

**FACT SHEET STATEMENT OF BASIS (FSSOB)
CANYON FUEL COMPANY, LLC - SKYLINE MINE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
MAJOR INDUSTRIAL FACILITY RENEWAL DISCHARGE PERMIT
UTAH DIVISION OF WATER QUALITY (DWQ)
UPDES PERMIT NUMBER: UT0023540**

FACILITY CONTACTS

Person Name: Gregg Galecki
Position: Sr. Environmental Engineer
Phone Number: (435) 448-2636

Facility Name: Skyline Mine
Mailing Address: HC 35, Box 380
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DESCRIPTION OF FACILITY

The Canyon Fuel Company's Skyline Mine (Skyline Mine) is an active underground coal mine operation with *Standard Industrial Classification 1222*, for *bituminous underground coal mining operations*. The facility is located approximately 8 miles southwest of Scofield, Utah along State Route 264 in Carbon County. Skyline Mine currently has four permitted discharge points (Outfalls 001, 002, 003, & 004), but has requested a fifth discharge point (Outfall 005) for more efficient and safe managing of the mine water to be discharged in the future.

Outfall 001, which discharges to Eccles Creek, is comprised of both the continuous mine water discharges, as well as any surface water runoff directed to the sedimentation pond from the main facility. Outfall 002 is from a sedimentation pond, which collects surface water runoff from the separate coal load out facility located at the intersection of State Routes 264 & 96 and discharges intermittently to Eccles Creek during pond maintenance, precipitation and/or snow melting events. Outfall 003 is from a sedimentation pond located at the off-site waste rock disposal area near Scofield and has not discharged to date and is not expected to discharge into the foreseeable future due to its size. If discharge were to occur it would go to UP Canyon Creek, tributary to Mud Creek and Scofield Reservoir. Outfall 004 is configured to discharge both mine water, as well as any surface water runoff directed to the sedimentation pond from the Winter Quarters Canyon ventilation shaft facility. Outfall 004 first began discharging mine water in May 2020 to Winter Quarters Canyon Creek, which is also tributary to Mud Creek and Scofield Reservoir, to safely dewater and operate the active mining areas. Prior to May 2020, any and all mine water discharges were discharged via Outfall 001. Outfall 005 when completed will enable a portion of the mine water discharges, which would otherwise discharge via Outfall 001, to be discharged directly into Electric Lake, which is tributary to Huntington Creek.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There are four significant changes being proposed in this UPDES renewal permit when compared to the previous permit as follows:

1. The inclusion of Outfall 005 and the applicable permit limitations as appropriate. As mentioned above, Outfall 005 is for proposed mine water discharging directly into Electric Lake.
2. Monthly monitoring of the mine water discharges for the following total and dissolved metals have been added; aluminum, arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, silver, selenium and zinc. The additional metals monitoring is described further in the Reasonable Potential section of this Fact Sheet.
3. The addition of turbidity monitoring at all outfalls has been included as described in the Self-Monitoring & Reporting Requirements section of this FSSOB; and,
4. The Storm Water permit provisions have been removed as part of a programmatic separation of the previously combined UPDES permits. Skyline Mine will now be required to apply for and obtain separate UPDES Industrial Storm Water Permit coverage under the MSGP No. UTR000000, as described further in the Storm Water section of this FSSOB.

DESCRIPTION OF DISCHARGE OUTFALLS

The permitted discharge outfalls are as follows:

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at Latitude 39°41'04", Longitude 111°12'04". Outfall from sedimentation pond and mine water discharges to Eccles Creek.
002	Located at Latitude 39°41'05", Longitude 111°09'23". Outfall from sedimentation pond at the load-out facility discharging to Eccles Creek.
003	Located at Latitude 39°43'13", Longitude 111°09'13". Outfall from sedimentation pond associated with the waste rock disposal site discharging to UP Canyon Creek.
004	Located at Latitude 39°43'13", Longitude 111°11'59". Outfall from sedimentation pond and mine water discharges to Winter Quarters Canyon Creek.
005	Located at Latitude 39°38'58", Longitude 111°14'22" as proposed. Proposed Outfall for mine water discharges into Electric Lake.

RECEIVING WATERS AND STREAM CLASSIFICATION

The receiving waters of Eccles Creek, UP Canyon Creek and Winter Quarters Canyon (Outfalls 001, 002, 003 & 004) are classified as follows according to *Utah Administrative Code (UAC) R317-2-13.1.b*:

- Class 1C -- Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water
- 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 are 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.

The receiving water for Outfall 005 is Electric Lake, which is classified as High Quality Waters – Category 2, as listed in *Utah Administrative Code (UAC) R317-2-12.2*. High Quality Waters – Category 2 is defined in *UAC R317-2-3.3* as follows:

“...designated surface water segments which are treated as High Quality Waters – Category 1 except that a point source discharge may be permitted provided that the discharge does not degrade existing water quality.”

The permit requirements and limitations for Outfall 005 have been developed so that the proposed discharge does not degrade the existing water quality of Electric Lake. A similar UPDES Permit (UT0025534) was issued by DWQ to PacifiCorp in 2000, in conjunction with Skyline Mine, for discharges from the nearby James Canyon wells and pipeline into Electric Lake.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (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*) and Utah Water Quality Standards (*UAC R317-2*) as applicable. In cases where no limits have been developed, Best Professional Judgment (BPJ) may be used where applicable. “Best Professional Judgment” refers to a discretionary, best professional decision made by the permitting authority based upon precedent, prevailing regulatory standards or other relevant information.

Permit limits can also be derived from the Wasteload Analysis (WLA), which incorporates Secondary Treatment Standards, Water Quality Standards, including Total Maximum Daily Load (TMDL) impairments as appropriate, Antidegradation Reviews 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 State water quality standards in the receiving waters. During this UPDES renewal permit development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR Level II review was not required this time since there are no proposed increases in total flows or parameter concentrations from the previous permit. The WLA indicates that the effluent limitations will be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The WLA and ADR are attached as an addendum to this FSSOB.

The following list is the basis for the effluent limitations of **Outfalls 001 through 004**:

- 1) Since the Skyline discharge meets the EPA definition of “alkaline mine drainage,” the permittee is subject to the technology based effluent limitations 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. Skyline has the burden of proof that the described runoff event occurred as described 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.
- 2) Daily minimum and daily maximum limitations on pH are derived from the Utah Secondary Treatment Standards and the Water Quality Standards as cited above.
- 3) The dissolved oxygen (DO) daily minimum limitation is based upon the State Water Quality Standard (*UAC R317-2 Table 2.14.2*) and the previous permit and WLA limitation of 5.0 mg/L. Although the attached WLA indicates a DO daily minimum of 4.0 mg/L and a monthly minimum of 6.5 mg/L, the current DO limitation will remain in place based upon BPJ of the permitting authority and the fact that one DO sample is being collected each month. Additionally, the current DO limitation of 5.0 mg/L is more protective of the receiving waters than the attached WLA proposed daily minimum limitation of 4.0 mg/L for DO.
- 4) Total dissolved solids (TDS) are limited by both mass loading and concentration requirements as described below:
 - a. Since discharges from Skyline eventually reach the Colorado River, TDS mass loading is limited according to policies established by the Colorado River Basin Salinity Control Forum (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 2017. Based on Forum Policy, provisions have previously been made for salinity-offset projects to account for any TDS loading in excess of the permit requirement. Salinity-offset provisions have once again been included in Skyline’s permit as the facility remains current on the requirements included therein to account for all excess TDS loading. 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. These provisions and requirements, as described further in both the permit and in a latter section of this FSSOB, will remain in Skyline’s renewal permit as appropriate.
 - b. The State Water Quality Standard for TDS is 1,200 mg/L, as found in *UAC R317-2-14 Table 2.14.1*, and shall apply to Outfalls 001 through 004 as appropriate.

- 5) The iron limitation is based upon the State Water Quality Standard of 1.0 mg/L for dissolved iron (*UAC R317-2 Table 2.14.2*) and the WLA limitation of 1.0 mg/L for total recoverable iron. Total recoverable iron is a more stringent limit than dissolved iron since the dissolved component is a part of the total recoverable component. Therefore, the existing permit limit of 1.0 mg/L for total recoverable iron will remain in the renewal permit and shall apply to each of the discharge points.
- 6) Oil and Grease concentrations are limited to 10 mg/L based upon BPJ of the permitting authority to be consistent with other industrial facilities statewide.

Basis for Outfall 005 Effluent Limitations

Since this proposed new outfall discharges into a Category 2 receiving water body, a separate WLA was conducted to ensure that no degradation of Electric Lake would occur as a result of the new discharge. The separate WLA is also attached as an addendum to this FSSOB and provides the data analysis summary for the parameters of concern. As expected, the effluent limitations for Outfall 005 are more restrictive than those of the other outfalls. This includes concentration limitations for TDS, TSS and total iron as appropriate. The Daily Maximum permit limits for TDS and Total Iron are derived from the 80th percentile of the Upper lake tributaries data set as presented in the WLA data Tables 1 & 2, while the permit limits for Maximum Annual Averages are initially based upon the arithmetic mean of the Upper lake tributaries data rather than the Lake only data set as recommended in the WLA. This is based upon several factors, including the limited or absent Lake data that is proximal in location to the proposed outfall near the Upper lake input data points, as well as to be consistent with the Upper lake input data set that was utilized for the aforementioned Daily Maximum permit limits. Since the existing Lake data samples have only been collected near the middle and lower portions of Electric Lake, Skyline Mine has committed to sampling the upper reaches of Electric Lake so that a more extensive Lake analysis can be conducted of the proposed additional input into the Upper reaches. This will be reevaluated after one year of new monitoring as described in the next paragraph. For comparative purposes, the previously mentioned similar UPDES Permit #UT0025534 included only the Daily Maximum permit limits of 255 mg/L for TDS and 0.5 mg/L for Total Iron and did not include Maximum Annual Average limitations.

Permit limits for pH, dissolved oxygen, and oil & grease are included to be consistent with the other outfalls based upon BPJ of the permitting authority. Additionally within the first year of the renewal permit, Skyline Mine will be required to complete a geochemical analysis as detailed in the permit regarding the new outfall mine water discharges into Electric Lake as furtherance of no degradation to the Category 2 receiving waters. Once the study has been submitted to DWQ, the permit may be reopened and modified at any time to include more protective effluent limits based upon the study itself, the WLA, or a subsequent reasonable potential analysis which is described further in the section below. This includes the parameter dissolved iron, which historically is not a parameter of concern from Skyline Mine discharges, but is identified in the WLA due to the uniqueness of the receiving water. Therefore all metals monitoring data from the first year of discharge sampling will be reevaluated as detailed in the permit.

Impaired Waters and TMDL

Scofield Reservoir tributaries, Assessment Unit UT14060007-002, are listed as impaired for dissolved oxygen in Utah's 2016 Integrated Report. Scofield Reservoir is listed as impaired for dissolved oxygen, pH and total phosphorus in Utah's 2016 Integrated Report. The Scofield Reservoir TMDL was completed to address the impairment for dissolved oxygen and total phosphorus. Skyline Mine has previously monitored for pH, dissolved oxygen and total phosphorus and will continue to monitor for pH and dissolved oxygen as appropriate. However, total phosphorus was removed during the last permit renewal as a result of five years of monitoring that resulted in no measurable concentrations as expected. This will continue in the permit renewal based upon the permitting authority's BPJ as Skyline Mine is not considered a contributing source of phosphorus or other nutrient parameters. Electric Lake is not listed as impaired for any water quality parameters.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required

A qualitative RP analysis was performed on the parameters of concern, as derived from the current permit, TMDL, and WLA, to determine if there was reasonable potential for the mine water discharges to exceed the applicable water quality standards. Based on the RP analysis, only Total Iron for Outfall 001 exceeded the most stringent chronic water quality standard or was determined to have a reasonable potential to exceed the standard. However, an RP analysis could not be completed on any other metals because historically metals monitoring has not been included in previous permits (except for iron which is already in the permit with a limit). Therefore, this renewal permit will require that the permittee obtain more metals data by monitoring the mine water discharges on a monthly basis for total recoverable and dissolved concentrations of aluminum, arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel, silver, selenium and zinc, so that a more thorough RP analyses can be performed in the future. A copy of the RP analysis 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 as follows:

OUTFALLS 001, 002, 003, & 004

Parameter, Units	Effluent Limitations *a			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
Total Effluent Flow, MGD, *b	Report	--	--	Report
Total Iron, mg/L	--	--	--	1.0
Total Suspended Solids (TSS), mg/L	Report	Report	--	70
Total Dissolved Solids (TDS), mg/L, *c	Report	--	--	1,200
Total Dissolved Solids (TDS), tons/day, *c	Report	--	--	--
Dissolved Oxygen, mg/L	--	--	5.0	--
pH, Standard Units(SU)	--	--	6.5	9.0

Oil & Grease, mg/L, *d	--	--	--	10
Whole Effluent Toxicity (WET), Chronic Biomonitoring (Outfalls 001 & 004 only)	--	--	--	IC ₂₅ > 100% effluent

OUTFALL 005

Parameter, Units	Effluent Limitations *a			
	Maximum Monthly Average	Maximum Annual Average	Daily Minimum	Daily Maximum
Total Effluent Flow, MGD, *b	Report	--	--	Report
Total Iron, mg/L	--	0.38	--	0.45
Total Suspended Solids (TSS), mg/L	Report	Report	--	31
Total Dissolved Solids (TDS), mg/L, *c	Report	202	--	235
Total Dissolved Solids (TDS), tons/day, *c	Report	--	--	--
Dissolved Oxygen, mg/L	--	--	5.0	--
pH, Standard Units(SU)	--	--	6.5	9.0
Oil & Grease, mg/L, *d	--	--	--	10
Whole Effluent Toxicity (WET), Chronic Biomonitoring	--	--	--	IC ₂₅ > 100% effluent
Total & Dissolved Metals, mg/L, *e	--	Report	--	Report

MGD - million gallons per day;

mg/L - milligrams per liter

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit with the inclusion of Outfall 005 and the applicable self-monitoring requirements. The permit will require reports to be submitted monthly and annually, 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, as well as lab reports for metals and toxic organics, must be submitted with the applicable DMRs. A review of the past 5 years of DMR data reveals that Skyline Mine has had no significant permit exceedances of any parameter, except for total iron as described previously, and should be able to continue complying with the permit provisions as included.

ALL OUTFALLS (Unless stated otherwise)

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow, *b	Continuous/Monthly	Recorder/Measured	MGD

Total Iron	Twice Monthly	Grab	mg/L
TSS	Weekly	Grab	mg/L
TDS, *c	Twice Monthly	Grab	mg/L & tons/day
pH	Weekly	Grab	SU
Oil & Grease, *d	Weekly, Twice Monthly	Grab, Visual	mg/L, Yes/No
Turbidity, *f	Monthly	Grab	NTU
Dissolved Oxygen	Monthly	Grab	mg/L
Chronic WET Biomonitoring (Outfalls 001, 004 & 005)	Quarterly	Composite	Pass/Fail
Total & Dissolved Metals, *e (Outfalls 001, 004 & 005)	Monthly	Grab	mg/L

There shall be no visible sheen or 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.

*a See Permit *Part VI* for definition of terms.

*b Mine water discharges via Outfalls 001, 004 & 005 shall be continuously measured. If the rate of discharge is controlled, such as from intermittent discharging outfalls, the rate and duration of discharge shall be reported. Flow measurements of effluent volumes from all outfalls shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

*c The TDS concentration from each of the outfalls shall not exceed the daily maximum limit. No tons per day loading limit will be applied if the concentration of TDS from each outfall is equal to or less than 500 mg/L as a thirty-day average. However, if the 30-day average concentration exceeds 500 mg/L, then the permittee cannot discharge more than 7.1 tons per day as a sum from all discharge points. Upon previous determinations by the Director, if the permittee is not able to meet the 500 mg/L 30-day average or the 7.1 tons per day loading limit, then the permittee is required to continue to participate in and/or fund a salinity offset project to include the 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 7.1 tons per day loading limit. The tonnage reduction from the offset project must be calculated by a method similar to one used by the NRCS, Colorado River Basin Salinity Control Forum, and/or other applicable agency.

A monitoring and adjustment plan to track the TDS credits shall continue to 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 shall be appended to this permit.

- *d Weekly oil & grease sample analyses shall be conducted at outfalls 001, 004 & 005 when discharging. At outfalls 002 & 003, oil & grease monitoring shall initially be a visual test conducted at least twice per month. If any oil and/or grease sheens are observed visually, or there is any other reason to believe that oil and/or grease may be present in the discharge, then a grab sample of the effluent must be immediately taken and this sample shall not exceed 10 mg/L.
- *e Total Recoverable and Dissolved Metals includes; aluminum, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, and zinc. After the first year of metals monitoring, the permit may be reopened at any time and modified to include more protective effluent limits based upon a subsequent Reasonable Potential Analysis of all new data sets as provided.
- *f Turbidity monitoring shall be conducted 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.

STORM WATER REQUIREMENTS

As mentioned previously, the Storm water provisions have been omitted from this UPDES permit. However, based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate permit coverage, or an appropriate exclusion, under the 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 when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. This can be accomplished online at: <https://deq.utah.gov/water-quality/general-multi-sector-industrial-storm-water-permit-updes-permits>.

In addition, separate permit coverage under the Construction General Storm Water Permit (CGP) may be required for any non-mining related construction at the facility which disturb an acre or more, 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. This can be accomplished online at: <https://deq.utah.gov/water-quality/general-construction-storm-water-updes-permits>.

PRETREATMENT REQUIREMENTS

This facility does not discharge process wastewater to a sanitary sewer system. Any process wastewater that the facility may discharge to the sanitary sewer, 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 permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the state's pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste. In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which 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 effluent 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. Since Skyline Mine is classified as a major industrial discharger, the renewal permit will again require quarterly whole effluent toxicity (WET) testing for the mine water discharges as appropriate based upon the aforementioned biomonitoring guidance document.

During the past five years, Skyline Mine has been conducting quarterly chronic WET testing of their mine water discharge via Outfall 001 utilizing the test species, *Ceriodaphnia dubia* (water flea) and *Pimephales promelas* (fathead minnow) as detailed in the permit. A review of past WET testing reports reveals that Skyline Mine has had no chronic WET failures for many years including during the past five year permit cycle. Based upon past performance and due to the outfalls discharging to either a category Class 1C water (Outfalls 001 & 004), or a Category 2 High Quality Water (Outfall 005), Skyline Mine shall continue quarterly chronic WET testing, alternating the test species as appropriate from all mine water discharging outfalls. A CO₂ atmosphere may be used (in conjunction with an unmodified test) in order to account for artificial pH drift, as previously authorized by the Director. The permit will contain the standard requirements for accelerated testing upon failure of a WET test, and a Preliminary Toxicity Investigation (PTI) and Toxicity Reduction Evaluation (TRE) as necessary.

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 & Colorado River Basin Salinity Control
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Lisa Stevens, Storm Water
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Nick Von Stackleberg & Chris Shope, Wasteload Analysis & ADR

Utah Division of Water Quality, (801) 536-4300
September 15, 2020

PUBLIC NOTICE INFORMATION (to be updated later)

Began:

Ended:

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

The Public Notice of the draft permit will 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 and Antidegradation Reviews
II. Reasonable Potential Analysis Summary

DWQ-2020-008785

PND Draft

PND Draft

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ATTACHMENT 1

Wasteload Analysis and Antidegradation Reviews

PVNDraft

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ATTACHMENT 2

Reasonable Potential Analysis

REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by utilizing an EPA approved method and guidance document. As a result, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available online. There are four resulting outcomes for the RP Analyses¹. They are;

- 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.

The Initial RP Screening Table is included below for the parameters of concern (POCs), as derived from the current permit, TMDL and WLA. Note that the full RP analysis model could not be utilized at this time due to the lack of metals data.

RP Initial Screening Table for Skyline Mine (UT0023540) 2014-2019 Data Summary Results & RP Analysis for Outfall 001 (main discharge) (Outfalls 003, 004, & 005 did not discharge during this time)

Parameter	No. of Samples	MEC* mg/L	Water Quality Standards MAC**			Result
			WLA mg/L	Acute mg/L	Chronic mg/L	
Total Iron	148	1.46	1.0	NA	NA	MEC > MAC = RP
Total Phosphorous	17	<0.05	0.05	NA	NA	MEC < MAC
Total Dissolved Solids	148	1052	1200	NA	NA	MEC < MAC
pH	287	7.0-8.83	6.5-9.0 (min/max)	NA	NA	MEC < MAC
Dissolved Oxygen	60	5.7-8.99	5.0 (min)	4.0 (min)	5.0 (min)	MEC < MAC

Notes: NA = not applicable.

Phosphorus monitoring was from 2009-2015.

Dissolved Oxygen minimum is from the current permit requirement and previous WLA.

*MEC – Maximum expected effluent concentration as determined from existing data set.

**MAC – Maximum allowable concentration from Water Quality Standards and/or Wasteload Analysis.

MEC > (greater than) MAC = Reasonable Potential identified.

MEC < (less than) MAC. No Acute or Chronic limit required.

Result:

Outfall 001 (main discharge) the above result of the RP analysis is **MEC > MAC = Reasonable Potential identified** for total iron, which already has a specific effluent limit. This equates to *RP Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit.* Additional metals monitoring has been added in the permit however, so that a complete RP analysis model can be completed in the future.

Outfalls 002 & 003 (sedimentation ponds), since they are either infrequent or non- discharging outfalls, the result of the RP analysis by default is MEC less than (<) to MAC with No Acute or Chronic limits required, which equates to *RP Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit.*

¹ See Reasonable Potential Analysis Guidance for further definition of terms

Outfall 004 (current/future mine water discharges with little to no discharge data to evaluate) the result of the RP analysis by default to be consistent with Outfall 001, since it is essentially the same discharge water, is **MEC > MAC = Reasonable Potential identified** for total iron, which already has a specific effluent limit. This equates to *RP Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit.* Additional metals monitoring has been added in the permit however, so that a complete RP analysis model can be completed in the future.

Outfall 005 (pending), new effluent limitations will be placed in the permit as appropriate (Outcome A).

Summary:

Based upon the policy “Reasonable Potential Analysis Guidance” 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; it was determined not to include any new metals or other POCs effluent limits in the 2020 renewal permit. This is because all the data points reviewed were below the applicable Water Standards and/or method detection limits, excepting for total iron which already has specific effluent limitations as derived from the WLA and permit development to be most protective of the receiving waters (see table above). Therefore, no RP currently exists at the mine for metals or other identified POCs except for total iron at Outfalls 001 & 004 and a more quantitative RP analysis was not applicable at this time. Monitoring for the remaining metals (Aluminum, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, and Zinc), although believed to be absent in the mine water discharges, will be included as detailed in the permit for mine water discharging Outfalls 001, 004, and 005, so that a more thorough RP analysis can be conducted in the future. This will be re-evaluated in subsequent years as appropriate.