U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 8
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
STATEMENT OF BASIS

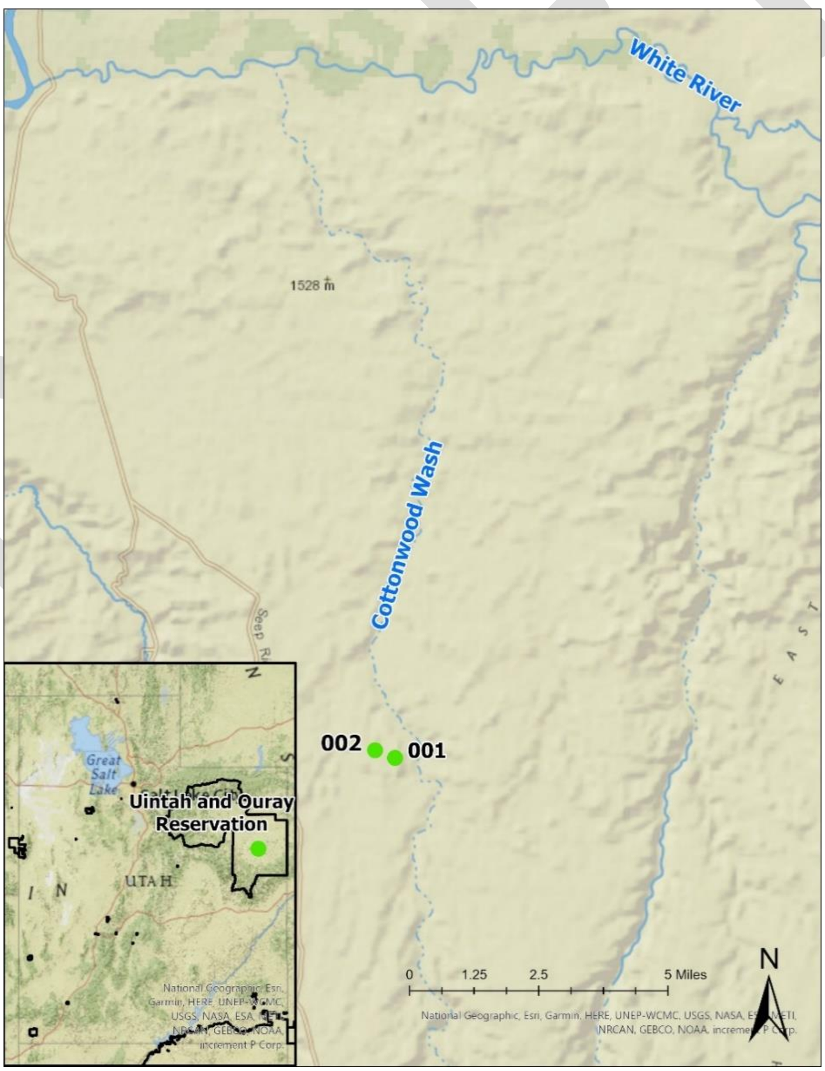
PERMITTEE:	Table Rock Minerals, LLC
FACILITY NAME AND ADDRESS:	TRM#1 Mine P.O. Box 1530 Vernal, UT 84078
PERMIT NUMBER:	UT-0000184
RESPONSIBLE OFFICIAL:	John Smith, General Manager (435) 545-2477 tablerocksmith@gmail.com
FACILITY CONTACT:	Jim Lekas (435) 545-2141 jlekas@tablerockminerals.com
PERMIT TYPE:	Minor Industrial, Mine Dewatering, New Permit, Indian Country
FACILITY LOCATION:	Uintah County, Utah Latitude 39.9189° N, Longitude 109.5778° W

1 INTRODUCTION

This statement of basis (SoB) is for the issuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Permit) to Table Rock Minerals, LLC (the Permittee) for the Table Rock Minerals #1 gilsonite mine (TRM#1, or the Facility). The Permit establishes discharge limitations for any discharge of wastewater from the Facility through outfalls 001 and 002 to unnamed tributaries to Cottonwood Wash. The SoB explains the nature of the discharges, the EPA's decisions for limiting the pollutants in the wastewater, and the regulatory and technical basis for these decisions.

The Facility is located on the Uintah and Ouray Reservation in northeastern Utah (Figure 1). EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. § 1151, located within Region 8 states and implements federal environmental laws in Indian country consistent with the EPA Policy for the Administration of Environmental Programs on Indian Reservations and the federal government's general trust responsibility to federally recognized Indian tribes.

Figure 1. Facility Outfall Location Map



2 MAJOR CHANGES FROM PREVIOUS PERMIT

N/A – this is a new permit issuance.

3 BACKGROUND INFORMATION

Table Rock Minerals, LLC (the Permittee) is a privately held company headquartered in Vernal, Utah. The Permittee plans to mine gilsonite at the Facility. Gilsonite – also known as uintaite – is a black, lustrous, naturally occurring hydrocarbon resin that is similar in appearance to coal or hard asphalt. It is found underground in the Uintah basin in Utah and Colorado. According to a 2014 paper published in the *Journal of Petroleum & Environmental Biotechnology*[1], gilsonite bitumen is chemically composed primarily of carbon, hydrogen, nitrogen, oxygen, and sulfur (Table 1). It is over 99% organic matter.

Gilsonite is typically mined by hand underground using pneumatic chipping hammers and conveyed to the surface through a centrifugal blower. It is used in products such as dark-colored printing inks and paints, oil well drilling muds and cements, asphalt modifiers, foundry sands additives, and a wide variety of chemical products.

Table 1. Chemical Composition of Gilsonite

Parameter	**Composition (by weight, %)**
Carbon (C)	84.4
Hydrogen (H)	10.1
Nitrogen (N)	3.3
Oxygen (O)	1.4
Sulfur (S)	0.3
Organic Matter	99.3

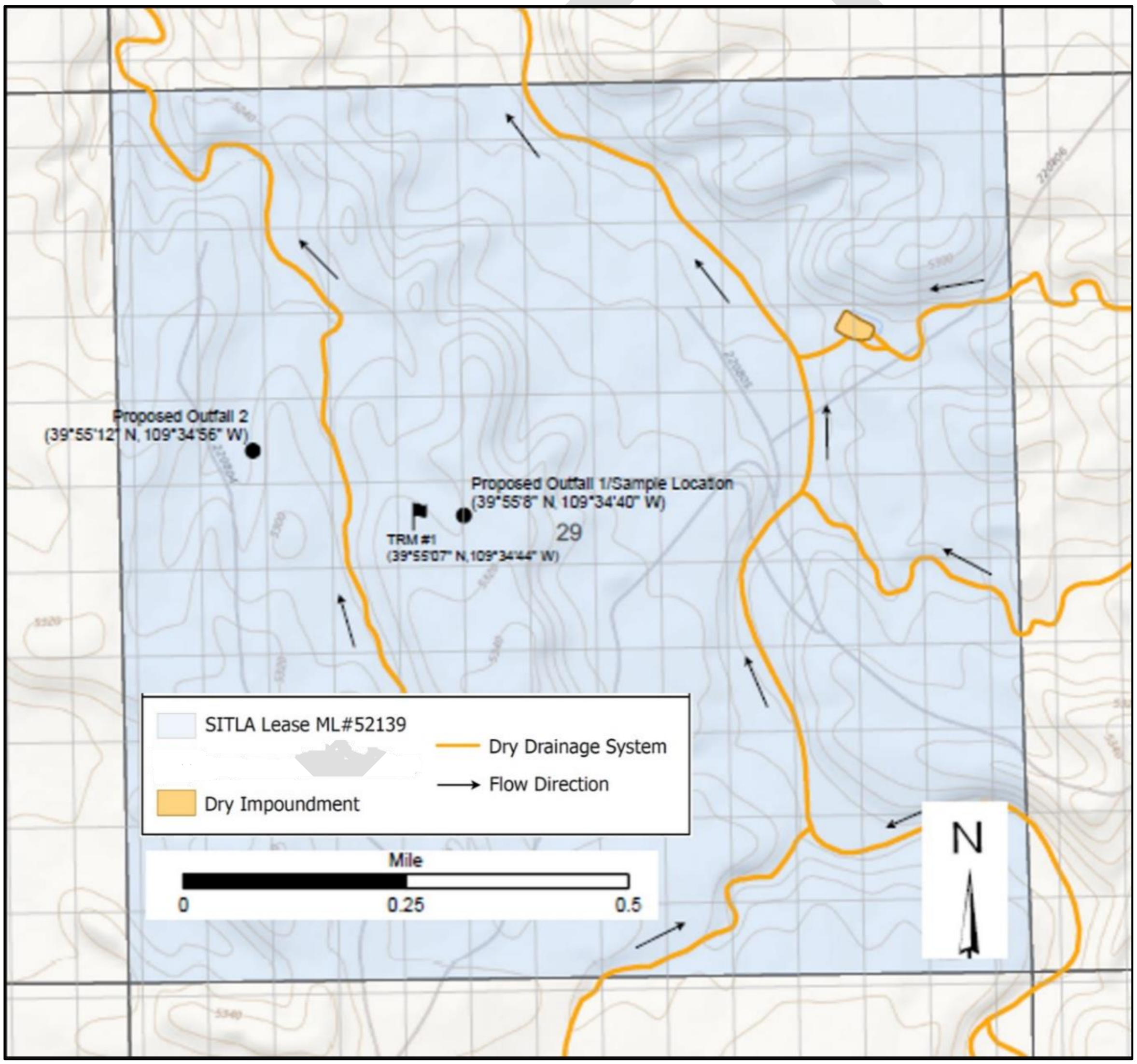
The Facility is located approximately 37 miles south of Vernal, Utah, in Section 29, Township 10S, Range 21E on the Uintah & Ouray Reservation. The Permittee is proposing to permit two outfalls – Outfalls 001 and 002 (Table 2). Outfalls 001 and 002 are approximately 0.25 miles apart along the Cottonwood gilsonite vein (Figure 2). The outfalls would discharge to unnamed tributaries that flow into Cottonwood Wash. Both outfalls are approximately 15 miles upstream of the White River, which is the first downstream perennial water body. All discharges covered by the Permit are groundwater dewatering only; no process wastewater is generated by the Facility or authorized by the Permit. The coordinates in the title page above refer to the location of Outfall 001.

[1] Nciri N, Song S, Kim N, Cho N (2014) Chemical Characterization of Gilsonite Bitumen. J Pet Environ Biotechnol 5:193

Table 2. Outfall Locations and Descriptions

Outfall	Latitude (°N)	Longitude (°W)	Associated Vein	Current Treatment Process	Receiving Water
001	39.9189	109.5778	Cottonwood Vein	Not yet operational	Unnamed tributary of Cottonwood Wash
002	39.9200	109.5822	Cottonwood Vein	Not yet operational	Unnamed tributary of Cottonwood Wash

Figure 2. TRM#1 Outfall and Mine Shaft Locations

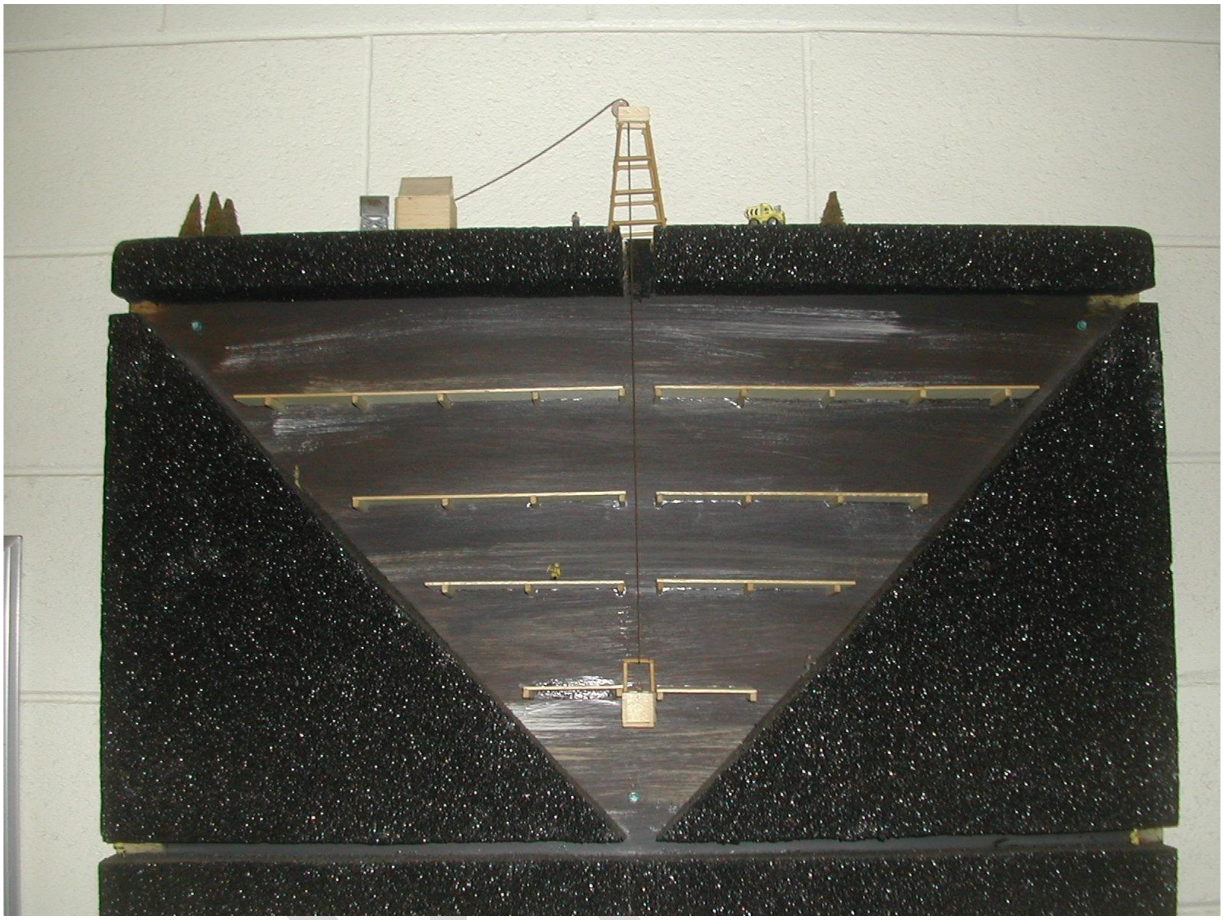


3.1 Facility Process Description

At the TRM#1 Mine site, the Cottonwood gilsonite vein outcrops in the Uintah Formation and extends from the surface in a nearly vertical direction to the top of the Green River Formation (approx. 1200 feet down). The vein varies in width from two to four feet and has been mapped to seven miles in length[2]. The current mining practice is known as a shaft and slope mine (Figure 3). A vertical shaft is developed on the vein. When there are multiple shafts adjacent to each other, they are connected underground by drifts (horizontal tunnels) in the ore. Mining begins by creating a 45 degree slope on each side of the shaft. Miners utilize hand held pneumatic chipping hammers to break the gilsonite ore from the slope. This mining technique minimizes contamination of the ore by the surrounding rock. The gilsonite ore falls by gravity to the bottom of the slope, where it is conveyed by vacuum into a vent pipe and transported to the surface. Air lift fans located on the surface pull the ore to the top of the headframe and into a filter-receiver. The filter-receiver separates the gilsonite from the airstream. The filtered air is discharged to the atmosphere, and the gilsonite is discharged to sealed ore silos. The ore is then transported offsite in covered trucks either directly to a customer, or to processing/packaging plant about 25 miles away near Randlett, Utah. No gilsonite processing or packaging occurs on-site at the TRM#1 Mine.

[2] Utah Geological Survey, 2012. *Gilsonite Veins of the Uinta Basin, Utah*, Special Study 141, Utah Geological Society (a division of the Utah Department of Natural Resources).

Figure 3. Shaft and slope mine



The groundwater table in the area is located at a depth of approximately 350 feet below the surface. When mining reaches the groundwater table, the shaft depth is maintained 50-100 feet deeper than the active mining operations. This additional depth creates a sump into which a submersible pump is placed. The placement of the pump lower in the mine drains the water away from the active mining areas, keeping the ore dry and preventing water from entering the air lift system. Should any water/gilsonite mixture enter the air lift system, that mixture is deposited on a drying pad located on the surface where the water is allowed to evaporate. This process does not result in any discharge. The water pumped from the mine will be discharged at the permitted outfall locations, either with or without treatment depending on the water quality.

Over the course of time, the area accessible in existing mining shafts is depleted of gilsonite ore. New shafts are progressively sunk further along the vein in one or both directions, and existing shafts are abandoned. This process necessitates new outfalls being added over time as the active mining progresses along the vein. There are currently two permitted outfalls at the Facility (Table 2). Any new outfalls would need to be permitted through either a modification of this Permit, or a new permit.

The surface footprint of the mine at each outfall is relatively small. Each mining “pad” encompasses approximately one to two acres with a headframe, several ore silos, a vault toilet, a storage shed, and the hoist house, along with a large circular driveway for trucks to pull through (Figures 4 and 5).

Figure 4. Aerial photo of TRM#1 Mine

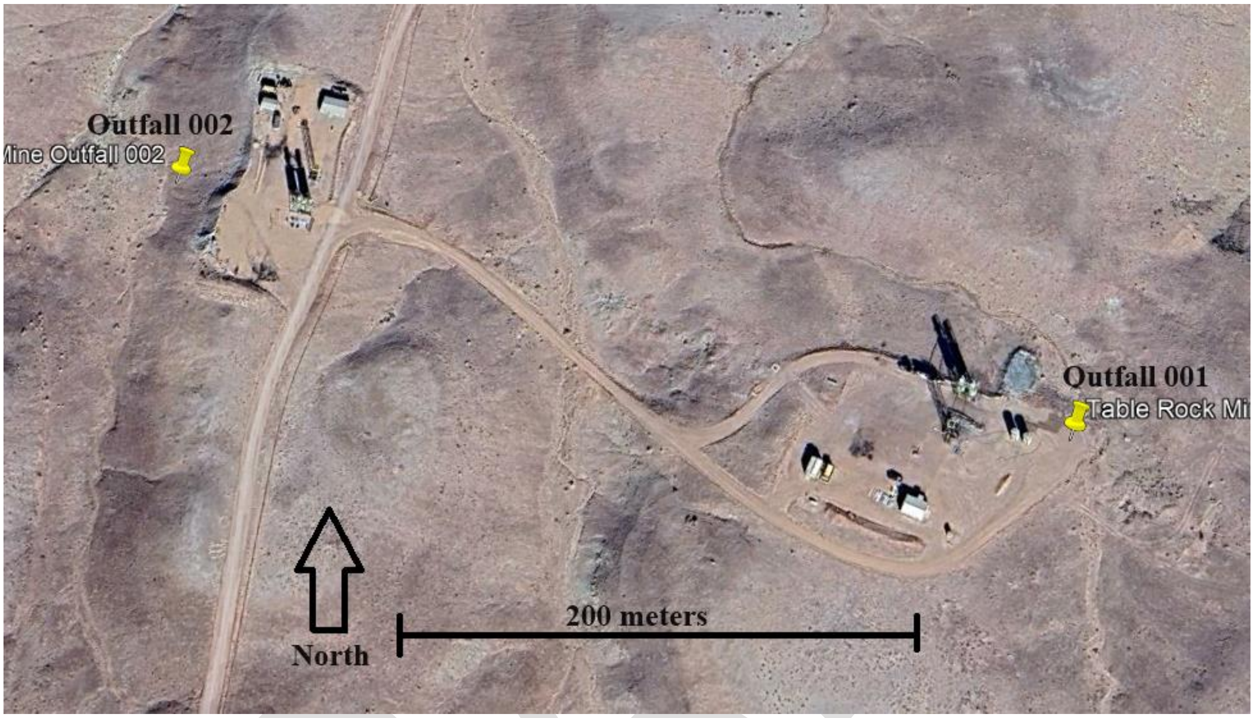


Figure 5. Surface photo of TRM#1 mine (future site of Outfall 001)

3.2 Treatment Process

The Facility has not yet discharged. At a nearby gilsonite mine along the same vein (which likely means similar water quality), both high pH and high total suspended solids (TSS) have been reported to occur in the discharged dewatered groundwater. The nearby mine has installed treatment for these two parameters and these are discussed here as it is likely the TRM#1 mine may implement similar treatment processes.

At the nearby gilsonite mine, when pH adjustment is required the water is pumped to a treatment shed on the surface. This shed contains a 55-gallon drum of concentrated sulfuric acid that is used to adjust the high pH discharge water. A sensor relays the pH of the water to the injection control system, where concentrated sulfuric acid is injected into the pipe to adjust the pH down to roughly 8.75. In cases where TSS treatment is needed, a bag filter is installed at the end of the discharge pipe and is replaced as needed.

3.3 Chemicals Used

The Facility is not yet discharging wastewater. Other gilsonite mines use concentrated sulfuric acid to adjust pH when necessary. It is possible that the Facility will implement the use of sulfuric acid for pH adjustment at this facility if they are unable to meet permit limits without its use.

4 PERMIT HISTORY

This is the first NPDES permit issued to the Facility.

4.1 Discharge Monitoring Report (DMR) Data

While there is no DMR data, the Facility provided the EPA with sampling data from two separate monitoring events from their existing mine shaft. This water is representative of what will be discharged at Outfall 001. The first set of data was included with their permit application, and the second set of data was provided shortly after they submitted their permit application, and included data similar to the first, plus a priority pollutant scan for inorganics, metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs).

Table 3. Summary of both sets of sampling data provided by Table Rock Minerals for water representative of proposed Outfall 001

Parameter	Reported Average	Reported Range	Number of Data Points
Total Dissolved Solids (TDS), mg/L	1,120	1,080 – 1,160	2
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L	50	25 – 75	2
Chloride, mg/L	57.3	57.2 – 57.4	2
Nitrate as N, mg/L	0.135	0.13 – 0.14	2
Nitrite as N, mg/L	ND	ND	2
Sulfate, mg/L	108.6	35.2 – 182	2
Calcium, mg/L	4.1	4.1	1
Magnesium, mg/L	1.3	1.3	1
Potassium, mg/L	1.2	1.2	1
Sodium, mg/L	411	411	1
Total Phenols, mg/L	ND	ND	1
Ammonia	1.35	0.94 – 1.76	2
Total Suspended Solids (TSS), mg/L	13	5 – 21	2
pH, standard units	9.35 a/	9.3 – 9.4	2
Oil & Grease, mg/L	3.5	ND – 7	2
Cyanide, Total, mg/L	0.02	0.02	1
Metals (excluding arsenic and chromium – they are listed separately below), mg/L b/	ND	ND	1 sample event/11 compounds analyzed

Parameter	Reported Average	Reported Range	Number of Data Points
Arsenic, mg/L	0.0012	0.0012	1
Chromium, mg/L	0.0008	0.0008	1
Semi-volatile Compounds (SVOCs), µg/L	ND	ND	1 sample event/60 compounds analyzed
Volatile Organic Compounds (VOCs), µg/L	ND	ND	1 sample event - 69 compounds analyzed

a/ Median reported pH.
b/ Metals in this dataset included arsenic, antimony, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc.

4.2 Other Environmental Permitting History

The Facility was issued an air pollution control permit as a minor source to construct on September 23, 2021. The permit number is #TMNSR-UO-007057-2021.002. The Facility also has a small mine permit from the Utah Division of Oil, Gas, and Mining – permit # S/047/0121. Their Mine Safety and Health Administration (MSHA) mine ID # is 42-02677. Additionally, the mine is covered under mining lease ML #52139 OBA.

5 DESCRIPTION OF RECEIVING WATER

Outfalls 001 and 002 would discharge to unnamed tributaries that flow into Cottonwood Wash. Cottonwood Wash flows north into the White River approximately 15 miles downstream of the Facility. The White River is a tributary of the Green River, which is a tributary of the Colorado River. The White River is a perennial stream, and there is a USGS gage on the White River upstream of its confluence with Cottonwood Wash (USGS 09306500, White River near Watson, Utah) that reports a 7Q10 low flow of approximately 86 cubic feet per second (equivalent to 55.7 million gallons per day [mgd]) for the period 1951-2020. The Facility is in hydrologic unit code (HUC) 14050007 (Lower White). According to the Permittee (verified by a few USGS flow measurements) Cottonwood Wash and its tributaries are dry most of the year, typically only flowing a few days per year in response to rainfall or snowmelt events. Based on this, both discharge locations have no dilution flow.

6 PERMIT LIMITATIONS

6.1 Technology Based Effluent Limitations (TBELs)

6.1.1 Effluent Limitations Guidelines

This facility is categorized as an asphaltic mining facility and falls under Federal Effluent Limitations Guidelines (ELGs) in 40 CFR Part 436, Subpart F – Asphaltic Mineral Subcategory of the Mineral Mining and Processing Point Source Category. The provisions of this subpart are applicable to the processing of bituminous limestone, oil-impregnated diatomite, and *oilsonite* not primarily as an energy source. However, the development document for the federal ELGs mentions "bituminous limestone, oil-impregnated diatomite, and *gilsonite*," and in fact used a nearby gilsonite facility as the basis for ELG development. The development document does not mention oilsonite, and furthermore the preamble language published in the October 16, 1975 Federal Register (40 Fed. Reg. 48652-48664) discusses gilsonite, before using the term oilsonite in the actual rule. Based on this, the EPA has determined that this is a typo in the rule language portion of the 1975 Federal Register that was propagated into 40 CFR Part 436, and that it is meant to address gilsonite. Section 436.62 contains the following best practicable control technology (BPT) requirements:

a) Subject to the provisions of the following paragraphs of this section, there shall be no discharge of process generated wastewater pollutants into navigable waters.

b) Only that volume of water resulting from precipitation that exceeds the maximum safe surge capacity of a process wastewater impoundment may be discharged from that impoundment. The height difference between the maximum safe surge capacity level and the normal operating level must be greater than the inches of rain representing the 10-year, 24-hour rainfall event as established by the National Climatic Center, National Oceanic and Atmospheric Administration for the locality in which such impoundment is located.

According to the NOAA Precipitation Frequency Data Server, which was accessed on September 20, 2023, the 10-year, 24-hour rainfall total for this location is approximately 1.42 inches.

There is no processing or manufacturing of gilsonite located at the site. The only water use is when the Facility discharges mine dewatering water associated with lowering the groundwater table prior to active mining (see section 3.1). This type of mine dewatering does not meet the definition of process wastewater in 40 CFR § 122.2. Thus, this discharge is considered non-process wastewater and the ELGs listed above are not currently applicable to discharges from this facility. If the Permittee plans to begin generating and discharging process wastewater at the Facility, the Permittee must submit a request for a permit modification to be allowed to discharge in accordance with the ELGs listed above (see section 6.3.14).

6.1.2 Case-By-Case TBEL for Total Suspended Solids (TSS)

Total suspended solids are the single most important pollutant parameter found across the mineral mining and processing industry. TSS includes both organic and inorganic materials. The inorganic compounds typically include sand, silt, and clay. The organic fraction typically includes such materials as organic carbon, grease, oil, and tar. Suspended solids are mobilized into the water column by many processes at mines, including pumping water, rainwater or groundwater runoff from an active mining site, and processing minerals and ore.

Solids may be suspended in water for a time, and then settle to the bed of the stream or lake. While in suspension, they increase the turbidity of the water, reduce light penetration and impair the photosynthetic activity of aquatic plants. When suspended solids settle out of the water column and form sludge deposits on the stream or lake bed, they are often damaging to the life in water. Disregarding any toxic effect attributable to substances leached out by water, suspended solids may kill fish and shellfish by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids are harmful to aquatic life because they screen out light, and they promote and maintain the development of noxious conditions through oxygen depletion. This results in the killing of fish and fish food organisms. Suspended solids also reduce the recreational value of the water.

TSS is easily controlled with economically affordable technologies, and controlling TSS at mining point source dischargers is common throughout Region 8 and the country. The two other gilsonite mines have TSS limits based on backsliding from permits written by another permitting agency over 30 years ago, and they have generally been able to meet these limits by applying these economically affordable technologies. For this facility, the EPA is using best professional judgment to set a case-by-case Best Practicable Control Technology Currently Available (BPT) limitation for TSS in mine dewatering water as allowed by 40 CFR § 125.3(c)(2). The development of the case-by-case BPT values are further discussed below, are similar to limitations imposed on other gilsonite mines, and are similar to other "mine dewatering" BPT limits developed and implemented in 40 CFR Part 436[3].

40 CFR § 125.3(c)(2) states that technology-based treatment requirements may be imposed on a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable. The permit writer shall apply the appropriate factors listed in § 125.3(d) and shall consider:

a) The appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information; and
b) Any unique factors relating to the applicant.

40 CFR § 125.3(d) further states that when setting case-by-case limitations pursuant to § 125.3(c), the following factors must be considered for BPT requirements:

a) The reasonableness of the relationship between the costs of attaining a reduction in effluent and the effluent reduction benefits derived;
b) The comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources;
c) The age of equipment and facilities involved;
d) The process employed;
e) The engineering aspects of the application of various types of control techniques;
f) Process changes; and

[3] EPA, 1979. *Development Document for Effluent Limitations Guidelines and Standards for the Mineral Mining and Processing Industry Point Source Category*. EPA 440/1-76/059b, July 1979.

g) Non-water quality environmental impact (including energy requirements).

The existing ELGs for gilsonite mines in 40 CFR Part 436, Subpart F prohibit discharge of process wastewater, but the ELGs do not cover the groundwater dewatering sub-category in the gilsonite industry. This may be because at the time of development, the only gilsonite mine in the country did not discharge mine dewatering water and so the development documents focused only on process wastewater. However, as of 2024 the standard industry practice is to discharge dewatering water – one reason for this change may be that most gilsonite mines have delved much deeper than the mines in the 1970s did; regardless, it is reasonable to re-visit this consideration. Mine dewatering wastewater is that portion of mine drainage that is pumped, drained or otherwise removed through the direct action of the mine operator. Pit pumpage of ground water, seepage and precipitation or surface runoff entering the active mine workings is an example of mine dewatering. Dewatering water does not meet the definition of process wastewater in 40 CFR § 122.2, and is discussed as a separate category in the development document as well. Specific to gilsonite mines, when the gilsonite vein lies beneath the groundwater table, the shaft depth is maintained 50-100 feet deeper than the active mining operations and a submersible pump is placed in this sump to pump groundwater to the surface, so that active mining can occur. This water does not come into contact with the gilsonite during the active mining process.

Best practicable control technology currently available emphasizes treatment at the end of a manufacturing process, but also includes the control technology within the process itself when it is considered to be normal practice within an industry. For mine dewatering, minimizing TSS introduction into the dewatering water in the first place can also be an important consideration. For the mineral mining industry, the BPT level of technology may also be assessed using performance metrics by facilities of various sizes, ages, and processes within the individual subcategory. There are currently two other operating gilsonite mines in the U.S., both located in Utah. These are the American Gilsonite Bonanza Mine (NPDES ID UT0000167) and the American Gilsonite Cottonwood Mine (NPDES ID UT0025259). Both have implemented TSS controls in their permits for several years. Data from both of these facilities was analyzed in the development of this case-by-case TBEL.

The EPA considered two types of common TSS reduction technologies in mine dewatering: pond settling of suspended solids prior to discharge, and a simple “bag” or “pipe sock” filtration system attached to the end of a discharge pipe – both of which are effectively used at other mines to substantially reduce TSS in their discharge. These represent the appropriate technologies for the gilsonite subcategory and both of these are economically affordable to the Facility. Both are discussed further below.

Settling ponds: Settling ponds are the predominant treatment technique for removal of suspended solids in the mining industry. Settling ponds are versatile in that they perform several waste-oriented functions including solids removal (i.e., solids settle to the bottom and the clear water overflow is much reduced in suspended solids content), equalization and water storage capacity (i.e., the clear supernatant water layer serves as a reservoir for reuse or for controlled discharge), and solid waste storage (i.e., the settled solids are provided with long term storage). Their versatility, ease of construction, low maintenance, and relatively low cost, explain the wide application of settling ponds as compared to other technologies.

The performance of these ponds depends primarily on the settling characteristics of the suspended solids, the flow rate through the pond, and the pond size. Settling ponds can be used over a wide range of suspended solids levels. As the ponds fill with solids they can be dredged to remove these solids or they may be left filled and new ponds provided. The choice often depends on whether land for additional new ponds is available. When suspended solids levels are low and ponds large, settled solids build up so slowly that neither dredging nor pond abandonment is necessary for a period of many years.

The chief problems experienced by settling ponds are rapid fill-up, insufficient retention time and the closely related short circuiting. The first can be avoided by constructing larger or multiple ponds. The solution to the second involves additional pond volume or use of flocculants. The third problem, however, is almost always overlooked. Short circuiting is simply the formation of currents or water channels from pond influent to effluent whereby whole areas of the pond are not utilized. The object is to achieve a uniform plug flow from pond influent to effluent. This can be achieved by proper inlet-outlet construction that forces water to be uniformly distributed at those points, such as by use of a weir. Frequent dredging or insertion of baffles will also minimize channelling. A final consideration for settling ponds is that they can take up considerable physical space, and depending on the geography and topography of the specific site, it may be infeasible to install them without a significant amount of earthwork.

Filtration: Bag filtration is accomplished by passing the wastewater stream through a solids-retaining “bag” or “sock” cloth attached to the end of the discharge pipe, using gravity flow as the driving force. Filtration is versatile in that it can be used to remove a wide range of suspended particle sizes. These filters often have a maximum flow rate that cannot be exceeded, but many gilsonite discharges (including this one) are not particularly high flows, and alternatively, outfalls can be re-structured into multiple split pipes with bag filters on each for higher discharge rates. The cost of these units is very low, and when they are fouled they can easily be removed from the outfall, quickly replaced, and disposed of properly.

There were a total of 111 samples collected representing treated effluent at the two facilities used in this analysis. One data point was an outlier, and after internal discussion it was removed from this dataset because it was determined that it did not actually represent treated effluent (i.e., the technology failed). The remaining 110 samples were used for the analysis below (Table 4). This treated TSS effluent data collected from the two other gilsonite mines shows that using these technologies, the mines are able to achieve a long term average (LTA) of approximately 5 mg/L of TSS in their effluent (Figure 6). Although there are several methods for developing a technology-based permit limit using the data, the EPA generally uses statistical procedures. These procedures involve fitting effluent data to distributions and using estimated upper percentiles of those distributions. These methods are further described in the EPA’s Technical Support Document for Water Quality-based Toxics Control[4] (commonly referred to as the “TSD”), which suggests using a confidence level

[4] EPA, 1991. Technical Support Document for Water Quality-based Toxics Control, Office of Water, EPA/505/2-90-001

approach combined with a relatively high percentile of the data to determine a statistically defensible value that is then implemented as an average monthly limit (AML) and/or a maximum daily limit (MDL). The TSD recommends using the 95^{th} and 99^{th} percentiles of data for determining the AML and MDL, respectively, but does allow the regulatory agency discretion to select other percentiles based on additional considerations. In this particular case, the EPA Region 8 decided to use the 97.5^{th} percentile of data to develop the AML instead of the 95^{th} percentile. Several factors led to this break from the traditional approach – one is that this is a relatively small dataset coming from only two nearby facilities. This introduces higher uncertainty into the analysis. Additionally, while the data suggests that these technologies are economically affordable, the EPA Region 8 did not have access to detailed financial data regarding the actual cost to implement these technologies. Since the EPA is setting limits based on technology, there is a greater need to be sure that the technology can actually be implemented and consistently met on a long-term basis.

There were a number of non-detects included in the dataset. To account for these in the parametric statistics below the method detection limit, a distributional method was used to generate data between zero and the method detection limit for these values. All data analyzed for this case-by-case TBEL is available as part of the permit record.

Table 4. Statistical summary of dataset analyzed for case-by-case TBEL

Metric	Value
Count	110
Non-Detects	58
Long-Term Average (mg/L)	4.85
Standard Deviation (mg/L)	7.39
Median (mg/L)	0.98
Coefficient of Variation	1.52
Monthly Avg multiplier from TSD	4.93
Daily Max multiplier from TSD	7.52
Average Monthly Effluent Limit based on 97.5th percentile of data (mg/L)	24
Maximum Daily Effluent Limit based on 99th percentile of data (mg/L)	37
Number of hypothetical exceedances: AML	2
Number of hypothetical exceedances: MDL	1

The 97.5^{th} and 99^{th} percentiles of the data using the TSD method are approximately 24 mg/L and 37 mg/L. These line up well with the other mineral mining category dewatering water ELGs (Figure 7), as well as a number of process wastewater ELGs in the same category.

Figure 6. Treated TSS Discharges at Nearby Gilsonite Mines

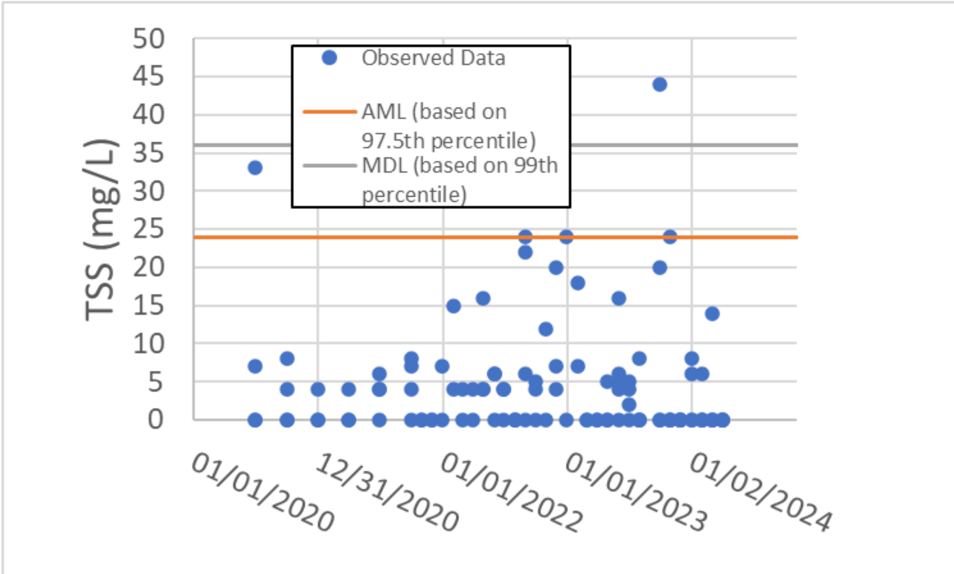
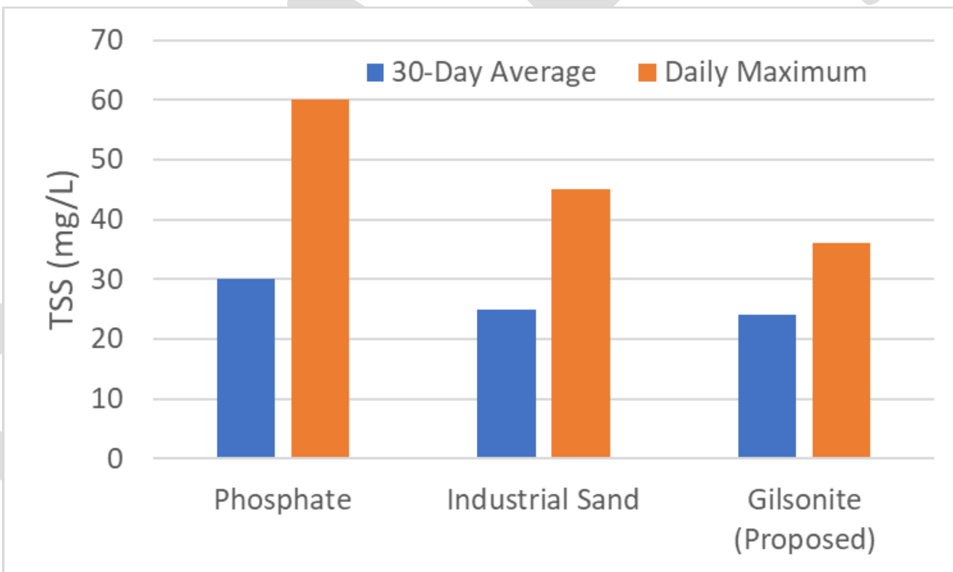


Figure 7. Dewatering ELGs Found in 40 CFR Part 436 (Mineral Mining Subcategory)



Below, each of the factors in 40 CFR § 125.3(d) is addressed to develop this case-by-case TBEL.

a) The reasonableness of the relationship between the costs of attaining a reduction in effluent and the effluent reduction benefits derived – the effluent reductions being achieved can be significant. The natural groundwater at gilsonite mines is very low in TSS, so TSS is primarily introduced during the shaft sinking process and when active construction is ongoing. Therefore, there is a wide range of "untreated" TSS values, from non-detects up to several hundred milligrams per liter. However, the average reduction between untreated and "treated" dewatering water at these mines was approximately 50%. Since dewatering water is often at or below non-detect even before treatment, a better way to look at it is that treatment technologies have reduced hypothetical exceedances from around 12% of samples (21 exceedances out of 180 "untreated" samples) to less than 2% of samples (2 exceedances out of 110 "treated" samples). As discussed above, these technologies can be implemented for a small capital cost as well as a small operational and maintenance cost. At this particular facility, the estimated discharge rate is low – 20 gallons per minute while operating. Low rates of discharge require smaller ponds, less frequent maintenance of both ponds and filters, etc. which bring down the cost of retaining reductions even more.

b) The comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works (POTWs) to the cost and level of reduction of such pollutants from a class or category of industrial sources – TSS is one of the most common limited parameters in POTWs. 40 CFR Part 133 requires all POTWs (with limited exceptions) to reduce TSS in their effluent to below 30 mg/L as a monthly average, and below 45 mg/L as a daily maximum, because the cost to do so is relatively low. The level of reduction would be very similar in this case, but the cost associated with it would be much lower. TSS in municipal wastewater is more complex, and can be attributed to organic matter in the water, algal growth, suspended solids, etc. The TSS in the case of this facility is simply due to suspended solids in the dewatering water.

c) The age of equipment and facilities involved – The Facility is a new discharger, and as such can install new equipment and design discharge systems with either of these types of technology in mind up front without incurring costs associated with any process or layout modifications. All equipment would be new and thus have a long life cycle.

d) The process employed – The process employed would either be digging a small retention pond, or installing a filter at the end of the discharge pipes. Other potential processes (i.e., chemical flocculation, centrifuges/hydrocyclones, and total retention) would have significantly more economic impact at the Facility and would require electricity or larger footprints, addition of chemicals, etc. Therefore, these were not considered in the economic evaluation.

e) The engineering aspects of the application of various types of control techniques – this type of technology is very simple to design, engineer, install, and maintain. Other types of control techniques would be much more complex (see discussion in 'd' above) and would require significantly more infrastructure.

f) Process changes – Because the Facility is new and both of these technologies are easily installed (new or retrofit) at the end of a process train, there would be no process changes required for these technologies.

g) Non-water quality environmental impact (including energy requirements) – this technology, once installed, is passive and has no identified non-water quality environmental impacts (such as energy use, etc.). No adverse environmental impacts have been found for such discharges. Neither technology requires any energy use once installed, and both are designed as fairly "passive" systems where little maintenance is required. Additionally, evaluating the "no discharge" option shows that there may be some benefits to discharge – facility personnel claim that wildlife and local livestock use or have used in the past the dewatering discharge from other gilsonite mines as a water source.

Considering the relatively simple and inexpensive implementation of these technologies, their proven ability to substantially reduce TSS in the discharge, and the robust dataset and analysis provided above, the EPA will implement a case-by-case Best Practicable Control Technology Currently Available (BPT) limitation (as allowed by 40 CFR § 125.3(d)) in the gilsonite subcategory at the Facility, and apply an average monthly limit of 24 mg/L for TSS in mine dewatering, and a maximum daily limit of 37 mg/L TSS in mine dewatering (Table 5).

Table 5. Case-by-case BPT for TSS in gilsonite mine dewatering discharges at the Facility

Effluent characteristic	Maximum effluent limitation for any 1 day (i.e., maximum daily limit)	Average of Daily values for 30 consecutive days shall not exceed (i.e., average monthly limit)
TSS	37 mg/L	24 mg/L

6.2 Water Quality Based Effluent Limitations (WQBELs)

The Facility discharges to unnamed tributaries of Cottonwood Wash. The receiving water is within the Uintah & Ouray Reservation. The Ute Tribe does not have EPA-approved water quality standards under Section 303(c) of the Clean Water Act (CWA). Section 101(a)(2) of the CWA states, "[I]t is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water to be achieved by July 1, 1983." To achieve this Congressional goal in the absence of federally-approval Tribal water quality standards (WQS) on the Reservation, the EPA considers the beneficial uses of the receiving waters to include aquatic life and recreation. The EPA relied on CWA § 301(b)(1)(C) and principles of Tribal sovereignty in establishing WQBELs based on the EPA's Section 304(a) recommended water quality criteria (WQC) to protect the uses of the Tribe's receiving water(s). The Permit also contains a re-opener provision to allow the EPA to re-open the Permit for modification if EPA-approved water quality standards are developed at a future date.

The receiving waters are all within the Uintah & Ouray Reservation and do not reach state of Utah waters for approximately 100 miles downstream (after the White River joins the Green River) and after significant dilution. Therefore, state of Utah water quality standards were not considered in the issuance of this Permit.

On February 21, 2024, the Ute Indian Tribe and the EPA participated in government to government consultation on the development of this Permit. During this process, the Ute Indian Tribe indicated that they were concerned with potential impacts to water rights in the area, the accuracy of flow measurements, and would like the monitoring requirements in this permit to look similar to the monitoring requirements in other gilsonite permits that they have consulted on.

In addition to the Ute Indian Tribe's concerns, the EPA considered the following additional sources for potential water quality-based effluent limits.

6.2.1 Colorado River Basin Salinity Control Act

Salinity impacts are a major concern in the Colorado River watershed. The Colorado River flows more than 1,400 miles from its headwaters in the Rocky Mountains through portions of seven states and the Republic of Mexico before it discharges into the Gulf of California.

The Colorado River provides drinking water to approximately 40 million people in both the US and Mexico, and irrigation water to 5.5 million acres. The salinity of the Colorado River increases as it flows downstream.

In 1973, the Colorado River Basin states came together and organized the Colorado River Basin Salinity Control Forum (Forum). In 1974, in coordination with the Department of the Interior and the U.S. State Department, the Forum worked with Congress to pass the Colorado River Basin Salinity Control Act (CRBSCA). The goal of the CRBSCA is to decrease salt loading in the Colorado River. Among other things, the CRBSCA establishes salinity guidelines for point sources (both municipal and industrial) discharging into the Colorado River watershed. Since implementation of the CRBSCA, measures have been put in place which significantly reduce the annual salt load of the Colorado River.

Per the CRBSCA, industrial dischargers such as the Facility may not discharge more than one ton per day (or 366 tons per year – the policy allows for either a daily or annual loading limit) of total dissolved solids (TDS) to the Colorado River watershed. There are variances that can be applied to these criteria based on cost and the connectivity to intercepted groundwater, but the EPA is not considering any for the issuance of this Permit.

6.2.2 EPA Recommended Water Quality Criteria for Aquatic Life

The EPA has developed basic guidance and national recommended water quality criteria[5] discussing many identifiable effects on the health and welfare of aquatic life which may be expected from the presence of pollutants in water. This guidance addresses several pollutants which are relevant to this facility, such as pH, dissolved oxygen, oil and grease, etc. These are further discussed below.

6.2.3 Total Maximum Daily Loads (TMDLs)

Section 303(d) of the CWA authorizes the EPA to assist states, territories and authorized tribes in listing impaired waters and developing Total Maximum Daily Loads (TMDLs) for these waterbodies. A TMDL establishes the maximum amount of a pollutant allowed in a waterbody and serves as the starting point or planning tool for restoring water quality. Currently, there are no 303(d) listings for impairment nor developed TMDLs on the Uintah & Ouray Reservation. The Permit contains a re-opener provision to allow the EPA to re-open the Permit for modification if a TMDL is developed at a future date.

6.3 Determinations for Pollutants of Concern and Reasonable Potential Analyses for Final Effluent Limitations

Effluent limitations in the Permit are derived from the parameter-specific discussions below.

[5] EPA. National Recommended Water Quality Criteria Tables, pursuant to Section 304(a) of the Clean Water Act. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-tables

6.3.1 Total Suspended Solids (TSS)

TSS is a basic water quality parameter often used to determine the general quality of water. It measures the amount of material suspended in the water column that is not dissolved and can be removed by filtration. High TSS is often correlated with higher concentrations of other pollutants (i.e., nutrients, metals, BOD_5, bacteria, etc.) in the water column and can have direct impacts on aquatic life by blanketing the bottom of water bodies damaging invertebrate populations, blocking gravel spawning beds, and removing dissolved oxygen from the water column.

The Tribe has not adopted any water quality standard related to TSS. Due to the ability of many technology-based TSS controls to reduce TSS to a level found in natural systems, the EPA has determined that the case-by-case TBEL developed for gilsonite mines (see section 6.1.2) will be protective of existing stream quality. Therefore, a TSS limit of 24 mg/L as a monthly average and 37 mg/L as a daily maximum will be implemented in the Permit.

6.3.2 Temperature

There are no technology-based temperature effluent limitations for gilsonite mines, nor has the Ute Indian Tribe adopted any temperature water quality standards at this time. Furthermore, this Permit authorizes the discharge of groundwater, which is typically cooler than ambient surface temperatures in the summer and warmer than ambient surface temperatures in the winter, thereby moderating surface water temperatures year-round. Furthermore, temperature is not a conservative pollutant – as it flows across the landscape or through the subsurface layer, it equilibrates with ambient temperatures. Therefore, an effluent limit for temperature is not included in the Permit.

During government to government consultations, the Ute Indian Tribe requested that water temperature be included as a monitoring parameter in the Permit. Since water temperature is a default reporting requirement for submitting NPDES permit applications and renewals and is a simple, inexpensive parameter to monitor, the EPA agrees that collecting baseline water temperature data is reasonable and would help verify the assumption that groundwater discharges will exhibit low variability and relatively moderating temperatures year-round. Water temperature is easily measured in the field and can be co-measured with pH using inexpensive, portable, hand-held meters. The EPA has implemented temperature monitoring requirements (see section 7.1.3).

6.3.3 pH

The Facility's application data shows that pH values are above 9.0. Other nearby gilsonite mines also show high pH values. The EPA recommends a pH range for aquatic life of 6.5-9.0. Based on this, the Facility does have reasonable potential to cause or contribute to an exceedance of this recommended freshwater criteria, and a pH range limit of 6.5-9.0 will be included in the Permit, based on the EPA's national recommended freshwater aquatic life pH criteria.

6.3.4 Total Dissolved Solids (TDS)/Salt Load

TDS are present in high amounts in groundwater in this area. TDS can impact drinking water aesthetics, aquatic life, agriculture, and livestock uses of water. Extraction industries that discharge stormwater and/or groundwater often show elevated levels of TDS in the effluent. However, the Tribe has not adopted any water quality standards or designated uses related to TDS. Therefore, a TDS-specific effluent limit is not included in the Permit.

However, per the Colorado River Basin Salinity Control Act, and the *Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program for Intercepted Ground Water*, the Permit will include an effluent limit of 366 tons of salt per year (equivalent to one ton of salt per day) – measured as a combination of TDS and flow – and requires reporting on a rolling quarterly basis. TDS monitoring will also be used to better characterize the effluent and establish a baseline condition for the Facility.

6.3.5 Oil & Grease

The Facility uses pumps to discharge water, and generators to run these pumps. Machinery such as these contain oils and petroleum products, and they represent a potential for discharge of oil and grease. There are no specific dewatering ELGs developed for concentration limitations on oil and grease. However, the EPA's 1986 recommended aquatic life criteria recommends that "surface waters shall be virtually free" from floating oils of petroleum origin, as "floating sheens of such oils result in deleterious environmental effects." The EPA Region 8 has developed a protocol to implement the 1986 criteria in tribal permits using a dual approach: frequent visual observations of the discharge point looking for a visible sheen or floating oil, and if either of those is observed, a sample must be immediately taken and analyzed for oil and grease with an effluent limitation of 10 mg/L.

This protocol also aligns with the Discharge of Oil Regulation or "sheen rule," which prohibits discharges of oil in such quantities as may be harmful (40 CFR § 110.3). This part defines "may be harmful" as a discharge of oil that would "cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines." The EPA has implemented a narrative limit to address both this concern and the visual assessment protocol above. This dual approach – including a narrative and numeric limit – will be included in this Permit.

6.3.6 Dissolved Oxygen (DO)

Groundwater is typically low in DO. Data from a nearby gilsonite mine indicates that the groundwater typically contains around 1.0 mg/L DO before any treatment. However, the Facility's discharges are to dry sand washes approximately 15 miles from the nearest perennial waterbody. Low dissolved oxygen levels are not a conservative pollutant – oxygen is readily absorbed by water flowing downhill in the ambient atmosphere. The discharges are also expected to be intermittent in nature (i.e., the Facility plans to only discharge four days per week). The discharges at these outfalls do not have reasonable potential to affect any downstream water quality standards. Therefore, DO is not a potential pollutant of concern and DO effluent limitations and monitoring will not be required at this time.

6.3.7 Metals

Metals (especially heavy metals) can be pollutants of concern at many mines. They are often found in underground deposits and can be toxic to most aquatic life as well as humans and other animals. However, gilsonite is a hydrocarbon bitumen and not a metal ore (Table 1). According to the 2014 paper cited on page 3 (Nciri *et al*.), "[gilsonite] [b]itumen also contains trace quantities of metals such as vanadium, nickel, iron, magnesium, and calcium…" The pneumatic mining process is not known to introduce additional metals or acidic compounds which would cause metals to leach from existing soils or soils adsorbed to gilsonite. Additionally, hand mining allows for minimal disturbance of the bitumen and the surrounding rock.

During the application process, Table Rock Minerals submitted a scan of 13 total metals from a mine dewatering sample, including arsenic, antimony, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc (Table 3). With the exception of total arsenic and total chromium, none of these metals were detected in the sample. The total arsenic sample was measured at 1.2 µg/L – just over twice the reporting limit of 0.5 µg/L. The recommended water quality criterion for arsenic is 150 µg/L for chronic aquatic life, and the maximum contaminant level (MCL) for drinking water is 10 µg/L. The total chromium sample was measured at 0.8 µg/L – just above the reporting limit of 0.5 µg/L. The recommended water quality criterion for chromium is hardness dependent, but for hardnesses typically found in the area ranges from about 100 µg/L to 1,700 µg/L.

Based on the sampling data and the reasoning above, metals are not considered a pollutant of concern at the Facility and metals effluent limitations and monitoring requirements will not be included in the Permit.

6.3.8 Ammonia

Ammonia is typically associated with the breakdown of sanitary wastewater, but it may also be naturally present considering the make-up of gilsonite (Table 1). Ammonia can be toxic to aquatic life and its toxicity is pH and temperature dependent. At high pH values, ammonia is much more likely to be present in its toxic (un-ionized) form, while higher temperatures are generally more stressful for many types of aquatic life. Ammonia is a pollutant of concern based on the two ammonia samples provided by the Facility, which were measured at 0.94 mg/L and 1.76 mg/L. While these are relatively low values of ammonia, and considering ammonia breaks down quickly in the environment and is thus unlikely to have downstream effects, in anticipation of adoption of future water quality standards, the EPA is going to require monitoring of ammonia to better characterize the effluent – and gilsonite dewatering water in general. See section 7.1.7 for further information.

6.3.9 BOD_5/Total Organic Carbon (TOC)

BOD_5 is a measure of the amount of dissolved oxygen needed by aerobic bacteria in a body of water to break down the organic material present. Decreasing the amount of oxygen in a receiving stream can have deleterious impacts on aquatic life. Since gilsonite is over 99% organic matter and 84% carbon, the dewatering water may contain high concentrations of total organic carbon. High BOD_5 values can be caused by high TOC or high ammonia, among other things. Five-day biochemical oxygen demand (BOD_5) is a pollutant of concern based on the two samples provided by the Facility, which were measured at 25 and 75 mg/L. The EPA has published recommended water quality criteria for dissolved oxygen, but not for BOD_5 or TOC. For this reason, the Permit will not contain effluent limitations for BOD_5 or TOC, but monitoring for both pollutants will be required in the Permit to better characterize the effluent – and gilsonite dewatering water in general (ammonia is already a required monitoring parameter – see section 6.3.8). If there is a strong relationship between any of these parameters, it would suggest that one cause of the high BOD_5 is due to the pollutant in question. See section 7.1.8 for further information.

6.3.10 Cyanide

Cyanide is a toxic chemical compound that can be present in nature. Cyanide can be found as either an inorganic salt such as sodium cyanide, or in organic form. It contains a cyano group functional compound (i.e., carbon-nitrogen triple bond). Since gilsonite is largely composed of carbon and nitrogen (see Table 1), it could be possible that it is found with gilsonite veins. Cyanide is generally not persistent in nature and does not bioaccumulate. Cyanide is a pollutant of concern based on the Facility's sampling data provided in the application. The single sample that was provided by TRM (Table 2) had a value of 20 µg/L. The Ute Tribe has not adopted any water quality standards related to cyanide, but the EPA's *recommended* water quality criteria for free cyanide is 5.2 µg/L (chronic) and 22 µg/L (acute aquatic life), and for total cyanide is 4 µg/L (human health).

The single sample provided does not constitute a robust dataset, and even a qualitative reasonable potential analysis would consider additional factors such as effluent variability and potential future point source controls. In anticipation of adoption of future water quality standards it is reasonable to collect further monitoring data to better characterize the effluent – and gilsonite dewatering water in general. The EPA will focus on total cyanide due to its more conservative nature. See section 7.1.9 for further information.

6.3.11 Per- and Polyfluoroalkyl Substances (PFAS)

The EPA's PFAS Strategic Roadmap directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources."

Based on the known operations at the Facility, PFAS is not a pollutant of concern, and effluent limitations and monitoring requirements will not be included in the Permit. Gilsonite mines are not a known sources of PFAS (which is a synthetic material), and the chemicals used at the Facility do not indicate a concern for PFAS. According to the Permittee , the Facility does not and has never used or stored any aqueous film forming foam (AFFF) at the site as a fire suppressant. AFFF is a known major source of PFAS introduction into the environment. The EPA encourages facilities to reduce, eliminate, and/or consider alternatives to the storage and use of AFFFs that may contain PFAS. The EPA will revisit the use of AFFF in future permit issuances, and if the Facility does begin to use or store it – or any other known source of PFAS – future permit renewals may include monitoring and/or effluent limits for PFAS.

6.3.12 Whole Effluent Toxicity (WET)

Many toxic pollutants have cumulative effects on aquatic organisms that cannot be detected by individual chemical testing. However, laboratory tests can measure toxicity directly by exposing living organisms to the wastewater and measuring their responses. Because these tests measure the aggregate toxicity of the whole effluent, this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Water quality data from this and other nearby mining dewatering operations indicates that the source water is chemically consistent and does not indicate that toxic chemicals are present. The Facility provided a source water sample which analyzed for over 120 volatile and semi-volatile organic compounds, and all came back as non-detect (Table 3). Furthermore, with the exception of possible pH adjustments using a strong acid, there are no chemicals that will be used during the treatment process. For these reasons, the EPA has determined the chemical-specific effluent limitations are sufficient to attain and maintain any applicable downstream water quality criteria and prevent toxicity in the receiving water. Therefore, WET effluent limitations and monitoring will not be required. The Permit contains a re-opener provision to allow the EPA to re-open the Permit if whole effluent toxicity is detected in the discharge.

6.3.13 No Discharge of Sanitary Wastewater

The Facility does not have any water or wastewater infrastructure, with the exception of vault toilets at the mine sites. These vault toilets get pumped out by a truck when they are full and do not discharge. The Permit does not authorize the Facility to discharge sanitary wastewater.

6.3.14 No Discharge of Process Wastewater

The Facility does not have any processing capabilities – they truck all of the mined gilsonite ore off-site. This situation is not expected to change. If a gilsonite facility wishes to discharge process wastewater, ELGs in 40 CFR § 436.62 (see section 6.1.1) require the construction of an impoundment to store process wastewater, and the storage capacity in that impoundment must contain runoff associated with a 10-year, 24-hour precipitation event. Since the Facility does not have any processing capabilities or an impoundment capable of meeting the federal regulations, the EPA does not expect the Permittee to generate any process wastewater. Therefore, the EPA will prohibit the discharge of process wastewater at all outfalls in the Permit. If the Permittee plans to begin processing gilsonite ore at the site and generating process wastewater, the Permittee must submit a request for a permit modification.

6.4 Final Effluent Limitations

Applicable TBELs and WQBELs were compared, and the most stringent of the two was selected for the following effluent limits (Table 6).

Table 6. Final Effluent Limitations for Outfalls 001 and 002

Effluent Characteristic	**30-Day Average Effluent Limitations a/**	**7-Day Average Effluent Limitations a/**	**Daily Maximum Effluent Limitations a/**	**Limit Basis b/**
Flow, mgd	report only	N/A	report only	N/A
Oil and Grease (O&G), mg/L	N/A	N/A	10	WQBEL/TBEL
Total Suspended Solids (TSS), mg/L	24	N/A	37	BPJ/TBEL
Total Dissolved Solids (TDS), mg/L	report only	N/A	N/A	N/A
Temperature, °C	report only	N/A	N/A	N/A
Cations, mg/L c/	report only	N/A	N/A	N/A
Anions, mg/L d/	report only	N/A	N/A	N/A
Sodium Adsorption Ratio (SAR)	report only	N/A	N/A	N/A
Hardness (as $CaCO_3$), mg/L	report only	N/A	N/A	N/A
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L	report only	N/A	N/A	N/A
Total Organic Carbon (TOC), mg/L	report only	N/A	N/A	N/A
Total Cyanide, mg/L	report only	N/A	N/A	N/A
Total Ammonia Nitrogen (as N), mg/L	report only	N/A	N/A	N/A
pH, standard units	Must remain in the range of 6.5 to 9.0 *at all times*			WQBEL
Salt Load, tons/year	The salt load from the sum of all outfalls shall not be greater than 366 tons/year			CRBSCA
Sanitary wastewater	There shall be **no** discharge of sanitary wastewater.			TBEL
Process wastewater	There shall be **no** discharge of process wastewater.			TBEL
Oil and Grease (O&G), narrative	The discharge shall not cause a visible oil film or sheen on the surface of the water or adjoining shorelines, or cause an oil sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines.			WQBEL/TBEL

a/ See section 1 of the Permit for definition of terms.

b/ BPJ = Limitation based on Best Professional Judgment; TBEL = Limitation based on technology based effluent limit; WQBEL = Limitation based on water quality-based effluent limit; CRBSCA = Limitation based on Colorado River Basin Salinity Control Act requirements.
c/ Cations include calcium, iron, magnesium, potassium, and sodium.
d/ Anions include bicarbonate, carbonate, chloride, fluoride, and sulfate.

6.5 Antidegradation

The Ute Indian Tribe does not have EPA-approved water quality standards, and therefore antidegradation requirements do not apply.

6.6 Anti-Backsliding

Federal regulations at 40 CFR § 122.44(l)(1) require that when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit were based have materially and substantially changed since the time the Permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR § 122.62. Anti-backsliding regulations do not apply to newly issued permits.

7 MONITORING REQUIREMENTS

7.1 Self-Monitoring Discussion

This section lays out the basis for assigning monitoring frequencies and types to the various pollutants in the Permit. The monitoring frequency should be sufficient to characterize the effluent quality and to detect events of noncompliance, considering the need for data and, as appropriate, the potential cost to the Permittee.

In general, the EPA has determined that a monthly monitoring frequency will apply to most parameters with effluent limitations in the Permit, while parameters without effluent limits (i.e., "monitoring only" to better characterize the effluent) will be assigned a less frequent monitoring frequency such as semi-annually. This is generally in line with other nearby gilsonite mines and other mining permits issued throughout Region 8. Some of the factors considered in this decision include the predicted frequency and volume of discharge, nature of the effluent (non-process groundwater typically displays stable chemistry), location of the discharge (dry sand washes far from population centers), and treatment processes (none at this time; possibly minor processes in the future). If these or other factors change, the EPA may change the frequency of monitoring for some or all parameters at a future reissuance.

7.1.1 Flow monitoring

The EPA requires that facilities measure the flow of the effluent volume in such a manner that the Facility can affirmatively demonstrate that the measurement is representative of the actual flow (see footnote 'c' in Table 6). During inspections, the EPA may request to see the flow records and verify that the measurement method is accurate. Facilities may use a variety of methods (e.g., continuous flow meter, Parshall flume or weir, pump hour logs, batch discharge volume measurements, etc.) as long as the method satisfies the requirements mentioned above.

The Permittee plans to operate on a 4-day work week, with the pumps/generators running only when staff are there working. Therefore, the first day of the work week, they will need to pump out three days' worth of accumulated water, and the overall head (and thus discharge rate) may be higher. Based on this, the EPA will require the Permittee to take a flow measurement during the first day of the work week, and sometime later near the end of the work week (approximately 3 days apart), for a total of two flow measurements per week. Thus, a frequency of twice weekly flow monitoring using a grab sample measurement will be used in the Permit. The sample type will be a grab sample, which includes instantaneous measurements as a type of grab sample (see section 1 of the Permit). Weekly or bi-weekly flow measurements are appropriate for non-continuous dischargers such as the Facility.

7.1.2 Total Suspended Solids (TSS)

Based on the factors mentioned above (see section 7.1), a monthly sampling frequency and grab sample type will be implemented in the Permit.

7.1.3 Temperature

Based on the factors mentioned above (see section 7.1) and in the discussion on temperature as a pollutant of concern (see section 6.3.2), the EPA will require a monthly monitoring frequency and grab sample type in the Permit for temperature. These monitoring requirements will be re-visited during the next permit issuance. Note that temperature samples must be analyzed within 15 minutes of collection. For this reason, most facilities use an *in situ* meter, such as a thermometer, to measure it directly in the field.

7.1.4 pH

Based on the factors mentioned above (see section 7.1), a monthly sampling frequency and grab sample type will be implemented in the Permit. Note that pH samples must be analyzed within 15 minutes of collection. For this reason, most facilities use an *in situ* meter, such as a calibrated pH meter, to measure it directly in the field.

7.1.5 Total Dissolved Solids (TDS)/Salt Load

Based on the factors mentioned above (see section 7.1), a monthly sampling frequency and grab sample type will be implemented in the Permit.

The Facility will also be required to calculate a rolling annual average salinity mass loading ("salt load") each quarter using TDS and flow monitoring data. The reported value for this parameter is the total mass of salt discharged by this facility per year (tons/year) based on a rolling annual average (i.e., the last 12 months of data). The calculation for this parameter is explained in more detail as footnote 'j' to Table 6, as well as an example calculation in section 7.3.

7.1.6 Oil and Grease

The oil and grease monitoring will consist of a visual inspection, followed by an immediate grab sample if any oil and grease is observed. A visual inspection is part of basic operation and maintenance of a facility such as this (see section 7.2 of the Permit, which discusses facility inspections). Based on the factors mentioned above (see section 7.1), a grab sample type will be implemented in the Permit, but the visual oil and grease observation will be required weekly, to tie into the flow monitoring and weekly inspection requirements. The more frequent monitoring requirement is also justified because oil and grease exceedances can be caused by mechanical or equipment malfunction in addition to variability in the effluent.

7.1.7 Ammonia

Based on the factors mentioned above (see section 7.1), a semi-annual sampling frequency and grab sample type will be implemented in the Permit.

7.1.8 BOD_5/Total Organic Carbon

Based on the factors mentioned above (see section 7.1), a semi-annual sampling frequency and grab sample type will be implemented in the Permit.

7.1.9 Total Cyanide

Based on the factors mentioned above (see section 7.1), a semi-annual sampling frequency and grab sample type will be implemented in the Permit.

7.1.10 Cations and Anions

During government to government consultations, the Ute Indian Tribe expressed concerns at the unknown nature of the Facility’s discharge and concerns for animal and plant life downstream of the Facility, and requested that cations and anions be included as a monitoring parameter in the Permit. The EPA agrees that identification of basic cations and anions can help characterize effluent and be used to evaluate potential impacts to downstream uses. Based on the low variability in groundwater, the EPA has determined that a relatively infrequent monitoring requirement for cations and anions will be sufficient to include for each outfall in the Permit. The analysis will focus on typical cations and anions found in groundwater. Cation monitoring will include calcium, iron, magnesium, potassium, and sodium. Anion monitoring will include bicarbonate, carbonate, chloride, fluoride, and sulfate. These monitoring results are being used solely to characterize the effluent – the receiving waters have no water quality standards that would be impacted by these cations and anions. Since the source water is groundwater, and there are minimal processes occuring during discharge, it is likely that the discharge will display relatively stable water chemistry. Based on these factors and those mentioned above (see section 7.1), a semi-annual sampling frequency and grab sample type will be implemented in the Permit.

7.1.11 Sodium Adsorption Ratio (SAR)

During government to government consultations, the Ute Indian Tribe expressed concerns at the unknown nature of the Facility's discharge and concerns for animal and plant life downstream of the Facility, and requested that SAR be included as a monitoring parameter in the Permit. SAR is a measure of the amount of sodium cations relative to calcium and magnesium cations, and it is typically measured in either water or soil. High SAR values in soil can lead to dispersion and degradation of soil structure (i.e. "soil sodicity"). This can occur when soils are irrigated with water that has high SAR. While according to the Ute Indian Tribe, no irrigated agriculture use occurs for the receiving water, the constituents that make up the SAR calculation are already being monitored (see section 7.1.10); thus, the EPA will include a semi-annual SAR reporting requirement for each outfall. Typically, labs will report this parameter for free if requested when doing a cation analysis. These monitoring results are being used solely to characterize the effluent – since the receiving waters have no water quality standards that would be impacted by SAR and there are no associated EPA recommended water quality criteria for SAR. Based on the monitoring frequency for cations and anions, a semi-annual sampling frequency and grab sample type will be implemented in the Permit.

7.1.12 Total Hardness

During government to government consultations, the Ute Indian Tribe expressed concerns at the unknown nature of the Facility's discharge and concerns for animal and plant life downstream of the Facility, and requested that total hardness be included as a monitoring parameter in the Permit. The simplest definition of water hardness is the amount of divalent cations in the water. While all divalent cations may contribute to a water hardness measurement, generally the most common divalent cations in groundwater are calcium and magnesium – other divalent cations typically contribute little to no appreciable additions to the water hardness measurement. In fact, most labs simply report the hardness as a summation of calcium and magnesium cations, expressed in units of equivalence to calcium carbonate. Hardness affects drinking water aesthetics and scaling and also factors into metals toxicity (metals are more toxic when water hardness is lower). While the receiving waters have no drinking water uses, and metals are not pollutants of concern in this permit, the constituents that make up the hardness calculation are already being monitored as cations (see section 7.1.10); thus, the EPA will include a semi-annual hardness monitoring requirement for each outfall. Typically, labs will report this parameter for free if requested when doing a cation analysis. These monitoring results are being used solely to characterize the effluent – the receiving waters have no water quality standards that would be impacted by hardness, and there are no associated water quality criteria that would be impacted by hardness given the pollutants of concern. Based on the monitoring frequency for cations and anions, a semi-annual sampling frequency and grab sample type will be implemented in the Permit.

7.2 Self-Monitoring Requirements

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, as required in 40 CFR § 122.41(j), unless another method is required under 40 CFR subchapters N or O.

Table 7. Monitoring requirements for Outfalls 001 and 002

Effluent Characteristic	**Monitoring Frequency**	**Sample Type a/**	**Data Value Reported on DMR b/**
Flow, mgd c/	Twice Weekly	Grab	Daily Maximum 30-Day Average
Oil and Grease (O&G), visual d/	Weekly	Visual	Narrative/Visual
O&G, mg/L	Immediately if visual sheen detected	Grab	Daily Maximum
pH, standard units e/	Monthly	Grab	Minimum Maximum
TSS, mg/L f/	Monthly	Grab	Daily Maximum 30-Day Average
TDS, mg/L f/	Monthly	Grab	30-Day Average
Temperature, °C f/	Monthly	Grab	30-Day Average
Salt Load, tons/year g/	Quarterly	Calculation	Rolling Annual Average
Calcium, mg/L	Once Every Six Months h/	Grab	Average Value
Iron, mg/L	Once Every Six Months h/	Grab	Average Value
Magnesium, mg/L	Once Every Six Months h/	Grab	Average Value
Potassium, mg/L	Once Every Six Months h/	Grab	Average Value
Sodium, mg/L	Once Every Six Months h/	Grab	Average Value
Bicarbonate, mg/L	Once Every Six Months h/	Grab	Average Value
Carbonate, mg/L	Once Every Six Months h/	Grab	Average Value
Chloride, mg/L	Once Every Six Months h/	Grab	Average Value
Fluoride, mg/L	Once Every Six Months h/	Grab	Average Value
Sulfate, mg/L	Once Every Six Months h/	Grab	Average Value
Sodium Adsorption Ratio (SAR), i/	Once Every Six Months h/	Calculation	Average Value
Hardness (as $CaCO_3$), mg/L j/	Once Every Six Months h/	Calculation	Average Value
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L	Once Every Six Months h/	Grab	Average Value
Total Organic Carbon (TOC), mg/L	Once Every Six Months h/	Grab	Average Value
Total Cyanide, mg/L	Once Every Six Months h/	Grab	Average Value
Total Ammonia Nitrogen (as N), mg/L	Once Every Six Months h/	Grab	Average Value

a/ See section 1 of the Permit for definition of terms.

b/ Refer to the Permit for requirements regarding how to report data on the DMR.

c/ The Permittee must take and record a flow measurement on the first operating day of the week, and one more approximately three days later. Flow measurements of effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate in million gallons per day (mgd) during the reporting period and the maximum flow rate observed during the reporting period, in mgd, shall be reported.

d/ If a visible sheen or floating oil is detected or observed in the discharge, a grab sample shall be taken immediately, analyzed and recorded in accordance with the requirements of 40 CFR Part 136.

e/ The maximum and minimum pH shall be reported for each month in the quarterly reporting period.

f/ The average monthly value and daily maximum value (if required) shall be reported for each month in the quarterly reporting period.

g/ The reported value for this parameter is the total mass of salt discharged by this facility (i.e., all outfalls) per year. This value is reported once per quarter and is based on a rolling annual average (i.e., the last 12 months of data). The calculation for this parameter is the sum of the products of the average monthly TDS (mg/L) and average monthly discharge rate (ADR) in mgd *for each outfall and each month* converted to tons/year using the equations below. If more than one TDS sample is collected from an outfall during a month, the TDS results shall be averaged for that month. See section 7.3 for an example calculation.

(1) Rolling Annual TDS Load (tons/year) = sum of the past 12 months of Monthly TDS Load

(2) Monthly TDS Load (tons/month) = 0.127 x [$TDS_{outfall001}$ x $ADR_{outfall001}$ + $TDS_{outfall002}$ x $ADR_{outfall002}$]

h/ The semi-annual periods are defined as January through June, and July through December. One sample shall be collected in each period, with at least four months in between monitoring events (e.g., if the January through June sample was collected in June, then the July through December sample couldn't be collected until October).

i/ SAR can be calculated from the calcium, magnesium, and sodium measurements. Typically, labs will report this parameter along with a cation analysis if requested.

j/ Water hardness can be calculated from the calcium and magnesium measurements. Typically, labs will report this parameter along with a cation analysis if requested.

7.3 Example Calculation – Monthly TDS Load

The Facility reports the following information for May:

- At Outfall 001, a TDS measurement of 2,000 mg/L and an average daily discharge rate of 0.02 mgd.
- At Outfall 002, a TDS measurement of 1,500 mg/L and an average daily discharge rate of 0.01 mgd.

According to Equation (2), the monthly TDS load for May would then be: 0.127 * (2,000 mg/L * 0.02 mgd + 1,500 mg/L * 0.01 mgd) = **7.0 tons/month**, and the rolling annual TDS load (equation 1) would be the sum of the May value plus the previous 11 months' values.

The 0.127 value is a unit conversion factor from mg/L * mgd to tons/month (1 milligram/Liter * 1 million gallons/day * 1,000,000 gallons/million gallons * 30.4 days/month * 3.785 liters/gallon * 0.001 grams/milligram * 0.0022 pounds/gram * 0.0005 tons/pound = **0.127**)

8 SPECIAL CONDITIONS

8.1 Operating BMPs

The Permittee may use chemical and engineering controls to achieve TSS, pH, and other effluent limitations. The EPA has developed several BMPs related to TSS and pH management at gilsonite mines, and these BMPs have been added to the Permit in section 5.1, as allowed in 40 CFR § 122.44(k)(4).

8.2 Stormwater Requirements

Based on the type of industrial activity occurring at the Facility and the Standard Industrial Classification (SIC) code for the Facility (1499 – Miscellaneous Nonmetallic Minerals, Except Fuels), the Permittee will be required to obtain coverage under the EPA's 2021 Multi-Sector General Permit (MSGP) for stormwater discharges associated with industrial activity. The sector-specific requirements for the "Non-Metallic Mineral Mining" sector are located in Section J of the MSGP. The Facility will have 90 days to submit an NOI or obtain conditional exclusion. See section 6 of the Permit for more information regarding stormwater requirements.

The EPA Region 8 has integrated stormwater discharge requirements into individual permits in the past; however, this practice has been changed to improve consistency between permittees of similar industrial types, and to ensure the most up-to-date stormwater requirements are in place for each facility.

9 REPORTING REQUIREMENTS

Reporting requirements are based on requirements in 40 CFR §§ 122.44, 122.48, and Parts 3 and 127. A discharge monitoring report (DMR) frequency of quarterly was chosen, because other nearby gilsonite mines discharge a semi-continuous stream of chemically consistent water, and quarterly reporting has worked well for these facilities.

10 COMPLIANCE RESPONSIBILITIES AND GENERAL REQUIREMENTS

Regular facility inspections and working operation and maintenance plans are both important aspects of general compliance responsibilities. These requirements allow the Permittee to observe and identify any operational deficiencies, and provide a framework to address those deficiencies proactively.

10.1 Inspection Requirements

On at least a weekly basis, unless otherwise modified in writing by the EPA, the Permittee shall inspect its facility. The Permittee shall document the inspection, as required by the Permit. Inspections are required to determine whether the Facility is discharging, ensure that all treatment processes and water conveyance equipment are functioning correctly, and ensure the discharge and receiving stream are meeting all permit requirements. Inspection requirements have been established in section 7.2 of the Permit to help ensure compliance with the provisions of 40 CFR § 122.41(e).

10.2 Operation and Maintenance

40 CFR § 122.41(e) requires permittees to properly operate and maintain at all times, 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. In addition to an operation and maintenance plan, regular facility inspections are an important aspect of proper operation and maintenance. Operation and maintenance requirements have been established in section 7.3 of the Permit to help ensure compliance with the provisions of 40 CFR § 122.41(e).

11 ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act of 1973 requires all Federal Agencies to ensure, in consultation with the U.S. Fish and Wildlife Service (FWS), that any Federal action carried out by the Agency is not likely to jeopardize the continued existence of any endangered species or threatened species (together, "listed" species), or result in the adverse modification or destruction of habitat of such species that is designated by the FWS as critical ("critical habitat"). See 16 U.S.C. § 1536(a)(2), 50 CFR Part 402. When a Federal agency's action "may affect" a protected species, that agency is required to consult with the FWS (formal or informal) (50 CFR § 402.14(a)).

The U.S. Fish and Wildlife Information for Planning and Conservation (IPaC) website (https://ecos.fws.gov/ipac/) was accessed on June 28, 2024 to determine federally-listed Endangered, Threatened, Proposed and Candidate Species for the area near the Facility. The IPaC Trust Resource Report findings are provided below (Table 8). The action area utilized was identified in the IPaC search and covers the immediate outfalls of the Facility downstream approximately 15 miles to the White River.

Table 8. IPaC Federally listed Threatened and Endangered Species

Species	Scientific Name	Species Status	Designated Critical Habitat
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Action area is outside the CH
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	Action area is outside the CH
Bonytail	*Gila elegans*	Endangered	Action area is outside the CH

Species	Scientific Name	Species Status	Designated Critical Habitat
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered	Action area is outside the CH
Humpback Chub	*Gila cypha*	Threatened	Action area is outside the CH
Razorback Sucker	*Xyrauchen texanus*	Endangered	Action area is outside the CH
Monarch Butterfly	*Danaus plexippus*	Candidate	N/A
Ute ladies'-tresses	*Spiranthes diluvialis*	Threatened	No CH designated
Uintah Basin Hookless Cactus	*Sclerocactus wetlandicus*	Threatened	No CH designated

11.1 Biological Evaluation

Biological evaluations of the potential effects of the proposed action on the nine listed species and their critical habitat are provided below. These biological evaluations are based on information obtained from the IPaC site and knowledge regarding the proposed action.

The proposed action is issuance of a new NPDES permit, which authorizes discharge to two unnamed tributaries of Cottonwood Wash, which is a tributary of the White River. No significant ground disturbances or changes to habitat are planned or expected due to the issuance of this Permit. Since this is primarily a groundwater dewatering permit, there is no consumptive use of groundwater or surface water; thus, neither water depletions nor incidental take will result from this Permit. Permit effluent limitations are generally protective of receiving water quality.

Mexican spotted owl, *Strix occidentalis lucida* – This species is currently listed as threatened. The action area is outside the critical habitat for this species. Mexican spotted owls typically inhabit mature, old growth mixed forests and rocky canyonlands with minimal human disturbance. The proposed facility is generally located outside of these types of areas. While it is possible that this species may inhabit the area, the Permit does not authorize changes to habitat that supports this species, nor are discharges from the Facility anticipated to affect this species. Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Yellow-billed cuckoo, *Coccyzus americanus* – This species is currently listed as threatened. The action area is outside the critical habitat for this species. Yellow-billed cuckoos typically inhabit riparian areas, wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. The proposed facility is generally located outside of these types of areas. While it is possible that this species may inhabit the area, the Permit does not authorize changes to habitat that supports this species, nor are discharges from the Facility anticipated to affect this species. Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Bonytail, *Gila elegans* – This species is currently listed as endangered. The action area is outside the critical habitat for this species. Bonytail are found almost solely in the Green River watershed, and they prefer backwaters with rocky or muddy bottoms and flowing pools, although they have been reported in swiftly moving water. They are mostly restricted to rocky canyons today.

The Facility discharges to dry channels that rarely contain water. Both outfalls are approximately fifteen miles from the White River and may not reach the White River as surface flow.

While it is possible that the bonytail may inhabit the White River downstream of this discharge, the Permit does not authorize direct discharges to the White River nor alterations to habitat that supports this species. There is no consumptive use of water so no water depletions occur due to this Permit. The only discharges authorized by the Permit are of naturally-occurring groundwater (i.e., no process wastewater), and pollutant concentrations allowed in the effluent – such as suspended solids, pH, and total dissolved solids – are generally protective of aquatic life (see section 6.3). Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Colorado pikeminnow, *Ptychocheilus lucius* – This species is currently listed as endangered. The action area is outside the critical habitat for this species. Colorado pikeminnow spend their whole lives in medium to large rivers and can be found in the Green River watershed.

The Facility discharges to dry channels that rarely contain water. Both outfalls are approximately fifteen miles from the White River and may not reach the White River as surface flow.

While it is possible that the Colorado pikeminnow may inhabit the White River downstream of this discharge, the Permit does not authorize direct discharges to the White River nor alterations to habitat that supports this species. There is no consumptive use of water so no water depletions occur due to this Permit. The only discharges authorized by the Permit are of naturally-occurring groundwater (i.e., no process wastewater), and pollutant concentrations allowed in the effluent – such as suspended solids, pH, and total dissolved solids – are generally protective of aquatic life (see section 6.3). Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Humpback chub, *Gila cypha* – This species is currently listed as endangered. The action area is outside the critical habitat for this species. The humpback chub is found in the White River. The humpback chub inhabits a variety of habitats ranging from pools to turbulent areas, substrates of silt, sand boulder, and bedrock, and depths ranging from 1 meter to as deep as 15 meters.

The Facility discharges to dry channels that rarely contain water. Both outfalls are approximately fifteen miles from the White River and may not reach the White River as surface flow.

While it is possible that the humpback chub may inhabit the White River downstream of this discharge, the Permit does not authorize direct discharges to the White River nor alterations to habitat that supports this species. There is no consumptive use of water so no water depletions occur due to this Permit. The only discharges authorized by the Permit are of naturally-occurring groundwater (i.e., no process wastewater), and pollutant concentrations allowed in the effluent – such as suspended solids, pH, and total dissolved solids – are generally protective of aquatic life (see section 6.3). Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Razorback sucker, *Xyrauchen texanus* – This species is currently listed as endangered. The action area is outside the critical habitat for this species. The razorback sucker can be found in the Green River watershed. Razorback suckers prefer to live over sand, mud, or gravel bottoms. They inhabit a diversity of habitats from mainstream channels to the backwaters of medium and large streams or rivers.

The Facility discharges to dry channels that rarely contain water. Both outfalls are approximately fifteen miles from the White River and may not reach the White River as surface flow.

While it is possible that the razorback sucker may inhabit the White River downstream of this discharge, the Permit does not authorize direct discharges to the White River nor alterations to habitat that supports this species. There is no consumptive use of water so no water depletions occur due to this Permit. The only discharges authorized by the Permit are of naturally-occurring groundwater (i.e., no process wastewater), and pollutant concentrations allowed in the effluent – such as suspended solids, pH, and total dissolved solids – are generally protective of aquatic life (see section 6.3). Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Monarch butterfly, *Danaus plexippus* – This species is currently listed as a candidate species. There are generally no section 7 requirements for candidate species. However, the EPA believes issuance of the Permit will have minimal impact on this species for the same reasons provided for other terrestrial species above.

Ute ladies'-tresses orchid, *Spiranthes diluvialis* – This species is currently listed as threatened. No critical habitat has been designated for this species. The Ute ladies'-tresses orchid typically occurs in riparian, wetland and seepy areas associated with old landscape features within historical floodplains of major rivers. They are also found in wetland and seepy areas near freshwater lakes or springs. While it is possible that this species may be found in the area, the Permit does not authorize changes to habitat that supports this species, nor are discharges from dewatering operations anticipated to affect it. Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Uintah Basin Hookless Cactus, *Sclerocactus wetlandicus* – This species is currently listed as threatened. No critical habitat has been designated for this species. The Uintah Basin hookless cactus is a small, barrel-shaped cactus. The Uinta Basin hookless cactus is generally found on coarse soils derived from cobble and gravel river and stream terrace deposits, or rocky surfaces on mesa slopes at 4,400 to 6,200 feet in elevation. While it is possible that this species may be found in the area, the Permit does not authorize changes to habitat that supports this species, nor are discharges from dewatering operations anticipated to affect it. Based on this information, the EPA has determined that the issuance of the Permit is **not likely to adversely affect** this species.

Based on the IPaC information, the EPA determined the permitting action "may affect, but is not likely to adversely affect" the species listed above.

Before going to public notice, a copy of the draft Permit and this Statement of Basis were sent to the FWS requesting concurrence with the EPA's finding that issuance of this NPDES Permit "may affect, but is not likely to adversely affect" the species listed as threatened or endangered in the action area by the FWS under the Endangered Species Act nor their critical habitat.

12 NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. The first step in this analysis is to consider whether the undertaking has the potential to affect historic properties, if any are present. See 36 CFR § 800.3(a)(1).

The National Register of Historic Places is the official list of the Nation's historic places worthy of preservation. Authorized by the NHPA, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources. The National Register of Historic Places website (ttps://www.nps.gov/subjects/nationalregister/database-research.htm) was accessed on January 12, 2024. It contained 18 properties in Uintah County, Utah – 12 of them were in or near Vernal, three of them were in or near the Dinosaur National Monument, and one each was in or near Jensen, Whiterocks, and the Ashley National Forest. None of these general locations (the exact location of each site within the area is not always known) is within 30 miles of the project action area.

The project action area is considered to be the immediate site of the gilsonite mine. The gilsonite mine footprint is typically small, since it is an underground "shaft" mine. Each mining "pad" encompasses approximately one to two acres (for a total of approximately 3 acres between the two) with a headframe, several ore silos, a vault toilet, a storage shed, and the hoist house, along with a large circular driveway for trucks to pull through.

In February 2024, the EPA contacted the Ute Tribe's Cultural Resources Office to inquire about potential eligible properties. The Cultural Resources Office did not identify any properties eligible for listing. Based on the information above, the EPA determined that there are no historic properties within the area of potential effects.

During public notice, a copy of the draft permit and statement of basis will be provided to the Ute Tribe's Cultural Resources Office so they can provide any additional information they may have.

13 ENVIRONMENTAL JUSTICE

In November 2023, the EPA entered into government to government consultation with the Tribal government to develop this Permit. The EPA recognizes the federal government's trust responsibility, and throughout this process, the EPA followed the EPA Policy on Consultation with Indian Tribes[6]. The EPA initiated multiple meetings with the Tribe and their representatives and has listened to – and implemented changes in the Permit based on – the Tribe's concerns. The EPA appreciates the Tribe's partnership in this matter.

14 401 CERTIFICATION CONDITIONS

At the time of the Permit issuance, the EPA was the Clean Water Act (CWA) Section 401 certifying authority for the Permit, because the Tribe had not received authorization to implement Section 303(c) of the CWA. The EPA has determined § 401 conditions are unnecessary, because there are no Tribal water quality requirements.

15 MISCELLANEOUS

The effective date of the Permit and the Permit expiration date will be determined upon issuance of the Permit. The intention is to issue the Permit for a period not to exceed 5 years.

Permit drafted by Erik Makus, U.S. EPA, (406) 457-5017 (June 2024)

[6] US EPA, 2023. EPA Policy on Consultation with Indian Tribes, https://www.epa.gov/system/files/documents/2023-12/epa-policy-on-consultation-with-indian-tribes-2023_0.pdf

ADDENDUM

AGENCY CONSULTATIONS

On [Month Day, Year], the FWS [concurred/disagreed] with the EPA's preliminary conclusion that the Permit issuance is not likely to adversely affect listed species.

On [Month Day, Year], the Tribe's Cultural Resources Office [agreed with/disagreed with/did not comment on] the EPA's preliminary determination that the Permit issuance will not impact any historic properties.

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The Permit and statement of basis, including the CWA Section 401 certification, were public noticed [on the EPA's website] on [Month Day, Year]. The comment(s) received and the response(s) are provided below/No comments were received. Upon addressing all comments received during the public notice comment period related to Section 401 certification requirements, the signing of the Permit shall constitute the EPA's Section 401 certification.

Comment:

The commenter noted that …

Response:

The following language was added to the final Permit./No changes were made to the final Permit: