FACT SHEET AND STATEMENT OF BASIS
CANYON FUEL COMPANY, LLC. – SUFCO MINE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
DISCHARGE RENEWAL PERMIT
UPDES PERMIT NUMBER: UT0022918
MAJOR INDUSTRIAL FACILITY

FACILITY CONTACT INFORMATION

Contact Name: Burke Nielson  
Position: General Manager

Contact Name: Bryant Bunnell  
Position: Environmental Engineer

Contact Name: Marty Anderson  
Position: Environmental Engineer and Signatory Authority

Phone Number: (435) 286-4400

Mailing Address: 597 South S.R. 24
Salina, Utah 84654

Facility Location: East of Salina, Utah off Interstate Highway I-70 Exit #73
Located at latitude 38° 54' 32" North and longitude 111° 24' 57" West

DESCRIPTION OF FACILITY

The Canyon Fuel Company, LLC – SUFCO Mine (Mine) is an active underground coal mine facility with Standard Industrial Classification Code 1222 - bituminous underground coal mining operations and is located in Convulsion Canyon between Salina and Emery, Utah. The Mine has three discharge points known as Outfalls 001, 002, and 003. Outfall 003 discharges mine water on a continuous basis from a mine breakout point into the North Fork of Quitchupah Creek. The water discharged from Outfall 003 drops down through a steep culvert pipe with final impact on bedrock before entering the North Fork of Quitchupah Creek. Over the past five years, the discharge flow from Outfall 003 averaged 3.26 million gallons per day (MGD). Outfall 002, which collects any runoff and from the entire active mining area of the surface facilities, is from a second (lower) sedimentation pond in a series of two sedimentation ponds. Discharges from Outfall 002 occur regularly and are to the South Fork of the North Fork of Quitchupah Creek, also known as East Spring Canyon Drainage. The discharges from Outfall 002 over the past 5 years had an average flow of 0.127 MGD. Outfall 001 is associated with previous mine dewatering operations and has not discharged in many years and is not anticipated to discharge in the foreseeable future.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There are several changes being proposed with this renewal permit and the following list is a summary of those changes when compared to the previous permit:
1. The effluent flow limit for Outfall 003 has been increased from 5.5 MGD to 8.0 MGD at the request of the Mine for future anticipated mine dewatering needs.

2. The Storm Water permit provisions have been removed as part of a Division of Water Quality (DWQ) programmatic separation of the previously combined UPDES industrial permits. The Mine will now be required to apply for and obtain separate UPDES Industrial Storm Water Permit coverage under the UPDES MSGP No. UTR000000, or an applicable exemption as described further in the Storm Water section of this Fact Sheet.

3. Turbidity monitoring of the effluent discharge has been included in lieu of the Total Suspended Solids (TSS) secondary treatment standards to reflect rule changes in Utah Administrative Code (UAC) R317-1-3, which clarifies that secondary standards for both TSS and biochemical oxygen demand are not applicable for Non-POTW facilities. Publicly Owned Treatment Works (POTWs) are facilities that receive and process domestic waste water. The Mine is an industrial and Non-POTW type facility and therefore, secondary treatment standards do not apply. However, the Federal effluent limit guideline found in 40 Code of Federal Regulations (CFR) Part 434.45 for the TSS Daily Maximum limitation still applies and remains in the permit as appropriate and as discussed further in the Basis for Effluent Limitations section of this Fact Sheet.

4. The Dissolved Oxygen minimum effluent concentration requirement has been updated to reflect the current Wasteload Analysis (WLA).

5. The Total Dissolved Solids (TDS) maximum effluent concentration requirements have been updated to reflect the current WLA.

6. Whole Effluent Toxicity (WET) testing requirements have also been updated based upon the current WLA.

7. Monitoring for the total metals has been updated as discussed further in the Reasonable Potential Analysis section of this Fact Sheet.

All other permit provisions and limitations remain unchanged.

**DISCHARGE INFORMATION**

**DESCRIPTION OF DISCHARGE OUTFALLS**
The permitted discharging outfalls are as follows:

<table>
<thead>
<tr>
<th>Outfall Numbers</th>
<th>Location of Discharge Outfalls</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Located at latitude 38° 54' 54&quot; North and longitude 111° 24' 54&quot; West, mine water discharge from an eight-inch pipe to the South Fork of the North Fork of Quitchupah Creek.</td>
</tr>
<tr>
<td>002</td>
<td>Located at latitude 38° 54' 32&quot; North and longitude 111° 24' 57&quot; West, discharge is from an eighteen-inch pipe from the lower</td>
</tr>
</tbody>
</table>
sedimentation pond to the South Fork of the North Fork of Quitchupah Creek.

Located at latitude 38° 57’ 26” North and longitude 111° 23’ 06” West, main mine water discharge from a twenty-four-inch pipe to the North Fork of Quitchupah Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION
The receiving waters are tributaries of Quitchupah Creek, which is classified 2B, 3A, and 4 as described below and according to Utah Administrative Code (UAC) R317-2-13.

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but not limited to, wading, hunting, and fishing.

Class 3A -- Protected for cold-water species of game fish and other cold-water aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS
According to Utah’s 2022 Integrated Report and the 303(d) list and Water Quality Assessment for prioritizing impaired waterbodies, the receiving water for the Mine discharges is Quitchupah Creek Upper (Assessment Unit UT14070002-002_00, Quitchupah Creek from U-10 to headwaters), which is listed as impaired for benthic invertebrate assessment, dissolved oxygen and temperature. A TMDL was previously completed in 2004 to primarily address TDS in the greater West Colorado River Watershed (Price River, San Rafael River and Muddy Creek TMDLs for Dissolved Solids – West Colorado Watershed Management Unit, Utah, April 2004) and can be found at https://documents.deq.utah.gov/water-quality/watershed-protection/total-maximum-dailyloads/DWQ-2015-006611.pdf. Although the existing TMDL has not been updated for the impairments on Quitchupah Creek Upper and with no additional TMDL allocations or requirements included to date, both dissolved oxygen and temperature have been separately addressed as potential parameters of concern and are included in the permit as discussed further in the next sections of this Fact Sheet.

The temperature impairment for Quitchupah Creek is based on an exceedance of the 20°C temperature standard for beneficial use Class 3A found in UAC R317-2-14. The effluent temperatures from the Mine are consistently less than 20°C and should not cause or contribute to the impairment. Therefore, no additional temperature limitations will be included in the permit, however monitoring for temperature on a monthly basis will once again be required in the permit at all three discharge points for any potential reevaluation by DWQ at subsequent permit renewals as appropriate.
BASIS FOR EFFLUENT LIMITATIONS
In accordance with regulations promulgated in 40 CFR Part 122.44 and in UAC R317-8-4.2, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (UAC R317-1-3.2) when applicable, or Utah Water Quality Standards (UAC R317-2). In cases where multiple limits have been developed, those that are more stringent may apply. In cases where no limits or multiple limits have been developed, Best Professional Judgment (BPJ) of the permitting authority may be used where applicable. “Best Professional Judgment” refers to a discretionary, best professional decision made by the permit writer based on precedent, prevailing regulatory standards, or other relevant information.

Permit limits can also be derived from a Wasteload Analysis (WLA), as is the case with the Dissolved Oxygen minimum concentration for example, as well as the TDS daily maximum concentrations for each outfall. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, including any TMDL impairments as appropriate, Antidegradation Reviews (ADR) and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet Utah Water Quality Standards in the receiving waters. During this UPDES renewal permit development and WLA process, an ADR Level I review was performed and concluded that an ADR Level II review was required since there is a proposed increase in total effluent flow as compared to the previous permit (for Outfall 003 only). The ADR Level II review (review) was previously completed by the Mine as required and submitted to DWQ as part the permit application information. The separate review concludes that the proposed increase in flow for Outfall 003 from any potential additional future mine dewatering is not only needed to continue safely operating the Mine, but is also the most practicable and preferred treatment option. The WLA and ADR indicate that the effluent limitations and preferred treatment option as provided, respectively, will be sufficiently protective of water quality in order to meet Utah Water Quality Standards in the receiving waters. The WLA and ADR information are attached to this Fact Sheet as Addendum I.

The following list is the basis of the effluent limitations for the permit parameters:

1) Since the Mine discharge meets the EPA definition of “alkaline mine drainage,” the permittee is subject to the technology-based effluent limitations found in 40 CFR Part 434.45. Applicable technology-based limits included in the permit are as follows:

   a. Total suspended solids (TSS) daily maximum limit of 70 mg/L.

   b. For discharges composed of surface water, or mine water commingled with surface water, 40 CFR Part 434.63 allows alternate effluent limits to be applied when discharges result from specific runoff events, detailed below and in the permit (applicable only to Outfall 002). The Mine has the burden of proof that the following runoff events occurred as described further in the permit:

      i. For runoff events (rainfall or snowmelt) less than or equal to a 10-year 24-hour precipitation event, settleable solids may be substituted for TSS and
shall be limited to 0.5 milliliters per liter (ml/L). All other effluent limitations must be achieved concurrently, as described in the permit.

ii. For runoff events (rainfall or snowmelt) greater than a 10-year 24-hour precipitation event, only the alternative pH limitations may apply as described in the permit.

2) Daily minimum and daily maximum limitations on pH are derived from Utah Water Quality Standards found in UAC R317-2-14.

3) Total dissolved solids (TDS) are limited according to Utah Water Quality Standards and policies established by the Colorado River Basin Salinity Control Forum (Forum). TDS are limited by both mass loading and concentration requirements as described below:

a. Since discharges from the Mine eventually reach the Colorado River, TDS mass loading is limited according to policies established by the Forum, as authorized in UAC R317-2-4 to further control salinity in the Utah portion of the Colorado River Basin. On February 28, 1977, the Forum produced the “Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program” (Policy), with the most current subsequent triennial revision dated October 2020. Based on Forum Policy, provisions can be made for salinity-offset projects to account for any TDS loading in excess of the permit requirement. Forum Policy requires the TDS loading limitation of 1-ton per day (or 366 tons per year) as a sum from all discharge points, unless the average concentration of TDS is 500 mg/L or less. If the concentration of TDS at any Outfall is less than or equal to 500 mg/L as a thirty-day average, then no loading limit applies for that Outfall (fresh water waiver). The 1-ton per day (or 366 tons per year) loading limit applies only to those Outfalls exceeding 500 mg/L as a thirty-day average. Those Outfalls exceeding 500 mg/L as a thirty-day average, collectively, need to meet the 1-ton per day (or 366 tons per year) limit. If 1-ton per day (or 366 tons per year) TDS cannot be achieved, then the permittee is required to remove salinity/TDS in excess of 1-ton per day (or 366 tons per year) by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the excess salinity/TDS. Provisions have previously been made by the Mine for salinity-offset projects to account for any TDS loading in excess of the 1-ton per day requirement. Salinity-offset credits and tracking provisions shall be retained as described further in the permit to account for TDS in excess of 1-ton/day, as appropriate.

b. The permit limit for TDS concentrations at each outfall is derived from the current WLA to include assimilative capacity based on the Utah Water Quality Standard of 1200 mg/L, as found in UAC R317-2-14.

4) The limitation on total recoverable iron is based upon the Utah Water Quality Standard of 1.0 mg/L for dissolved iron found in UAC R317-2-14. Dissolved iron is a component of total recoverable iron and therefore, the total iron effluent limit of 1.0 mg/L is a more
conservative limitation based upon BPJ of the permitting authority and is consistent with other similar industrial facilities in Utah.

5) Oil & Grease concentrations are limited to 10 mg/L based upon BPJ of the permitting authority to be consistent with other industrial facilities statewide.

6) The Dissolved Oxygen limitation is water quality based as derived from the WLA and UAC R317-2-14 to be protective of the receiving waters and their beneficial uses.

7) The effluent flow limitations are based upon the maximum design flow of the outfalls as provided previously by the Mine facility.

REASONABLE POTENTIAL ANALYSIS

Since January 1, 2016, DWQ has conducted a reasonable potential analysis (RP) on all new and renewal permit applications received after that date. RP is conducted following DWQ’s “Reasonable Potential Analysis Guidance” dated September 10, 2015 (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes, as detailed further in the attached RP Analysis, provide a framework for what routine monitoring or effluent limitations are appropriate.

A qualitative RP analysis was performed on all metal constituents and other permit parameters of concern (POCs) from the Mine discharge data via Outfalls 002 & 003 (no discharges from Outfall 001). Initial screening values that were submitted through both the monthly discharge monitoring reports, as well as the permit renewal application information, showed that a closer look was needed for cadmium, lead and selenium at the discharging outfalls. Therefore, a quantitative RP analysis was conducted for cadmium, lead and selenium at Outfalls 002 & 003. All other metal constituents and POCs were below the applicable Water Quality Standards and/or existing permit limits. Therefore, no RP currently exists at the Mine for any other metals or any other permit parameters and additional quantitative RP analyses were not necessary at this time.

Upon closer look of the limited outfall effluent data points, including any potential outliers that were above the laboratory method detection limits (MDLs), as well as each of the metal parameter MDLs themselves, it does not appear that sufficiently sensitive test methods and/or MDLs are being consistently utilized for all parameters. Therefore, more data points are needed utilizing the most sensitive laboratory MDLs to determine if RP actually exists for cadmium, lead and/or selenium. Based upon this evaluation as detailed further in the attached RP Analysis Summary, the final RP determination was not to include any additional total metal effluent limits at this time, however, monitoring for all the metals parameters with concentrations above MDLs will remain in place utilizing sufficiently sensitive laboratory test methods and MDLs as detailed in the permit. This will provide a better data set to be re-evaluated for RP during the next permit cycle as appropriate. Once re-evaluated, the permit can be re-opened and modified as necessary to include any additional permit limitations as required.

The result of the RP analysis was Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit, but with utilizing sufficiently sensitive laboratory
test methods and MDLs as appropriate. A copy of the RP Summary is included as an attachment at the end of this Fact Sheet.

The permittee is expected to be able to comply with the permit limitations for all Outfalls as follows:

<table>
<thead>
<tr>
<th>Parameter, Units</th>
<th>Effluent Limitations *a</th>
<th>Monitoring Requirements *a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monthly Average</td>
<td>Weekly Average</td>
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<tr>
<td>Flow, MGD</td>
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<tr>
<td>Outfall 001</td>
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<tr>
<td>Outfall 002</td>
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</tr>
<tr>
<td>Outfall 003</td>
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</tr>
<tr>
<td>TSS, mg/L</td>
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</tr>
<tr>
<td>Total Iron, mg/L</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Dissolved Oxygen, mg/L</td>
<td>Report</td>
<td>--</td>
</tr>
<tr>
<td>Oil &amp; Grease, mg/L</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Visible oil and grease sheen, floating solids, foam, or sanitary waste</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>TDS, mg/L *c</td>
<td>Report</td>
<td>--</td>
</tr>
<tr>
<td>Outfall 001</td>
<td>Report</td>
<td>--</td>
</tr>
<tr>
<td>Outfall 002</td>
<td>Report</td>
<td>--</td>
</tr>
<tr>
<td>TDS tons/day *c</td>
<td>Report</td>
<td>--</td>
</tr>
<tr>
<td>pH, standard units</td>
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<td>--</td>
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<td>Turbidity, NTU *d</td>
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</tr>
<tr>
<td>Temperature, °C *e</td>
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<tr>
<td>Chronic WET Biomonitoring</td>
<td>Quarterly</td>
<td>Composite/Grab</td>
</tr>
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<td>Outfall 001</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Outfall 003</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Total Metals, mg/L</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*a See Permit Part VII, for definition of terms. Effluent limits apply to all outfalls unless otherwise stated.

*b In addition to monthly sampling for oil and grease, a visual inspection for any oil and grease sheen, sanitary wastes, floating solids, and visible foam shall be performed at least twice per month at all Outfalls. There shall be no visible sheen, floating solids, or visible foam in other than trace amounts upon any discharges and there shall be no discharge of any sanitary wastes at any time. If a sheen is observed from any Outfall, then a sample of the effluent shall be
collected immediately thereafter and the oil and grease shall not exceed 10 mg/L in concentration.

*c TDS concentrations for each of the outfalls shall not exceed the applicable daily maximum effluent limit. No tons per day loading limit will be applied if the concentration of TDS in the discharge is equal to or less than 500 mg/L as a 30-day (monthly) average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more than 1-ton per day as a sum from all discharge points. Upon previous determinations by the Director that the permittee is not able to meet the 500 mg/L 30-day average or the 1-ton per day loading limit, the permittee is required to continue to participate in and/or fund a salinity offset project to include TDS offset credits as appropriate.

The salinity-offset project shall include TDS credits on a ton-for-ton basis for which the permittee is over the 1-ton per day loading limit. The tonnage reduction from the offset project must be calculated by a method similar to one used by the Natural Resources Conservation Service, Colorado River Basin Salinity Control Forum, or other applicable agency.

If the permittee will be participating in the construction and implementation of a new salinity-offset project, then a project description and implementation schedule shall be submitted to the Director at least six (6) months prior to the implementation date of the project, which will then be reviewed for approval. The salinity offset project description and implementation schedule must be approved by the Director and shall be appended to this permit.

If the permittee will be funding any additional salinity-offset projects through third parties, the permittee shall provide satisfactory evidence to the Director that the required funds have been deposited to the third party within six (6) months of project approval by the Director. A monitoring and adjustment plan to track the TDS credits shall be submitted to the Director for each monthly monitoring period during the life of this permit. Any changes to the monitoring and adjustment plan must be approved by the Director and upon approval shall be appended to this permit.

*d Turbidity monitoring shall be conducted and reported monthly whenever possible from all discharging Outfalls to ensure that there is not an increase of more than 10 NTU over the receiving waters, if applicable.

*e Temperature monitoring shall be conducted and reported monthly whenever possible from all discharging Outfalls.

*f The following additional total metals shall be monitored quarterly as required from all discharging outfalls; Arsenic, Boron, Cadmium, Chromium, Copper, Lead, Nickel, Selenium and Silver. The permittee is required to utilize the
lowest detection limit possible using standard methods and certified laboratories.

SELF-MONITORING AND REPORTING REQUIREMENTS

The self-monitoring and reporting requirements, as included in the above permit table, are the same as in the previous permit, with the addition of turbidity monitoring as previously mentioned. Sampling frequency is based on the Mine being a major industrial permit with a maximum design effluent flow of <10 MGD and is consistent with other coal mine UPDES permits. The permit will require reports to be submitted monthly and quarterly, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab reports for biomonitoring and metals must be attached to the applicable DMRs as appropriate.

STORM WATER

As mentioned previously, the Storm Water provisions have been omitted from this UPDES permit. However, based on the type of industrial activities at the Mine facility, the permittee is required to maintain separate permit coverage, or an appropriate exclusion, under the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). If the facility has not already done so, it has 30 days from the effective date of this permit to submit the appropriate Notice of Intent (NOI) for the MSGP, or exclusion documentation. Previously, storm water discharge requirements and coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

Permit coverage under the UPDES Construction General Storm Water Permit (CGP) is required for any construction at the facility that is not part of active mining activities and which disturb an acre or more of land, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

Information on storm water permit requirements can be found at http://stormwater.utah.gov.

PRETREATMENT REQUIREMENTS

The Mine does not discharge process wastewater to a Publicly Owned Treatment Works (POTW). Any process wastewater that the Mine may discharge to a POTW, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the Mine shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the POTW accepting the
In addition, in accordance with 40 CFR 403.12(p)(1), the Mine must notify the POTW, the EPA Regional Waste Management Director, the DWQ Director and the State hazardous waste authorities in writing if the Mine discharges any substance into a POTW that if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

**BIOMONITORING REQUIREMENTS**

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the *Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018*. Authority to require whole effluent toxicity (WET) biomonitoring is provided in Permit Conditions UAC R317-8-4.2, Permit Provisions UAC R317-8-5.3 and Water Quality Standards UAC R317-2-5 and UAC R317-2-7.2.

A review of the WET testing results for the past five years indicates that the Mine has passed all quarterly chronic WET tests. The permittee is classified as a major industrial facility and historical discharges from the Mine are from intercepted ground water and storm water only, which has not been a concern for the receiving waters due to the absence of toxicity as tested since at least 2016. Therefore, the Mine will once again conduct chronic WET quarterly testing alternating the test species between *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow) from the discharging mine water Outfalls 001 & 003 as detailed in the permit. Chronic toxicity occurs when the inhibitory concentration to 25% of the population (IC$_{25}$) is less than or equal to the effluent concentrations as derived from the WLA and included in the permit. The IC$_{25}$ is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female or a 25% reduction in overall growth for the test population. The permit also contains the standard requirements for accelerated re-testing upon failure of a WET test, as appropriate.

A previous laboratory investigation indicated that pH drift during the test caused an artifactual increase in metal concentrations, which resulted in toxicity. According to the method set forth by EPA (*Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013*), it is acceptable to use a carbon dioxide atmosphere to prevent pH drift once it has been demonstrated that pH drift is artificially impacting the toxicity of the sample. As such, the renewal permit will once again allow the use of a carbon dioxide atmosphere in routine testing in conjunction with an unmodified test.

Additionally, the permit will once again contain a toxicity limitation re-opener provision. This provision allows for modification of the permit at any time in the future to include additional WET limitations and/or monitoring, should additional information indicate the presence of toxicity in the discharge. The chronic WET testing provisions as well as the toxicity limitation re-opener provision are detailed further in the permit.
PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years, as authorized in UAC R317-8-5.1(1).

Drafted and Reviewed by;
Jeff Studenka, Discharge Permit Writer
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Carl Adams, Storm Water
Lucy Parham, Colorado River Salinity Control
Amy Dickey, TMDL/Watershed
Suzan Tahir, WLA/ADR
Utah Division of Water Quality
(801) 536-4300
September 22, 2022

PUBLIC NOTICE INFORMATION (to be updated after)

Began: Month Day, Year
Ended: Month Day, Year

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Notice of the draft renewal permit shall be published on DWQ’s website for at least 30 days as per Utah Administrative Code (UAC) R317-8-6.5.

During the public comment period provided under UAC R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in UAC R317-8-6.12.

ADDENDUM TO FSSOB

ATTACHMENTS (2):
I. Wasteload Analysis & Antidegradation Review
II. Reasonable Potential Analysis Summary & Effluent Discharge Data

DWQ-2022-026579
ATTACHMENT 1

Wasteload Analysis & Antidegradation Review
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ATTACHMENT 2

Reasonable Potential Analysis &
Effluent Discharge Data
REASONABLE POTENTIAL ANALYSIS SUMMARY

The Division of Water Quality (DWQ) has worked to improve the reasonable potential analysis (RP) for permit developments with the inclusion of additional limits and/or parameters as necessary by using an EPA provided RP model (model). As a result of the model, more parameters and/or limits may be included in the renewal permit. In the 2015 DWQ policy entitled, “Reasonable Potential Analysis Guidance” (RP Guide), there are four possible RP outcomes as follows;

Outcome A: A new effluent limitation will be placed in the permit.
Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D: No limitation or routine monitoring requirements are in the permit.

2018-2022 Summary Results of Reasonable Potential Analysis for SUFCO Mine Water Discharges UPDES Permit No. UT0022918 – Outfall 003 (Continuous Mine Dewatering)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>No. of Samples</th>
<th>MEC* mg/L</th>
<th>Permit Limits/Water Quality Standards MAC** (most stringent)</th>
<th>Outcome/Result</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Acute mg/L</td>
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</tr>
<tr>
<td>Total Arsenic</td>
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<td>0.051</td>
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<td>0.0087</td>
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</tr>
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<td>5.6</td>
<td>MEC &lt; MAC</td>
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<td>Total Copper</td>
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<td>0.051</td>
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</tr>
<tr>
<td>Total Mercury</td>
<td>16</td>
<td>&lt;0.0002</td>
<td>0.000141</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Nickel</td>
<td>16</td>
<td>0.035</td>
<td>0.62</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Selenium</td>
<td>16</td>
<td>0.15</td>
<td>0.02</td>
<td>MEC &gt; MAC</td>
</tr>
<tr>
<td>Total Silver</td>
<td>16</td>
<td>0.02</td>
<td>0.041</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Zinc</td>
<td>16</td>
<td>&lt;0.02</td>
<td>0.386</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Boron</td>
<td>16</td>
<td>0.67</td>
<td>0.762</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Iron</td>
<td>101</td>
<td>0.21</td>
<td>1.0</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>101</td>
<td>15</td>
<td>70</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>101</td>
<td>918</td>
<td>1200</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>101</td>
<td>6.0-9.5</td>
<td>4.0 (daily min)</td>
<td>MEC &lt; MAC</td>
</tr>
<tr>
<td>pH (SU)</td>
<td>101</td>
<td>6.7-8.8</td>
<td>6.5 (daily min)</td>
<td>MEC &lt; MAC</td>
</tr>
</tbody>
</table>

Note/Legend:

NA = not applicable, no limit criterion.

*MEC = Maximum Effluent Concentration as determined from existing data set and RP analysis.
**MAC = Maximum Allowable Concentration as derived from the applicable Utah Water Quality Standards, current Permit Limits and/or Wasteload Analysis, with the most stringent criteria selected.**

***MEC < MAC = MEC less than MAC, no RP or additional limitations required.***

****MEC > MAC = MEC greater than MAC triggering RP to exceed applicable limitations.****

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**Summary (Outfall 003):** Following the RP Guide developed by the Utah Division of Water Quality on September 10, 2015 and subsequently implemented beginning January 1, 2016 for all new and renewal permits, a qualitative RP was conducted on all applicable permit parameters (see above table). From the summary table above, there were three parameters that resulted in further RP evaluation; cadmium, lead and selenium. Therefore, a more quantitative RP was conducted on these 3 parameters using the RP model, which resulted in a reasonable potential to exceed both the acute and chronic criterion for total cadmium and total selenium, but with only the chronic criterion exceeded for total lead.

Upon closer look at the Outfall 003 effluent data used in the RP model, only 2 of the 16 data points for total cadmium resulted in concentrations slightly above the laboratory method detection limits (MDL) and those both occurred in early 2019 and with no concentrations above the MDL since that time. Similarly, for total selenium only 3 of the 16 data points resulted in concentrations above the MDL and those occurred in 2018-2019 and with no concentrations above the MDL since that time. The first of those 3 selenium data points being from early 2018 and is a statistical outlier when compared to the other 2 data points and MDL. Removing the outlier resulted in no RP for total selenium. For total lead, there were 4 of the 16 data points that resulted in concentrations above the MDLs from 2019-2021 with 3 of those data points only slightly above the MDL and with 1 data point as a statistical outlier when compared to the other data points and MDL. Removing the outlier resulted in no RP for total lead as well.

Additionally, upon closer look of the Outfall 003 effluent data and each parameter MDL, it does not appear that sufficiently sensitive test methods and MDLs are being consistently utilized for all parameters. Therefore, more data points are needed utilizing the most sensitive laboratory MDLs to determine if RP actually exists for these metals. Based upon this evaluation and the above summary information, the final RP determination was not to include any additional total metal effluent limits at this time, however, monitoring for all the metals parameters with concentrations above MDLs will remain in place utilizing sufficiently sensitive laboratory test methods and MDLs as included in the permit. This will provide a better data set to be re-evaluated for RP during the next permit cycle as appropriate. Once re-evaluated, the permit can be re-opened and modified as necessary to include any additional permit limitations as required.

The result of the RP analysis is **Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit, but with utilizing sufficiently sensitive laboratory test methods and MDLs as appropriate.**
## 2018-2022 Summary Results of Reasonable Potential Analysis for SUFCO Mine Stormwater Pond Discharges Permit No. UT0022918 – Outfall 002 (Sedimentation Pond Discharge)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>No. of Samples</th>
<th>MEC* mg/L</th>
<th>Permit Limits/Water Quality Standards MAC** (most stringent)</th>
<th>Outcome/Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute mg/L</td>
<td>Chronic mg/L</td>
</tr>
<tr>
<td>Total Arsenic</td>
<td>16</td>
<td>0.03</td>
<td>0.051</td>
<td>0.051</td>
</tr>
<tr>
<td>Total Cadmium (II&amp;VI)</td>
<td>16</td>
<td>0.01</td>
<td>0.0101</td>
<td>0.0009</td>
</tr>
<tr>
<td>Total Chromium (III&amp;VI)</td>
<td>16</td>
<td>0.014</td>
<td>6.82</td>
<td>0.336</td>
</tr>
<tr>
<td>Total Copper</td>
<td>16</td>
<td>0.01</td>
<td>0.064</td>
<td>0.037</td>
</tr>
<tr>
<td>Total Lead</td>
<td>16</td>
<td>0.04</td>
<td>0.101</td>
<td>0.025</td>
</tr>
<tr>
<td>Total Mercury</td>
<td>16</td>
<td>&lt;0.0002</td>
<td>0.000141</td>
<td>NA</td>
</tr>
<tr>
<td>Total Nickel</td>
<td>16</td>
<td>0.017</td>
<td>0.62</td>
<td>0.21</td>
</tr>
<tr>
<td>Total Selenium</td>
<td>16</td>
<td>0.16</td>
<td>0.02</td>
<td>0.0046</td>
</tr>
<tr>
<td>Total Silver</td>
<td>16</td>
<td>0.005</td>
<td>0.061</td>
<td>NA</td>
</tr>
<tr>
<td>Total Zinc</td>
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<td>0.473</td>
<td>0.473</td>
</tr>
<tr>
<td>Total Boron</td>
<td>14</td>
<td>0.71</td>
<td>0.76</td>
<td>NA</td>
</tr>
<tr>
<td>Total Iron</td>
<td>105</td>
<td>0.21</td>
<td>1.0</td>
<td>NA</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>105</td>
<td>38</td>
<td>70</td>
<td>NA</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>105</td>
<td>1080</td>
<td>1200</td>
<td>NA</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>105</td>
<td>6-11</td>
<td>4.0 (daily min)</td>
<td>6.5 (monthly avg)</td>
</tr>
<tr>
<td>pH (SU)</td>
<td>105</td>
<td>6.8-9.0</td>
<td>6.5 (daily min)</td>
<td>9.0 (daily max)</td>
</tr>
</tbody>
</table>

**Note/Legend:**

- NA = not applicable, no limit criterion.
- *MEC = Maximum Effluent Concentration as determined from existing data set and RP analysis.
- **MAC = Maximum Allowable Concentration as derived from the applicable Utah Water Quality Standards, current Permit Limits and/or Wasteload Analysis, with the most stringent criteria selected.
- ***MEC < MAC = MEC less than MAC, no RP or additional limitations required.
- ****MEC > MAC = MEC greater than MAC triggering RP to exceed applicable limitations.

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**Summary (Outfall 002):** Following the RP Guide developed by the Utah Division of Water Quality on September 10, 2015 and subsequently implemented beginning January 1, 2016 for all new and renewal permits, a qualitative RP was conducted on all applicable permit parameters (see above
table). From the summary table above, there were three parameters that resulted in further RP evaluation; cadmium, lead and selenium. Therefore, a more quantitative RP was conducted on these 3 parameters using the RP model, which resulted in a reasonable potential to exceed both the acute and chronic criterion for total cadmium and total selenium, but with only the chronic criterion exceeded for total lead.

Upon closer look at the Outfall 002 effluent data used in the RP model, only 2 of the 16 data points for total cadmium resulted in concentrations slightly above the laboratory method detection limits (MDL) and those both occurred in early 2019 and with no concentrations above the MDL since that time (same sampling events as Outfall 003 which points to possible laboratory error or other contamination issue). Similarly, for total selenium only 3 of the 16 data points resulted in concentrations above the MDL. The first of those 3 selenium data points being from early 2018 and is a statistical outlier when compared to the other 2 data points being only slightly above the MDL (similar to 003 sampling events, again pointing to possible laboratory error or other contamination issue). Removing the outlier resulted in no RP for total selenium. For total lead, there was only 1 of the 16 data points that resulted in a concentration slightly above the MDL, and which also corresponds to the same sampling event for the Outfall 003 outlier concentration for total lead (possible laboratory error or other contamination issue).

Additionally, upon closer look of the Outfall 002 effluent data and each parameter MDL, it does not appear that sufficiently sensitive test methods and MDLs are being consistently utilized for all parameters. Because of these factors, more data points are needed utilizing sufficiently sensitive laboratory MDLs to determine if RP actually exists for these metals. Based upon this evaluation and the above summary information, the final RP determination was not to include any new total metal effluent limits at this time, however, monitoring for all the metals parameters with concentrations detected above MDLs will remain in place utilizing sufficiently sensitive laboratory test methods and MDLs as detailed in the permit. This will provide a better data set to be re-evaluated for RP during the next permit cycle as appropriate. Once re-evaluated, the permit can be re-opened and modified as necessary to include any additional permit limitations as required.

The result of the RP analysis is Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit, but with utilizing sufficiently sensitive laboratory test methods and MDLs as appropriate.
Effluent Discharge Data