 2003 Alum Gulch TMDL WLA for zinc.
 - 10 pH must be measured at the time of sampling and does not require use of a certified laboratory. Measurements must be obtained in accordance with the applicable method and must meet all method quality assurance/quality control requirements to be considered valid data.
2. The Permittee shall limit and monitor discharges from Outfall 002 as specified in Table 1.b which follows.
- a. Discharge of process wastewater is prohibited under this permit except as allowed under 40 CFR 440, Subpart J. Process wastewater is defined in 40 CFR 122.2.
 - b. The design capacity of the discharging facility (WTP2) is 6.48 MGD.

Table 1.b. Effluent Limitations and Monitoring Requirements

| Parameter | Maximum Allowable Discharge Limitations (1) (2) | | | | Monitoring Requirement (3) (4) | |
|---|---|---------------|-----------------|---------------|--------------------------------|------------------|
| | Concentration Limits | | Mass Limits | | | |
| | Monthly Average | Daily Maximum | Monthly Average | Daily Maximum | Monitoring Frequency | Sample Type (5) |
| Discharge Flow (MGD) | REPORT (6) | REPORT | --- | --- | Continuous | Metered |
| Cadmium (7) | 4.24 µg/L | 8.51 µg/L | 106 g/day | 214 g/day | 1x/Month | 8-hour Composite |
| Copper (7) | 17 µg/L | 34 µg/L | 420 g/day | 840 g/day | 1x/Month | 8-hour Composite |
| Hardness (CaCO ₃) - discharge (7) | REPORT [mg/L] | REPORT [mg/L] | --- | --- | 1x/Month | 8-hour Composite |
| Lead (7) | 8.71 µg/L | 17.4 µg/L | 213 g/day | 428 g/day | 1x/Month | 8-hour Composite |
| Mercury | 0.01 µg/L | 0.02 µg/L | 0.2 g/day | 0.4 g/day | 1x/Month | 8-hour Composite |
| Total Suspended Solids (TSS) | 20 mg/L | 30 mg/L | 490 kg/day | 740 kg/day | 1x/Month | 8-hour Composite |
| Zinc (7) | 133 µg/L | 267 µg/L | 3,270 g/day | 6,560 g/day | 1x/Month | 8-hour Composite |
| pH (8) | Not less than 6.5 standard units (S.U.) nor greater than 9.0 S.U. | | | | 1x/week | Discrete |

Footnotes

- 1 µg/L = micrograms per liter; mg/L = milligrams per liter.
- 2 Metals discharge limits are for total recoverable metals unless specified.
- 3 If discharge is infrequent, see Part I.D for minimum effluent characterization monitoring requirements.
- 4 Testing must coincide with the Whole Effluent Toxicity Test (WET) samples, if any, taken during that monitoring period as per Part I.C, Table 3 of the permit. See Part III of the permit.
- 5 For the purposes of this permit, an “8-hour composite” sample has been defined as a flow-proportioned mixture of two or more discrete samples (aliquots) obtained at equal time intervals over an 8-hour period (if only two samples are collected, they should be taken approximately 8 hours apart). The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling.
- 6 Monitoring and reporting required. No limit set at this time. In addition to the average and maximum flows reported on the Discharge Monitoring forms, daily discharge flow shall be recorded on the Discharge Flow Record provided in Appendix B. See Part II.B for reporting requirements.
- 7 The discharge must be tested for hardness at the same time that these metal samples are taken. Limits listed are based on the lower range of estimated WTP2 influent hardness of 258 mg/L as CaCO₃. This number may be adjusted once effluent hardness data becomes available. Please see the hardness definition in Appendix A, Part B.

8 pH must be measured at the time of sampling and does not require use of a certified laboratory. Measurements must be obtained in accordance with the applicable method and must meet all method quality assurance/quality control requirements to be considered valid data.

B. Trace Substance Monitoring

1. The permittee shall monitor discharges from Outfall 001 as specified in Table 2.a. Monitoring results above the Assessment Levels (ALs) listed below do not constitute a permit violation, but may trigger evaluation of Reasonable Potential (RP) by ADEQ. The permittee shall use an approved analytical method with a Limit of Quantitation (LOQ) lower than the AL values as described in Part II.A.5.

Table 2.a. Assessment Level Monitoring

| Parameter | Assessment Levels (1) (2) | | Monitoring Requirements (3) (4) | |
|---|---------------------------|---------------|---------------------------------|------------------|
| | Monthly Average | Daily Maximum | Monitoring Frequency | Sample Type |
| Antimony | 24.6 µg/L | 49.3 µg/L | 1x/Quarter | 8-hr. Composite |
| Arsenic | 30 µg/L | 60 µg/L | 1x/Quarter | 8-hr. Composite |
| Barium | 98,000 µg/L | 200,000 µg/L | 1x/Quarter | 8-hr. Composite |
| Beryllium | 4.3 µg/L | 8.7 µg/L | 1x/Quarter | 8-hr. Composite |
| Boron | 186,667 µg/L | 374,489 µg/L | 1x/Quarter | 8-hr. Composite |
| Chromium, total (5) | 1,000 µg/L | 2,000 µg/L | 1x/Quarter | 8-hr. Composite |
| Chromium VI (5) | 8.1 µg/L | 16 µg/L | 1x/Quarter | Discrete |
| Cyanide (as free cyanide) | 7.9 µg/L | 16 µg/L | 1x/Quarter | Discrete |
| Hardness (CaCO ₃) - discharge (6) | Report [mg/L] | Report [mg/L] | 1x/Quarter | 8-hr. Composite |
| Iron | 819 µg/L | 1643 µg/L | 1x/Quarter | 8-hr. Composite |
| Manganese | 130,667 µg/L | 262, 142 µg/L | 1x/Quarter | 8-hr. Composite |
| Nickel (6) | 138 µg/L | 277 µg/L | 1x/Quarter | 8-hr. Composite |
| Nitrate/Nitrite as N | Report [mg/L] | Report [mg/L] | 1x/Quarter | 8-hr. Composite |
| Nitrogen, Total Kjeldahl (TKN) | Report [mg/L] | Report [mg/L] | 1x/Quarter | 8-hour Composite |
| Selenium | 2 µg/L | 3 µg/L | 1x/Quarter | 8-hr. Composite |
| Silver (6) | 20 µg/L | 41 µg/L | 1x/Quarter | 8-hr. Composite |
| Thallium | 7.2 µg/L | 14 µg/L | 1x/Quarter | 8-hr. Composite |

Footnotes

- 1 Concentration values are calculated based on Arizona Water Quality Standards. Monitoring and reporting required.
- 2 All metals effluent Assessment Levels are for total recoverable metals, except for chromium VI, for which the assessment levels listed are dissolved.
- 3 Testing must coincide with the Whole Effluent Toxicity Test (WET) samples, if any, taken during that monitoring period as per Part I.C, Table 3 of the permit. See Part III of the permit.
- 4 If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.
- 5 If total chromium exceeds 8 µg/L, the permittee must conduct trace substance sampling for chromium VI pursuant to Table 2.a. for the remainder of the permit. Otherwise, monitoring for chromium VI is not required.
- 6 The discharge must be tested for hardness at the same time that these metal samples are taken. The effluent hardness from WTP1 ranged from 743 mg/L to 1040 mg/L as CaCO₃. Therefore, a hardness value of 400 mg/L (the maximum allowable hardness value that can be used to calculate standards, per Title 18, Chapter 11, Article 1, Appendix B, footnote d(ii)) was used to calculate the applicable assessment levels for the hardness dependent metals. This number may be adjusted once effluent hardness data becomes available. Please see the hardness definition in Appendix A, Part B.

- The permittee shall monitor discharges from Outfall 002 as specified in Table 2.b. Monitoring results above the Assessment Levels (ALs) listed below do not constitute a permit violation, but may trigger evaluation of Reasonable Potential (RP) by ADEQ. The permittee shall use an approved analytical method with a Limit of Quantitation (LOQ) lower than the AL values as described in Part II.A.5.

Table 2.b. Assessment Level Monitoring

| Parameter | Assessment Levels (1) (2) | | Monitoring Requirements (3) (4) | |
|---|---------------------------|---------------|---------------------------------|------------------|
| | Monthly Average | Daily Maximum | Monitoring Frequency | Sample Type |
| Antimony | 491 µg/L | 986 µg/L | 1x/Month | 8-hr. Composite |
| Arsenic | 123 µg/L | 246 µg/L | 1x/Month | 8-hr. Composite |
| Barium | 98,000 µg/L | 200,000 µg/L | 1x/Month | 8-hr. Composite |
| Beryllium | 4.3 µg/L | 8.7 µg/L | 1x/Month | 8-hr. Composite |
| Boron | 186,667 µg/L | 374,489 µg/L | 1x/Month | 8-hr. Composite |
| Chromium, total (5) | 1,000 µg/L | 2,000 µg/L | 1x/Month | 8-hr. Composite |
| Chromium VI (5) | 8.0 µg/L | 16 µg/L | 1x/Month | Discrete |
| Cyanide (as free cyanide) | 7.9 µg/L | 16 µg/L | 1x/Month | Discrete |
| Hardness (CaCO ₃) - discharge (6) | Report [mg/L] | Report [mg/L] | 1x/Month | 8-hr. Composite |
| Iron | 819 µg/L | 1640 µg/L | 1x/Month | 8-hr. Composite |
| Manganese | 130,667 µg/L | 262, 142 µg/L | 1x/Month | 8-hr. Composite |
| Nickel (6) | 95.2 µg/L | 190 µg/L | 1x/Month | 8-hr. Composite |
| Nitrate/Nitrite as N | Report [mg/L] | Report [mg/L] | 1x/Month | 8-hour Composite |
| Nitrogen, Total Kjeldahl (TKN) | Report [mg/L] | Report [mg/L] | 1x/Month | 8-hour Composite |
| Selenium | 2 µg/L | 3 µg/L | 1x/Month | 8-hr. Composite |
| Silver (6) | 9.6 µg/L | 19 µg/L | 1x/Month | 8-hr. Composite |
| Thallium | 75 µg/L | 150 µg/L | 1x/Month | 8-hr. Composite |

Footnotes

- Concentration values are calculated based on Arizona Water Quality Standards. Monitoring and reporting required.
- All metals effluent Assessment Levels are for total recoverable metals, except for chromium VI, for which the assessment levels listed are dissolved.
- Testing must coincide with the Whole Effluent Toxicity Test (WET) samples, if any, taken during that monitoring period as per Part I.C, Table 3 of the permit. See Part III of the permit.
- If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.
- If total chromium exceeds 8 µg/L, the permittee must conduct trace substance sampling for chromium VI pursuant to Table 2.b. for the remainder of the permit. Otherwise, monitoring for chromium VI is not required.
- The discharge must be tested for hardness at the same time that these metal samples are taken. Limits listed are based on the lower range of estimated WTP2 influent hardness of 258 mg/L as CaCO₃. This number may be adjusted once effluent hardness data becomes available. Please see the hardness definition in Appendix A, Part B.

C. Whole Effluent Toxicity Monitoring

- The permittee shall monitor discharges from Outfall 001 for Whole Effluent Toxicity (WET) as specified in Table 3.a. which follows. If toxicity is detected above an Action Level specified as follows, the permittee must perform follow-up testing and, as applicable, follow the TIE/TRE processes in Part III.E of the permit.

Table 3.a. WET Testing

| Effluent Characteristic (1) | Action Levels | | Monitoring Requirements | |
|--|-----------------------|--------------------|------------------------------|----------------|
| | Daily Maximum (2) (3) | Monthly Median (3) | Monitoring Frequency (6) (7) | Sample Type |
| Acute Toxicity (4) <i>Pimephales promelas</i> (Fathead minnow) | Fail | Fail | 1x/year | 8-hr Composite |
| Acute Toxicity (4) <i>Ceriodaphnia dubia</i> (Water flea) | Fail | Fail | 1x/year | 8-hr Composite |
| Chronic Toxicity <i>Pseudokirchneriella subcapitata</i> (Green algae) (5) | 1.6 TUC | 1.0 TUC | 1x/year | 8-hr Composite |
| Chronic Toxicity <i>Pimephales promelas</i> (Fathead minnow) | 1.6 TUC | 1.0 TUC | 1x/year | 8-hr Composite |
| Chronic Toxicity <i>Ceriodaphnia dubia</i> (Water flea) | 1.6 TUC | 1.0 TUC | 1x/year | 8-hr Composite |

2. The permittee shall monitor discharges from Outfall 002 for Whole Effluent Toxicity (WET) as specified in Table 3.b. which follows. If toxicity is detected above an Action Level specified as follows, the permittee must perform follow-up testing and, as applicable, follow the TIE/TRE processes in Part III.E of the permit.

Table 3.b. WET Testing

| Effluent Characteristic (1) | Action Levels | | Monitoring Requirements | |
|--|-----------------------|--------------------|------------------------------|----------------|
| | Daily Maximum (2) (3) | Monthly Median (3) | Monitoring Frequency (6) (7) | Sample Type |
| Acute Toxicity (4) <i>Pimephales promelas</i> (Fathead minnow) | Fail | Fail | 1x/Quarter | 8-hr Composite |
| Acute Toxicity (4) <i>Ceriodaphnia dubia</i> (Water flea) | Fail | Fail | 1x/Quarter | 8-hr Composite |
| Chronic Toxicity <i>Pseudokirchneriella subcapitata</i> (Green algae) (5) | 1.6 TUC | 1.0 TUC | 1x/Quarter | 8-hr Composite |
| Chronic Toxicity <i>Pimephales promelas</i> (Fathead minnow) | 1.6 TUC | 1.0 TUC | 1x/Quarter | 8-hr Composite |
| Chronic Toxicity <i>Ceriodaphnia dubia</i> (Water flea) | 1.6 TUC | 1.0 TUC | 1x/Quarter | 8-hr Composite |

Footnotes

- 1 See Part III for additional requirements for testing and reporting Whole Effluent Toxicity (WET).
- 2 Since completion of one chronic WET test takes more than 24 hours, the daily maximum is considered to be the highest allowable test result.
- 3 If chronic toxicity is detected above the Action Levels in this table or an acute test fails, the permittee must perform follow-up testing. See Part III for details.
- 4 The requirement for an acute test applies when duration of discharge doesn't allow for chronic tests to be conducted. See Part III.
- 5 Formerly known as *Selenastrum capricornutum* or *Raphidocelis subcapitata*.
- 6 If discharge is infrequent see Part I.D for minimum effluent characterization monitoring requirements.
- 7 Monitoring shall be conducted on samples collected concurrently with samples collected for monitoring required in Part I.A and B. See Part III.A.3.

D. Discharge Characterization Testing

1. The permittee shall monitor to characterize the effluent from WTP 1 (Outfall 001) for the parameters listed in Table 4.a. whether discharging or not, following completion of any performance testing and/or commissioning activities and so long as the treatment plant operates during the monitoring period. When the facility discharges, monitoring is to be conducted at the frequency indicated in Tables 1 through 3. No limits or ALs are established, but the LOQ must be low enough to allow comparison of the results to the applicable water quality standards (WQS). If a LOQ below the WQS cannot be achieved, then the permittee shall use the method expected to achieve the lowest LOQ, as defined in Appendix A of this permit. Samples are to be representative of any seasonal variation in the discharge:

Table 4.a. Discharge Characterization Testing—General Chemistry, Selected Metals, Trace Substances, and WET

| Parameter (1) | Reporting Units | Monitoring Requirements | |
|--------------------------------|-----------------|--------------------------|------------------|
| | | Monitoring Frequency (2) | Sample Type |
| Antimony | µg/L | 1x/6 months | 8-hour Composite |
| Arsenic | µg/L | 1x/6 months | 8-hour Composite |
| Barium | µg/L | 1x/6 months | 8-hour Composite |
| Beryllium | µg/L | 1x/6 months | 8-hour Composite |
| Boron | µg/L | 1x/6 months | 8-hour Composite |
| Cadmium | µg/L | 1x/6 months | 8-hour Composite |
| Chromium (3) | µg/L | 1x/6 months | 8-hour Composite |
| Chromium VI (3) | µg/L | 1x/6 months | Discrete |
| Copper | µg/L | 1x/6 months | 8-hour Composite |
| Fluoride | µg/L | 1x/6 months | 8-hour Composite |
| Iron | µg/L | 1x/6 months | 8-hour Composite |
| Lead | µg/L | 1x/6 months | 8-hour Composite |
| Manganese | µg/L | 1x/6 months | 8-hour Composite |
| Mercury | µg/L | 1x/6 months | 8-hour Composite |
| Nickel | µg/L | 1x/6 months | 8-hour Composite |
| Selenium | µg/L | 1x/6 months | 8-hour Composite |
| Silver | µg/L | 1x/6 months | 8-hour Composite |
| Thallium | µg/L | 1x/6 months | 8-hour Composite |
| Uranium | µg/L | 1x/6 months | 8-hour Composite |
| Zinc | µg/L | 1x/6 months | 8-hour Composite |
| Hardness | mg/L | 1x/6 months | 8-hour Composite |
| Cyanide (as free cyanide) | µg/L | 1x/6 months | Discrete |
| Nitrate/Nitrite (as N) | mg/L | 1x/6 months | 8-hour Composite |
| Nitrogen, Total Kjeldahl (TKN) | mg/L | 1x/6 months | 8-hour Composite |
| pH (4) | S.U. | 1x/6 months | Discrete |

| | | | |
|---|----------|-------------|------------------|
| Temperature (4) | °Celsius | 1x/6 months | Discrete |
| Total Suspended Solids (TSS) | mg/L | 1x/6 months | 8-hour Composite |
| Whole Effluent Toxicity - chronic (all 3 species) (5) | TUc | 1x/year | 8-hour Composite |

Footnotes

- 1 All metals analyses shall be for total recoverable metals, except chromium VI, which is dissolved.
 - 2 If more frequent monitoring of any of these parameters is required by another part of this permit, those sampling results may be used to satisfy Table 4 requirements.
 - 3 If total chromium exceeds 8 µg/L, the permittee must conduct sampling for chromium VI pursuant to Table 4 for the remainder of the permit. Otherwise, monitoring for chromium VI is not required.
 - 4 pH and temperature must be measured at the time of sampling and do not require use of a certified laboratory. Measurements must be obtained in accordance with the applicable method and must meet all method quality assurance/quality control requirements to be considered valid data.
 - 5 If chronic toxicity is detected above the Action Levels specified in Table 3 or an acute test fails, the permittee must perform follow-up testing and, as applicable, follow the TIE/TRE processes in Part III.E of the permit, whether discharging or not. See Part III for additional information on requirements for testing and reporting Whole Effluent Toxicity (WET).
2. The permittee shall monitor to characterize the effluent from WTP 2 (Outfall 002) for the parameters listed in Table 4.b. whether discharging or not, following completion of any performance testing and/or commissioning activities and so long as the treatment plant operates during the monitoring period. When the facility discharges, monitoring is to be conducted at the frequency indicated in Tables 1 through 3. No limits or ALs are established, but the LOQ must be low enough to allow comparison of the results to the applicable water quality standards (WQS). If a LOQ below the WQS cannot be achieved, then the permittee shall use the method expected to achieve the lowest LOQ, as defined in Appendix A of this permit. Samples are to be representative of any seasonal variation in the discharge:

Table 4.b. Discharge Characterization Testing—General Chemistry, Selected Metals, Trace Substances, and WET

| Parameter (1) | Reporting Units | Monitoring Requirements | |
|-----------------|-----------------|--------------------------|------------------|
| | | Monitoring Frequency (2) | Sample Type |
| Antimony | µg/L | 1x/Month | 8-hour Composite |
| Arsenic | µg/L | 1x/Month | 8-hour Composite |
| Barium | µg/L | 1x/Month | 8-hour Composite |
| Beryllium | µg/L | 1x/Month | 8-hour Composite |
| Boron | µg/L | 1x/Month | 8-hour Composite |
| Cadmium | µg/L | 1x/Month | 8-hour Composite |
| Chromium (3) | µg/L | 1x/Month | 8-hour Composite |
| Chromium VI (3) | µg/L | 1x/Month | Discrete |
| Copper | µg/L | 1x/Month | 8-hour Composite |
| Fluoride | µg/L | 1x/Month | 8-hour Composite |
| Iron | µg/L | 1x/Month | 8-hour Composite |
| Lead | µg/L | 1x/Month | 8-hour Composite |
| Manganese | µg/L | 1x/Month | 8-hour Composite |
| Mercury | µg/L | 1x/Month | 8-hour Composite |

| | | | |
|---|----------|----------|------------------|
| Nickel | µg/L | 1x/Month | 8-hour Composite |
| Selenium | µg/L | 1x/Month | 8-hour Composite |
| Silver | µg/L | 1x/Month | 8-hour Composite |
| Thallium | µg/L | 1x/Month | 8-hour Composite |
| Uranium | µg/L | 1x/Month | 8-hour Composite |
| Zinc | µg/L | 1x/Month | 8-hour Composite |
| Hardness | mg/L | 1x/Month | 8-hour Composite |
| Cyanide (as free cyanide) | µg/L | 1x/Month | Discrete |
| Nitrate/Nitrite (as N) | mg/L | 1x/Month | 8-hour Composite |
| Nitrogen, Total Kjeldahl (TKN) | mg/L | 1x/Month | 8-hour Composite |
| pH (4) | S.U. | 1x/Month | Discrete |
| Temperature (4) | °Celsius | 1x/Month | Discrete |
| Total Suspended Solids (TSS) | mg/L | 1x/Month | 8-hour Composite |
| Whole Effluent Toxicity - chronic (all 3 species) (5) | TUc | 1x/year | 8-hour Composite |

Footnotes

- 1 All metals analyses shall be for total recoverable metals, except chromium VI, which is dissolved.
- 2 If more frequent monitoring of any of these parameters is required by another part of this permit, those sampling results may be used to satisfy Table 4 requirements.
- 3 If total chromium exceeds 8 µg/L, the permittee must conduct sampling for chromium VI pursuant to Table 4 for the remainder of the permit. Otherwise, monitoring for chromium VI is not required.
- 4 pH and temperature must be measured at the time of sampling and do not require use of a certified laboratory. Measurements must be obtained in accordance with the applicable method and must meet all method quality assurance/quality control requirements to be considered valid data.
- 5 If chronic toxicity is detected above the Action Levels specified in Table 3 or an acute test fails, the permittee must perform follow-up testing and, as applicable, follow the TIE/TRE processes in Part III.E of the permit, whether discharging or not. See Part III for additional information on requirements for testing and reporting Whole Effluent Toxicity (WET).

E. Surface Water Quality Standards

1. The discharge shall be free from pollutants in amounts or combinations that, in the receiving waters (Alum Gulch, Outfall 001; and Harshaw Creek, Outfall 002):
 - a. Settle to form bottom deposits that inhibit or prohibit the habitation, growth or propagation of aquatic life;
 - b. Cause objectionable odor in the area in which the surface water is located;
 - c. Cause off-flavor in aquatic organisms;
 - d. Are toxic to humans, animals, plants or other organisms;
 - e. 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;
 - f. Change the color of the surface water from natural background levels or color (Alum Gulch, Outfall 001 only).
2. The discharge shall be free from oil, grease and other pollutants that float as debris, foam, or scum; or that cause a film or iridescent appearance on the surface of the water; or that cause a deposit on a shoreline, bank or aquatic vegetation.

3. The discharge shall not cause an increase in the ambient water temperature of more than 3.0 degrees Celsius.
4. The discharge shall not cause the dissolved oxygen concentration in the receiving water to fall below 6 mg/L for Alum Gulch (Outfall 001) and shall not fall below 3 mg/L from 3 hours after sunrise to sunset and 1 mg/L from sunset to 3 hours after sunrise for Harshaw Creek (Outfall 002), unless the percent saturation of oxygen remains equal to or greater than 90%.
5. The discharge shall not cause the receiving water to exceed 80 mg/L (Alum Gulch, Outfall 001 only) for suspended sediment concentration, except during or within 48 hours after a local storm event.

PART II. MONITORING AND REPORTING

A. Sample Collection and Analysis

1. Samples taken for the monitoring requirements specified in Part I shall be collected at the following locations:
 - a. Effluent samples shall be taken downstream from the last treatment process and prior to mixing with the receiving waters.
2. The permittee is responsible for the quality and accuracy of all data required under this permit.
3. The permittee shall keep a QA Manual on site that describes the sample collection and analyses processes. If the permittee collects samples or conducts sample analyses in house, the permittee shall develop a QA Manual that addresses these activities. If a third party collects and/or analyzes samples on behalf of the permittee, the permittee shall obtain a copy of the applicable QA procedures. The QA Manual shall be available for review by ADEQ upon request. The QA Manual shall be updated as necessary to reflect current conditions, and shall describe the following:
 - a. Project Management, including:
 - i. Purpose of sample collection and sample frequency;
 - ii. When and where samples will be collected;
 - iii. How samples will be collected;
 - iv. Laboratory(s) that will perform analyses;
 - v. Any field tests to be conducted (detail methods and specify equipment, including a description of any needed calibrations); and
 - vi. Pollutants or analytes being measured and for each, the permit-specific limits, Assessment Levels, or thresholds (e.g. the associated detection limits needed).
 - b. Sample collection procedures including:
 - i. Equipment to be used;
 - ii. Type and number of samples to be collected including QA/QC samples (i.e., background samples, duplicates, and equipment or field blanks);
 - iii. Types, sizes and number of sample bottles needed;
 - iv. Preservatives and holding times for the samples (see methods under 40 CFR 136 or 9 A.A.C. 14, Article 6 or any condition within this permit that specifies a particular test method);
 - v. Chain of Custody procedures.
 - c. Specify approved analytical method(s) to be used and include:
 - i. Limits of Detection (LOD) and Limits of Quantitation (LOQs);

- ii. Required quality control (QC) results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and
 - iii. Corrective actions to be taken by the permittee or the laboratory as a result of problems identified during QC checks.
 - d. How the permittee will perform data review; complete DMRs and records used to report results to ADEQ; resolve data quality issues; and identify limitations on the use of the data.
4. Sample collection, preservation and handling shall be performed as described in 40 CFR 136 including the referenced Edition of *Standard Methods for the Examination of Water and Wastewater*, or by procedures referenced in A.R.S. Title 9, Chapter 14 of the Arizona Department of Health Services (ADHS) Laboratory Licensure rules. The permittee shall outline the proper procedures in the QA Manual, and samples taken for this permit must conform to these procedures whether collection and handling is performed directly by the permittee or contracted to a third-party.
5. Analytical requirements
 - a. The permittee shall use a laboratory licensed by the ADHS Office of Laboratory Licensure and Certification that has demonstrated proficiency within the last 12 months under A.A.C. R9-14-609, for each parameter to be sampled under this permit. However, this requirement does not apply to parameters which require analysis at the time of sample accordance with A.A.C. 36-495.02(A)(3). (These parameters may include flow, dissolved oxygen, pH, temperature, and total residual chlorine.)
 - b. The permittee must utilize analytical methods specified in this permit. If no test procedure is specified, the permittee shall analyze the pollutant using:
 - i. A test procedure listed in 40 CFR 136 which is also approved under A.A.C. R9-14-610;
 - ii. An alternative test procedure approved by EPA as provided in 40 CFR 136 and which is also approved under A.A.C. R9-14-610;
 - iii. A test procedure listed in 40 CFR 136, with modifications allowed by EPA or approved as a method alteration by ADHS under A.A.C. R9-14-610C; or
 - iv. If no test procedure for a pollutant is available under (5)(b)(i) through (5)(b)(iii) above, any Method approved under A.A.C. R9-14-610(B) for wastewater may be used, except the use of field kits is not allowed unless otherwise specified in this permit. If there is no approved wastewater method for a parameter, any other method identified in 9 A.A.C. 14, Article 6 that will achieve appropriate detection and reporting limits may be used for analyses.
 - c. For results to be considered valid, all analytical work, including those tests conducted by the permittee at the time of sampling (see Part II.5.4.a), shall meet quality control standards specified in the approved methods.
 - d. The permittee shall use analytical methods with a Limit of Quantitation (LOQ) that is lower than the effluent limitations, Assessments Levels, Action Levels, or other water quality criteria, if any, specified in this permit. If all methods have LOQs higher than the applicable water quality criteria, the Permittee shall use the approved analytical method with the lowest LOQ.
 - e. The permittee shall use a standard calibration curve when applicable to the method, where the lowest standard point is equal to or less than the LOQ.
6. Mercury Monitoring - The permittee shall use an ADHS-certified low-level mercury analytical method such as EPA method 245.7 or 1631E to achieve a reporting limit at or below the discharge limitations or assessment levels for mercury as specified in this permit. The permittee shall also use a "clean hands/dirty hands" sampling technique such as EPA Method 1669 if necessary to achieve these reporting limits.

7. Metals Analyses - In accordance with 40 CFR 122.45(c), all effluent metals concentrations, with the exception of chromium VI, shall be measured as "total recoverable metals". Discharge Limits and Assessment Levels in this permit, if any, are for total metals, except for chromium VI for which the levels listed are dissolved.

B. Reporting of Monitoring Results

1. The permittee shall report monitoring results on Discharge Monitoring Report (DMR) to the ADEQ electronic submission portal myDEQ. The permittee shall submit results of all monitoring required by this permit in a format that will allow direct comparison with the limitations and requirements of this permit. If no discharge occurs during a reporting period, the permittee shall specify "No discharge" on the DMR. The results of all discharge analyses conducted during the monitoring period shall be included in determinations of the monthly average and daily maximums reported on the DMRs if the analyses were by methods specified in Part II.A above, as applicable.
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. If the facility is not yet constructed, the permittee shall note "Not constructed" on the DMRs. The permittee shall notify ADEQ within 30 days of commencing full operations, whether discharging or not. The notification shall be made in a letter and submitted with the DMRs for the first monitoring period in which the facility begins full operations. The reports required to be electronically submitted include, but are not limited to, the following:
 - a. Discharge Monitoring Reports
 - b. Whole Effluent Toxicity (WET) reports
 - c. Original copies of laboratory results
 - d. AZPDES discharge flow records
 - e. Bench sheets or similar documentation for field testing parameters
3. If requested to participate, the permittee shall submit the results of the annual NPDES DMR/QA Study to ADEQ and ADHS for all laboratories used in monitoring compliance with this permit by December 31st of each year. The permittee shall also conduct any proficiency testing required by the NPDES DMR-QA Study for those parameters listed in the study that the permittee analyzes in house or tests in the field at the time of sampling (these parameters may include pH and total residual chlorine). 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 North 17th Avenue
Phoenix, AZ 85007

4. For the purposes of reporting, the permittee shall use the Limit of Quantitation.
5. 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 outlined in Table 5.

6. 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 as outlined in Table 6.

Table 5. DMR Reporting Requirements for Daily Maximum Limits and Assessment Levels

| 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 | NODI (Q) |
| When the maximum value is less than the laboratory's LOD | NODI (B) |

Table 6. DMR Reporting Requirements for Monthly Average Limits / Assessment Levels

| For Monthly Average Limits/Assessment Levels | | The Permittee shall Report on the DMR |
|--|--|--|
| If only one sample is collected during the reporting period (weekly, monthly, quarterly, annually, etc.) (In this case, the sample result is also the weekly or 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 | All samples collected in the same calendar month must be averaged. <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 |

7. Mass values are to be calculated and reported using the following formulas: 1) Mass in kilograms per day = 3.785 x flow in MGD x concentration in mg/L, and 2) mass in grams per day = 3.785 x flow in MGD x concentration in µg/L. See the definition for "Monthly Average Mass Limit", "Weekly Average Mass Limit", or "Daily Maximum Mass Limit" in Appendix A. See definitions for "Monthly Average Mass Loading", "Weekly Average Mass Loading", and "Daily Maximum Mass Loading" in Appendix A for guidance on DMR reporting of mass-based DMR reporting.
8. For all field testing, or if the information below is not included on the laboratory reports required by Part II.B.2, the permittee shall attach a bench sheet or similar documentation to each DMR that includes, for all analytical results during the reporting period the following:
 - a. the analytical result,
 - b. the number or title of the approved analytical method, preparation and analytical procedure utilized by the field personnel or laboratory, and the LOD and LOQ for the analytical method for the parameter, and
 - c. any applicable data qualifiers using the most current revision of the Arizona Data Qualifiers (available online at: <http://www.azdhs.gov>).

C. Twenty-four Hour Reporting of Noncompliance

1. The permittee shall orally report to the Emergency Response Unit hotline at (602) 771-2330 any noncompliance that poses imminent threat to the environment or human health within 24 hours from the time the permittee becomes aware of the circumstances. The permittee shall also submit an electronic notification within 5 days of the noncompliance event using the myDEQ electronic portal provided by ADEQ. The permittee shall include in the written notification: a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following instances of noncompliance are subject to the 24-hour and 5-day reporting requirements and must be reported orally to the Emergency Response Unit hotline:

- a. Any unanticipated bypass which exceeds any effluent limitations in the permit,
 - b. Any upset which exceeds any effluent limitations in the permit, or
 - c. Any spill or discharge that poses an imminent threat to human health or the environment.
2. All other instances of noncompliance remain subject to the 24-hour and 5-day reporting requirements, and must call the ADEQ AZPDES hotline at (602) 771-1440. For example, an exceedance of any maximum daily limit for the parameters listed in Part 1.A Table 1 that does not poses an imminent threat to human health or the environment. Reporting under the terms of this paragraph will be deemed to satisfy the requirements of Appendix C, Part 13.g.
 3. The permittee shall retain the following monitoring records:
 - a. Date, exact location and time of sampling or measurements performed, preservatives used;
 - b. Individual(s) who performed the sampling or measurements;
 - c. Date(s) the analyses were performed;
 - d. Laboratory(s) which performed the analyses;
 - e. Analytical techniques or methods used;
 - f. Chain of custody forms;
 - g. Any comments, case narrative or summary of results produced by the laboratory. These comments should identify and discuss QA/QC analyses performed concurrently during sample analyses and should specify whether analyses met project requirements and 40 CFR 136. If results include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, sample receipt condition, or holding times and preservation, these records must also be retained.
 - h. Summary of data interpretation and any corrective action taken by the permittee.

PART III. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. General Conditions

1. The permittee shall conduct toxicity tests on an 8-hour composite samples of the final effluent at the frequencies specified in Part I. The requirement to conduct chronic toxicity testing is contingent upon the frequency or duration of discharges. See Part III.C.1 below for details. If chronic testing is conducted a separate acute test is not required. However, the acute endpoint shall be reported from the chronic test.

2. Final effluent samples must be taken following all treatment processes, including chlorination and dechlorination, and prior to mixing with the receiving water. The required WET tests must be performed on unmodified samples of final effluent. WET tests conducted on samples that are dechlorinated after collection are not acceptable for compliance with this permit.
3. Chemical testing for all the parameters listed in Parts I.A and B of this permit whose required sample type is a composite shall be performed on a split of one composite sample taken for an acute WET test or a split of at least one of the three composite samples taken for one chronic WET test. For those parameters listed in Parts I.A and B of this permit whose required sample type is discrete, the testing shall be performed on a discrete sample collected concurrently with one sample, discrete or composite, collected for an acute or chronic WET test.
4. Definitions related to toxicity are found in Appendix A.

B. Acute Toxicity

1. If chronic toxicity testing is not required per Part III.C.1, the permittee shall conduct 96-hour acute toxicity tests with renewal at 48 hours on two species; *Ceriodaphnia dubia* and *Pimephales promelas* using 100% effluent and a control. The acute test may be completed as a non-renewal 48-hour acute test when a second sample for renewal at 48 hours cannot be taken due to a cessation of the discharge after an acute test has been initiated.
2. The permittee must follow the USEPA 5th edition manual, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012) for all acute toxicity testing. The presence of chronic toxicity shall be estimated as specified in the method for each species tested.
3. The acute toxicity action level is any failing test result. The test fails if survival in 100% effluent is less than 90%, and is significantly different from control survival (which must be 90% or greater), as determined by hypothesis testing. Section 11.3 of the acute manual referenced above must be followed to determine Pass or Fail. Any result of Fail requires follow-up testing per Part III, Section E.
4. The permittee shall report results as Pass or Fail.

C. Chronic Toxicity

1. The permittee shall conduct short-term chronic toxicity tests on three species: the waterflea, *Ceriodaphnia dubia* (survival and reproduction test); the fathead minnow, *Pimephales promelas* (larval survival and growth test); and the green alga, *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum* or *Raphidocelis subcapitata*) (growth test). Since completion of the chronic WET test for *Ceriodaphnia dubia* and *Pimephales promelas* requires a minimum of three samples be taken for renewals, the chronic WET test will not be required during any given monitoring period in which the discharge(s) does not occur over seven consecutive calendar days and is (are) not repeated more frequently than every thirty days, except as specified in Part I.D (chronic WET testing for effluent characterization is required whether discharging or not). The discharge does not have to be continuous to fall under this requirement.
2. The permittee must follow the USEPA 4th edition manual, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821-R-02-013) for all chronic compliance toxicity testing.

3. The chronic toxicity action levels are any one test result greater than 1.6 TUc or any calculated monthly median value greater than 1.0 TUc. If chronic toxicity is detected above these values, follow-up testing is required per Part III, Section E. A chronic toxicity unit (TUc) shall be calculated as $TUc = 100/NOEC$.
4. The chronic WET test shall be conducted using a series of five dilutions and a control. The following dilution series must be used: 12.5, 25, 50, 75, and 100% effluent.

D. Quality Assurance

1. Effluent samples must be maintained between 0 and 6°C from collection until utilized in the toxicity testing procedure. When a composite sample is required, each aliquot making up the composite must be chilled after collection and throughout the compositing period. The single allowable exception is when a grab sample is delivered to the performing laboratory for test initiation no later than 4 hours following the time of collection.
2. Control and dilution water should be receiving water or lab water as appropriate, as described in the 40 CFR Part 136.3 approved method. If the dilution water used is different from the culture water, a second control, using culture water shall also be used.
3. Reference toxicity tests (a check of the laboratory and test organisms' performance) shall be conducted at least 1 time in a calendar month for each toxicity test method conducted in the laboratory during that month. Additionally, any time the laboratory changes its source of test organisms, a reference toxicity test must be conducted before or in conjunction with the first WET test performed using the organisms from the newer source. Reference toxicant testing must be conducted using the same test conditions as the effluent toxicity tests (i.e., same test duration, etc.).
4. If either the reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the 40 CFR Part 136.3 approved WET methods, then the permittee must re-sample and re-test within 14 days of receipt of the test results. The re-sampling and re-testing requirements include laboratory induced error in performing the test method.
5. The chronic reference toxicant and effluent tests must meet the upper and lower bounds on test sensitivity as determined by calculating the percent minimum significant difference (PMSD) for each test result. The test sensitivity bound is specified for each test method (see Section 10, Table 6 in EPA/821-R-02-013). There are five possible outcomes based on the PMSD result.
 - a. *Unqualified Pass*- The test's PMSD is within bounds and there is no significant difference between the means for the control and the effluent. The regulatory authority would conclude that there is no toxicity.
 - b. *Unqualified Fail*- The test's PMSD is larger than the lower bound (but not greater than the upper bound) in Table 6 and there is a significant difference between the means for the control and the effluent. The regulatory authority would conclude that there is toxicity.
 - c. *No Significant Difference in Test Controls* - The test's PMSD exceeds the upper bound in Table 6 and there is no significant difference between the means for the control and the effluent. The test is considered invalid. An effluent sample must be collected and another toxicity test must be conducted within 14 days of receipt of the test results.

- d. *Significant Difference in Test Controls* - The test's PMSD exceeds the upper bound in Table 6 and there is a significant difference between the means for the control and the effluent. The test is considered valid. The regulatory authority will conclude that there is toxicity.
- e. *Very Small but Significant Difference*- The relative difference between the means for the control and effluent is smaller than the lower bound in Table 6 and this difference is statistically significant. The test is acceptable and the NOEC should be determined.

E. Toxicity Identification Evaluation (TIE)/Toxicity Reduction Evaluation (TRE) Process

1. If acute and/or chronic toxicity is detected above a WET action level specified in this permit and the source of toxicity is known (for instance, a temporary plant upset), the permittee shall conduct one follow-up test within two weeks of receipt of the sample results that exceeded the action level. The permittee shall use the same test and species as the failed toxicity test. For intermittent discharges, the follow-up test shall be conducted whether discharging or not. If toxicity is detected in the follow-up, the permittee shall immediately begin developing a TRE plan and submit the plan to ADEQ for review and approval within 30 days after receipt of the toxic result. Requirements for the development of a TRE are listed in paragraph 3 below. The permittee must implement the TRE plan as approved and directed by ADEQ.
2. If acute and/or chronic toxicity is detected above an action level specified in this permit and the source of toxicity is unknown, the permittee shall begin additional toxicity monitoring within two weeks of receipt of the sample results that exceeded the action level. The permittee shall conduct one WET test approximately every other week until either a test exceeds an action level (or limit) or four tests have been completed. The follow-up tests must use the same test and species as the failed toxicity test. For intermittent discharges, the first follow-up test shall be conducted whether discharging or not; the subsequent three follow-up tests shall be conducted during the next three discharge events.
 - a. If none of the four tests exceed a WET action level or limit, then the permittee may return to the routine WET testing frequency specified in this permit.
 - b. If a WET action level or limit is exceeded in any of the additional tests, the permittee shall immediately begin developing a TRE plan and submit the plan to ADEQ for review and approval within 30 days after receipt of the toxic result. Requirements for the development of a TRE are listed in subsection 3, below. The permittee must implement the TRE plan as approved and directed by ADEQ.
3. The permittee shall use the EPA guidance manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, 1999 (EPA/833/B-99/002) in preparing a TRE plan. The TRE plan shall include, at a minimum, the following:
 - a. Further actions to investigate and identify the causes of toxicity, if unknown. The permittee may initiate a TIE as part of the TRE process using the following EPA manuals as guidance: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, 1992 (EPA/600/6-91/005F); *Methods for Aquatic Toxicity Identification Evaluations: Phase I, Toxicity Characterization Procedures*, 2nd Edition, 1991 (EPA/600/6-91/003); *Methods for Aquatic Toxicity Identification Evaluations: Phase II, Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity*, 1993 (EPA/600/R-92/080); and *Methods for Aquatic Toxicity Identification Evaluations: Phase III, Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, 1993 (EPA/600/R-92/081).

- b. Action the permittee will take to mitigate the impact of the discharge and to prevent the recurrence of toxicity; and
- c. A schedule for implementing these actions.

F. WET Reporting

1. The permittee shall report chronic toxicity results on DMRs in Chronic Toxicity Units (TUC). The TUC for DMR reporting shall be calculated as $TUC = 100/NOEC$.
2. In addition to reporting WET results on DMRs, the permittee shall submit a copy of the full lab report(s) for all WET testing conducted during the monitoring period covered by the DMR. The lab report should report TUC as $100/NOEC$ **and** as $100/IC_{25}$. If the lab report does not contain any of the following items, then these must also be supplied in a separate attachment to the report: 1) sample collection and test initiation dates, 2) the results of the effluent analyses for all parameters required to be tested concurrently with WET testing as defined in Part I.A and B, Tables 1.a., 1.b., 1.c., 2.a., and 2.b., and Part III.A.3 of this permit, and 3) copies of completed "AZPDES Discharge Flow Records" for the months in the WET monitoring period.
3. WET lab reports and any required additional attachments shall be submitted to ADEQ by the 28th day of the month following the end of the WET monitoring period, or upon request.

PART IV. SPECIAL CONDITIONS

A. Reopener

1. This permit may be modified per the provisions of A.A.C. R18-9-B906, and R18-9-A905 which incorporates 40 CFR Part 122. This permit may be reopened 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.

B. Translator Study

1. The permittee may perform a translator study on one or more metals for which effluent limits are established in this permit to demonstrate what portion of metal in the effluent will be present in dissolved form in the receiving water. A translator study measures concurrently the concentration of total and dissolved metal in the same effluent sample. Effluent hardness must also be measured during the study. The permittee must submit a sampling analysis plan to ADEQ for approval prior to collecting samples for the study. The permittee may submit the results of the study to ADEQ and request a permit modification. ADEQ may review the study and may use the study results to modify total recoverable effluent limits for the metal(s) addressed in the translator study through a permit modification. Modifying an effluent limit based on the results of an approved translator study will not be considered anti-backsliding.

C. Notification Requirement for First Discharge from Outfall 001

1. South32 Hermosa Inc. shall notify ADEQ the first time discharge from Outfall 001 occurs.
2. The notification shall be provided to AZPDES@azdeq.gov.
3. The notification shall provide the date the first discharge occurred.
4. The notification shall be provided to ADEQ within 5 days of the discharge occurring.

Appendix A. Part A: Acronyms

| | |
|----------|---|
| A.A.C. | Arizona Administrative Code |
| ADEQ | Arizona Department of Environmental Quality |
| ADHS | Arizona Department of Health Services |
| EQ | Exceptional Quality (biosolids) |
| AZPDES | Arizona Pollutant Discharge Elimination System |
| A.R.S. | Arizona Revised Statutes |
| CFR | Code of Federal Regulations |
| CFU | Colony Forming Units |
| Director | The Director of ADEQ or any authorized representative thereof |
| DMR | Discharge Monitoring Report |
| EPA | The U.S. Environmental Protection Agency |
| kg/day | Kilograms per day |
| MGD | Million Gallons per Day |
| mg/L | Milligrams per Liter, also equal to parts per million (ppm) |
| MPN | Most Probable Number |
| NPDES | National Pollutant Discharge Elimination System |
| PFU | Plaque-Forming Unit |
| QA | Quality Assurance |
| SSU | Sewage Sludge Unit |
| TBEL | Technology-based Effluent Limitation |
| µg/L | Micrograms per Liter, also equal to parts per billion (ppb) |
| WQBEL | Water quality-based Effluent Limitation |

Appendix A. Part B: Definitions

| | |
|------------------------------|---|
| Acute Toxicity Test | A test used to determine the concentration of effluent or ambient waters that produces an adverse effect (lethality) on a group of test organisms during a short-term exposure (e.g., 24, 48, or 96 hours). Acute toxicity is measured using statistical procedures (e.g., pint estimate techniques or hypothesis testing) and is reported as PASS/FAIL or in TU _a s, where TU _a = 100/LC ₅₀ . |
| Acute-to Chronic Ratio (ACR) | Is the ratio of the acute toxicity of an effluent or a toxicant to its chronic toxicity. It is used as a factor for estimating chronic toxicity on the basis of acute toxicity data, or for estimating acute toxicity on the basis of chronic toxicity data. |
| Chronic Toxicity Test | A test in which sublethal effects (e.g., reduced growth or reproduction) are measured in addition to lethality. Chronic toxicity is measured as TU _c = 100/NOEC or TU _c = 100/EC _p or 100/IC _p . The IC _p and EC _p value should be the approximate equivalent of the NOEC calculated by hypothesis testing for each test method. |
| Composite Sample | A sample that is formed by combining a series of individual, discrete samples of specific volumes at specified intervals. Composite samples characterize the quality of a discharge over a given period of time. Although, composite samples can be time-weighted or flow-weighted, this permit requires the collection of flow-proportional composite samples. This means that samples are collected and combined using aliquots in proportion to flow rather than time. Also see Flow-Proportional Composite. |

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| Daily Maximum Concentration Limit | The maximum allowable discharge of a pollutant in a calendar day as measured on any single discrete sample or composite sample. |
| Daily Maximum Mass Limit | The maximum allowable total mass of a pollutant discharged in a calendar day. |
| Daily Mass Loading | The mass loading reported against the daily maximum mass limit. The measured daily pollutant discharges by mass. Use the flow observed on the day of sample collection. If there are multiple samples collected within the monitoring period, calculate the daily mass loading as above for each day sampling occurred. Report the highest mass value. |
| Discrete or Grab Sample | An individual sample of at least 100 mL collected from a single location, or over a period of time not exceeding 15 minutes. |
| Effect Concentration Point (ECP) | A point estimate of the toxicant (or effluent) concentration that would cause an observable adverse effect (e.g., survival or fertilization) in a given percent of the test organisms, calculated from a continuous model (e.g., USEPA Probit Model). |
| Effluent Dependent Water | Effluent Dependent Water means a surface water or portion of a surface water that consists of a point source discharge without which the surface water would be ephemeral. An effluent dependent water may be perennial or intermittent depending on the volume and frequency of the point source discharge of treated wastewater. |
| Ephemeral Water | Ephemeral water means a surface water or portion of surface water that flows or pools only in direct response to precipitation. |
| Flow Proportional Composite Sample | A sample that combines discrete samples collected over time, based on the flow of the discharge being sampled. There are two methods used to collect this type of sample. One collects a constant sample volume at time intervals that vary based on stream flow. The other collects discrete samples that are proportioned into aliquots of varying volumes based on stream flow, at constant time intervals (i.e. flow-weighted composite sample). |
| Hardness | The sum of the calcium and magnesium concentrations, expressed as calcium carbonate (CaCO ₃) in milligrams per liter. |
| Historic | For the purposes of this permit, historic means created before December 3, 1982, which is the date effluent limitation guidelines applicable to ore mining and dressing (40 CFR Part 440, Subpart J) were promulgated. |
| Hypothesis Testing | A statistical technique (e.g., Dunnetts test) that determines what concentration is statistically different from the control. Endpoints determined from hypothesis testing are NOEC and LOEC. The two hypotheses commonly tested in WET are: Null hypothesis (H ₀): The effluent is not toxic. Alternative hypothesis (H _a): The effluent is toxic. |
| Impaired Water | Impaired water means a protected surface water for which credible scientific data exists that satisfies the requirements of section 49-232, and that, in the case of waters of the U.S., demonstrate that the water should be identified pursuant to 33 United States Code section 1313(d) and the regulations implementing that statute |
| Inhibition Concentration (IC) | A point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., USEPA Interpolation Method). IC25 is a point estimate of the toxicant |

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| | concentration that would cause a 25% reduction in a non-lethal biological measurement. |
| LC50 | The toxicant (or effluent) concentration that would cause death in 50 percent of the test organisms. |
| Limit of Quantitation (LOQ) | The minimum levels, concentrations, or quantities of a target variable such as an analyte that can be reported with a specific degree of confidence. The calibration point shall be at or below the LOQ. The LOQ is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all of the method-specified sample weights, volumes, and processing steps have been followed. |
| Limit of Detection (LOD) | An analyte and matrix-specific estimate of the minimum amount of a substance that the analytical process can reliably detect with a 99% confidence level. This may be laboratory dependent and is developed according to R9014-615(C)(7). |
| Method Detection Limit (MDL) | See LOD |
| Mine | Per 40 CFR 440.141(a)(8), "mine" means a place where work or other activity related to the extraction or recovery of ore is performed. |
| Mine drainage | Per 40 CFR 440.141(a)(10), "mine drainage" means any water drained, pumped or siphoned from a mine. |
| Monthly or Weekly Average Concentration Limit | Other than for bacteriological testing, means the highest allowable average calculated as an arithmetic mean of consecutive measurements made during calendar month or week, respectively. If pollutant monitoring for a monthly average limit occurred over multiple months within a reporting period, calculate the monthly average as above for each monthly sampling that occurred. Report the highest value. The "monthly or weekly average concentration limit" for <i>E. coli</i> bacteria means the highest allowable average calculated as the geometric mean of a minimum of four (4) measurements made during a calendar month or week, respectively. The geometric mean is the nth root of the product of n numbers. For either method (CFU or MPN), when data are reported as "0" or non-detect then input a "1" into the calculation for the geometric mean. |
| Monthly Average Mass Limit | The highest allowable value that shall be obtained by taking the total mass discharged during a calendar month divided by the number of days in the month that the facility was discharging. |
| Monthly Average Mass Loading | The mass loading reported against the monthly average mass limit. The monthly average value shall be determined by the summation of all the measured pollutant discharges by mass divided by the number of days during the month when the measurements were made. If monitoring is required less frequently than monthly, calculate the average monthly mass loading for any month that sampling occurred. Report the highest monthly average within the monitoring period. |
| Non-Historic | For the purposes of this permit, non-historic means created after December 3, 1982, which is the date effluent limitation guidelines applicable to ore mining and dressing (40 CFR Part 440, Subpart J) were promulgated. |
| No Observed Effect Concentration (NOEC) | The highest tested concentration of effluent or toxicant, that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicant at which the values for the observed responses are <u>not</u> statistically significant different from the controls). |

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| Point Estimate Techniques | As Probit, Interpolation Method, Spearman-Karber are used to determine the effluent concentration at which adverse effects (e.g., fertilization, growth or survival) occurred. For example, concentration at which a 25 percent reduction in fertilization occurred. |
| Point Source | Point Source means any discernible, confined and discrete conveyance, including, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft from which pollutants are or may be discharged to a protected surface water. Point source does not include return flows from irrigated agriculture. |
| Protected Surface Waters | Protected Surface Waters means waters of the State listed on the protected surface water list under Section 49-221, Subsection G and all WOTUS. |
| Reference Toxicant Test | A toxicity test conducted with the addition of a known toxicant to indicate the sensitivity of the organisms being used and demonstrate a laboratory's ability to obtain consistent results with the test method. Reference toxicant data are part of the routine QA/QC program to evaluate the performance of laboratory personnel and test organisms. |
| Significant Difference | Defined as statistically significant difference (e.g., 95% confidence level) in the means of two distributions of sampling results. |
| Single Concentration Acute Test | A statistical analysis comparing only two sets of replicate observations. In the case of WET, comparing only two test concentrations (e.g., a control and 100% effluent). The purpose of this test is to determine if the 100% effluent concentration differs from the control (i.e., the test passes or fails). |
| Submit | As used in this permit, means post-marked, documented by other mailing receipt, sent electronically, or hand-delivered to ADEQ. |
| Surface Water Quality Standards | Surface Water Quality Standards means a standard adopted for a protected surface water pursuant to Section 49-221 and, in the case of WOTUS, pursuant to Section 49-222. |
| Test Acceptability Criteria (TAC) | Specific criteria for determining whether toxicity tests results are acceptable. The effluent and reference toxicant must meet specific criteria as defined in the test method. |
| Ton | A net weight of 2000 pounds and is known as a short ton. |
| Total Maximum Daily Loads (TMDLs) | Total Maximum Daily Loads (TMDLs) is an estimation of the total amount of a pollutant from all sources that may be added to a water, while still allowing the water to achieve and maintain applicable surface water quality standards. Each total maximum daily load shall include allocations for sources that contribute the pollutant to the water. Total Maximum Daily Loads for waters of the U.S. shall meet the requirements of section 303(d) of the Clean Water Act (33 USC 1313(d)) and regulations implementing that statute to achieve applicable surface water quality standards. |
| Toxic Unit (TU) | A measure of toxicity in an effluent as determined by the acute toxicity units or chronic toxicity units measured. Higher the TUs indicate greater toxicity. |
| Toxicity Identification Evaluation (TIE) | A set of procedures used to identify the specific chemical(s) causing effluent toxicity. |
| Toxicity Reduction Evaluation (TRE) | A site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, |

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| | evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity. |
| Toxicity Test | A procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect of a specific chemical or effluent on exposed test organisms. |
| Waters of the United States (WOTUS) | Waters of the United States (WOTUS) means protected surface waters as defined by Section 502 of the Clean Water Act. |
| Weekly Average Mass Limit | The highest allowable value that shall be obtained by taking the total mass discharged during a calendar week divided by the number of days in the week that the facility was discharging. |
| Weekly Average Mass Loading | The mass loading reported against the weekly average mass limit. The weekly average value shall be determined by the summation of all the measured pollutant discharges by mass divided by the number of days during the week when the measurements were made. If monitoring is required less frequently than weekly, calculate the weekly average mass loading for any week that sampling occurred. Report the highest weekly average within the monitoring period. |
| WOTUS Protected Surface Water | WOTUS protected surface water means a protected surface water that is a WOTUS. |
| Whole Effluent Toxicity | The total toxic effect of an effluent measured directly with a toxicity test. |

Appendix B. AZPDES Discharge Flow Record

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| January Mine Hermosa Project—Water Treatment Plant 1—AZ0026387 | | | |
| Discharge to Upper Alum Gulch in the Santa Cruz River Basin At: | | | |
| Outfall No: | 001 | | |
| Location: | Latitude 31° 28' 15" N, Longitude 110° 43' 43" W | | |
| Month: | | Year: | |
| Date: | Flow Duration ⁽¹⁾ (Total hours per day) | Flow Rate ⁽²⁾ (Total MGD per day) | |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
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| 27 | | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |
| 31 | | | |
| Comment: | | | |

Footnotes

- 1 Total time of discharge in hours per day. If actual time is not available, use an estimate of flow duration.
- 2 Report flow discharge in MGD. If no discharge occurs on any given day, report 'ND' for the flow for that day.

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| January Mine Hermosa Project—Water Treatment Plant 2—AZ0026387 | | | |
| Discharge to Lower Harshaw Creek in the Santa Cruz River Basin At: | | | |
| Outfall No: | 002 | | |
| Location: | Latitude 31° 27' 57" N, Longitude 110° 43' 12" W | | |
| Month: | | Year: | |
| Date: | Flow Duration ⁽¹⁾ (Total hours per day) | Flow Rate ⁽²⁾ (Total MGD per day) | |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
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| 26 | | | |
| 27 | | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |
| 31 | | | |
| Comment: | | | |

Footnotes

- 1 Total time of discharge in hours per day. If actual time is not available, use an estimate of flow duration.
- 2 Report flow discharge in MGD. If no discharge occurs on any given day, report 'ND' for the flow for that day.

Appendix C. Standard AZPDES Permit Conditions & Notifications

(Updated as of February 2, 2004)

1. Duty to Reapply—[R18-9-B904(B)]

Unless the Permittee permanently ceases the discharging activity covered by this permit, the Permittee shall reapply, submit a new application, 180 days before the existing permit expires. ADEQ must receive the new application at least 180 days before permit expiration in order to start the re-application process.
2. Applications—[R18-9-A905(A)(1)(C) which incorporates 40CFR 122.22]
 - a. All applications shall be signed as follows:
 - i. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - A. A president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy-or decision-making functions for the corporation, or
 - B. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
 - ii. For partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - iii. For a municipality, State, Federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
 - b. All reports required by permits and other information requested by the Director shall be signed by a person described in paragraph (a) of this Section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - i. The authorization is made in writing by a person described in paragraph (a) of this section;
 - ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,
 - iii. The written authorization is submitted to the Director.
 - c. Changes to Authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

- d. Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3. Duty to Comply - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(a)(i) and A.R.S. §49- 262, 263.01, and 263.02.]
- a. The Permittee shall comply with all conditions of this permit and any standard and prohibition required under A.R.S. Title 49, Chapter 2, Article 3.1 and A.A.C. Title 18, Chapter 9, Articles 9 and 10. For discharges to a WOTUS, any permit noncompliance constitutes a violation of the Clean Water Act; A.R.S. Title 49, Chapter 2, Article 3.1; and A.A.C. Title 18, Chapter 9, Articles 9 and 10, and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or denial of a permit renewal application.
- b. The issuance of this permit does not waive any federal, state, county, or local regulations or permit requirements with which a person discharging under this permit is required to comply.
- c. The Permittee shall comply with the effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulation that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- d. Civil Penalties. A.R.S. § 49-262(C) provides that any person who violates any provision of A.R.S. Title 49, Chapter 2, Article 3.1 or a rule, permit, discharge limitation or order issued or adopted under A.R.S. Title 49, Chapter 2, Article 3.1 is subject to a civil penalty not to exceed \$25,000 per day per violation.
- e. Criminal Penalties. Any a person who violates a condition of this permit, or violates a provision under A.R.S. Title 49, Chapter 2, Article 3.1, or A.A.C. Title 18, Chapter 9, Articles 9 and 10 is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which may include the possibility of fines and/or imprisonment.
4. Need to Halt or Reduce Activity Not a Defense—[R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(c)]
- It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
5. Duty to Mitigate - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(d)]
- The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
6. Proper Operation and Maintenance - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(e)]
- The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
7. Permit Actions - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(f)]

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

8. Property Rights - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(g)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Duty to Provide Information - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(h)]

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

10. Inspection and Entry [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(i)]

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and such other documents as may be required by law, to:

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms of the permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring equipment or control equipment), practices or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by A.R.S. Title 49, Chapter 2, Article 3.1, and A.A.C. Title 18, Chapter 9, Articles 9 and 10, any substances or parameters at any location

11. Monitoring and Records - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(j)]

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application, except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503). This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
 - i. The date, exact place and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) the analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.

- d. Monitoring must be conducted according to test procedures specified in this permit. If a test procedure is not specified in the permit, then monitoring must be conducted according to test procedures approved under A.A.C. R18-9-A905(B) including those under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 (for sludge).
- e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both for first conviction. For a second conviction, such a person is subject to a fine of not more than \$20,000 per day of violation, or imprisonment for not more than four years, or both.

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which includes the possibility of fines and/or imprisonment.

- 12. Signatory Requirement - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(k)]
 - a. All applications, reports, or information submitted to the Director shall be signed and certified. (See 40 CFR 122.22 incorporated at R18-9-A905(A)(1)(c))
 - b. The CLEAN WATER ACT provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both for a first conviction. For a second conviction, such a person is subject to a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four years, or both.
- 13. Reporting Requirements - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(l)]
 - a. Planned changes. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations of additions to the permitted facility. Notice is required only when:
 - i. The alteration or addition to a permitted facility that discharges to a WOTUS, may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (incorporated by reference at R18-9-A905(A)(1)(e)); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1) (incorporated by reference at R18-9-A905(A)(3)(b)).
 - iii. The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
 - b. Anticipated noncompliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
 - c. Transfers. (R18-9-B905) This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under Arizona Revised Statutes and the Clean Water Act.

- d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - i. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
 - ii. If the Permittee monitors any pollutant more frequently than required by the permit, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR, or sludge reporting form specified by the Director.
 - iii. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
 - e. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
 - f. Twenty-four hour reporting.
 - i. The Permittee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
 - ii. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - A. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(g) which is incorporated by reference at R18-9-A905(A)(3)(a)).
 - B. Any upset which exceeds any effluent limitation in the permit.
 - C. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See 40 CFR 122.44(g) which is incorporated by reference at R18-9-A905(A)(3)(d)).
 - g. Other noncompliance. The Permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.
 - h. Other information. Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.
14. Bypass - [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(m)]
- a. Definitions
 - i. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
 - ii. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

- b. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of paragraphs (c) and (d) of this section.
 - c. Notice.
 - i. Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
 - ii. Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required in paragraph (f)(2) of section 13 (24-hour notice).
 - d. Prohibition of bypass.
 - i. Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:
 - A. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - B. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - C. The Permittee submitted notices as required under paragraph (c) of this section.
 - ii. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (d)(1) of this section.
15. Upset - [A.R.S. §§49-255(8) and 255.01(E), R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(n)]
- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
 - b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - c. Conditions necessary for a demonstration of upset. A Permittee who wishes to establish the affirmative defenses of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the Permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The Permittee submitted notice of the upset as required in paragraph (f)(2) of Section 13 (24-hour notice).
 - iv. The Permittee has taken appropriate measure including all reasonable steps to minimize or prevent any discharge or sewage sludge use or disposal that is in violation of the permit and that has a reasonable likelihood of adversely affecting human health or the environment per A.R.S. § 49-255.01(E)(1)(d).

- d. Burden of proof. In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.
16. Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers - [R18-9-A905(A)(3)(b) which incorporates 40 CFR 122.42(a)]
- In addition to the reporting requirements under 40 CFR 122.41(l) (which is incorporated at R18-9-A905(A)(3)(a)), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- i. One hundred micrograms per liter (100 µg/l);
- ii. hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
- iii. Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7) (which is incorporated at R18-9-A905(A)(1)(b)); or
- iv. The level established by the Director in accordance with 40 CFR 122.44(f) (which is incorporated at R18-9-A905(A)(3)(d)).
- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- i. Five hundred micrograms per liter (500 µg/l);
- ii. One milligram per liter (1 mg/l) for antimony;
- iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7)(which is incorporated at R18-9-A905(A)(1)(b));
- iv. The level established by the Director in accordance with 40 CFR 122.44(f) (which is incorporated at R18-9-A905(A)(3)(d)).
17. Publicly Owned Treatment Works - [R18-9-A905(A)(3)(b) which incorporates 40 CFR 122.42(b)]

This section applies only to publicly owned treatment works as defined at ARS § 49-255(5).

- a. All POTW's must provide adequate notice to the Director of the following:
- i. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CLEAN WATER ACT if it were directly discharging those pollutants; and
- ii. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- iii. For the purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

Publicly owned treatment works may not receive hazardous waste by truck, rail, or dedicated pipe except as provided under 40 CFR 270. Hazardous wastes are defined at 40 CFR 261 and include any mixture containing any waste listed under 40 CFR 261.31 - 261.33. The Domestic Sewage Exclusion (40 CFR 261.4) applies only to wastes mixed with domestic sewage in a sewer leading to a publicly owned

treatment works and not to mixtures of hazardous wastes and sewage or septage delivered to the treatment plant by truck.

18. Reopener Clause - [R18-9-A905(A)(3)(d) which incorporates 40 CFR 122.44(c)]

This permit shall be modified or revoked and reissued to incorporate any applicable effluent standard or limitation or standard for sewage sludge use or disposal under sections 301(b)(2)(C), and (D), 304(b)(2), 307(a)(2) and 405(d) which is promulgated or approved after the permit is issued if that effluent or sludge standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant or sludge use or disposal practice not limited in the permit.

19. Privately Owned Treatment Works - [R18-9-A905(A)(3)(d) which incorporates 40 CFR 122.44]

This section applies only to privately owned treatment works as defined at 40 CFR 122.2.

- a. Materials authorized to be disposed of into the privately owned treatment works and collection system are typical domestic sewage. Unauthorized material are hazardous waste (as defined at 40 CFR Part 261), motor oil, gasoline, paints, varnishes, solvents, pesticides, fertilizers, industrial wastes, or other materials not generally associated with toilet flushing or personal hygiene, laundry, or food preparation, unless specifically listed under "Authorized Non-domestic Sewer Dischargers" elsewhere in this permit.
- b. It is the Permittee's responsibility to inform users of the privately owned treatment works and collection system of the prohibition against unauthorized materials and to ensure compliance with the prohibition. The Permittee must have the authority and capability to sample all discharges to the collection system, including any from septic haulers or other unsewered dischargers, and shall take and analyze such samples for conventional, toxic, or hazardous pollutants when instructed by the permitting authority. The Permittee must provide adequate security to prevent unauthorized discharges to the collection system.
- c. Should a user of the privately owned treatment works desire authorization to discharge non-domestic wastes, the Permittee shall submit a request for permit modification and an application, pursuant to 40 CFR 122.44(m), describing the proposed discharge. The application shall, to the extent possible, be submitted using ADEQ Forms 1 and 2C, unless another format is requested by the permitting authority. If the privately owned treatment works or collection system user is different from the Permittee, and the Permittee agrees to allow the non-domestic discharge, the user shall submit the application and the Permittee shall submit the permit modification request. The application and request for modification shall be submitted at least 6 months before authorization to discharge non-domestic wastes to the privately owned treatment works or collection system is desired.

20. Transfers by Modification - [R18-9-B905]

Except as provided in section 21, a permit may be transferred by the Permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made under R18-9-B906, to identify the new Permittee and incorporate such other requirements as may be necessary.

21. Automatic Transfers [R18-9-B905]

An alternative to transfers under section 20, any AZPDES permit may be automatically transferred to a new Permittee if:

- a. The current Permittee notifies the Director at least 30 days in advance of the proposed transfer date;
- b. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
- c. The Director does not notify the existing Permittee and the proposed new Permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under R18-9-B906(B).

22. Minor Modification of Permits [R18-9-B906(B)]

Upon the consent of the Permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following public notice procedures under R18-9-A907 or A908. Minor modifications may only:

- a. Correct typographical errors;
- b. Update a permit condition that changed as a result of updating an Arizona water quality standard;
- c. Require more frequent monitoring or reporting by the Permittee;
- d. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;
- e. Allow for a change in ownership or operational control of a facility where the Director determines that no other change in their permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee has been submitted to the Director.
- f. Change the construction schedule for a discharger that discharges to a WOTUS which is a new source. No such change shall affect a discharger's obligation prior to discharge under 40 CFR 122.29 (which is incorporated by reference in R18-9-A905(A)(1)(e)).
- g. Delete a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with the permit limits.
- h. Incorporate conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 and 403.18 as enforceable conditions of the POTW's permit.
- i. Annex an area by a municipality.

23. Termination of Permits - [R-9-B906(C)]

The following are causes for terminating a permit during its term, or for denying a permit renewal application:

- a. Noncompliance by the Permittee with any condition of the permit;
- b. The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time;
- c. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or
- d. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit (for example, a plant closure or termination of discharge by connection to a POTW).

24. Availability of Reports - [Pursuant to A.R.S § 49-205]

Except for data determined to be confidential under A.R.S § 49-205(A), all reports prepared in accordance with the terms of this permit shall be available for public inspection at ADEQ offices. As required by A.R.S. § 49-205(B) and (C), permit applications, permits, and effluent data shall not be considered confidential.

25. Removed Substances - [Pursuant to Clean Water Act Section 301]

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

26. Severability - [Pursuant to A.R.S § 49-324(E)]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and remainder of this permit, shall not be affected thereby.

27. Civil and Criminal Liability - [Pursuant to A.R.S § 49-262, 263.01, and 263.02]

Except as provided in permit conditions on "Bypass" (Section 14) and "Upset" (Section 15), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

28. Oil and Hazardous Substance Liability - [Pursuant to Clean Water Act Section 311].

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by Section 510 of the Clean Water Act.

29. State or Tribal Law - [Pursuant to R 18-9-A904 (C)].

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by Section 510 of the Clean Water Act.