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

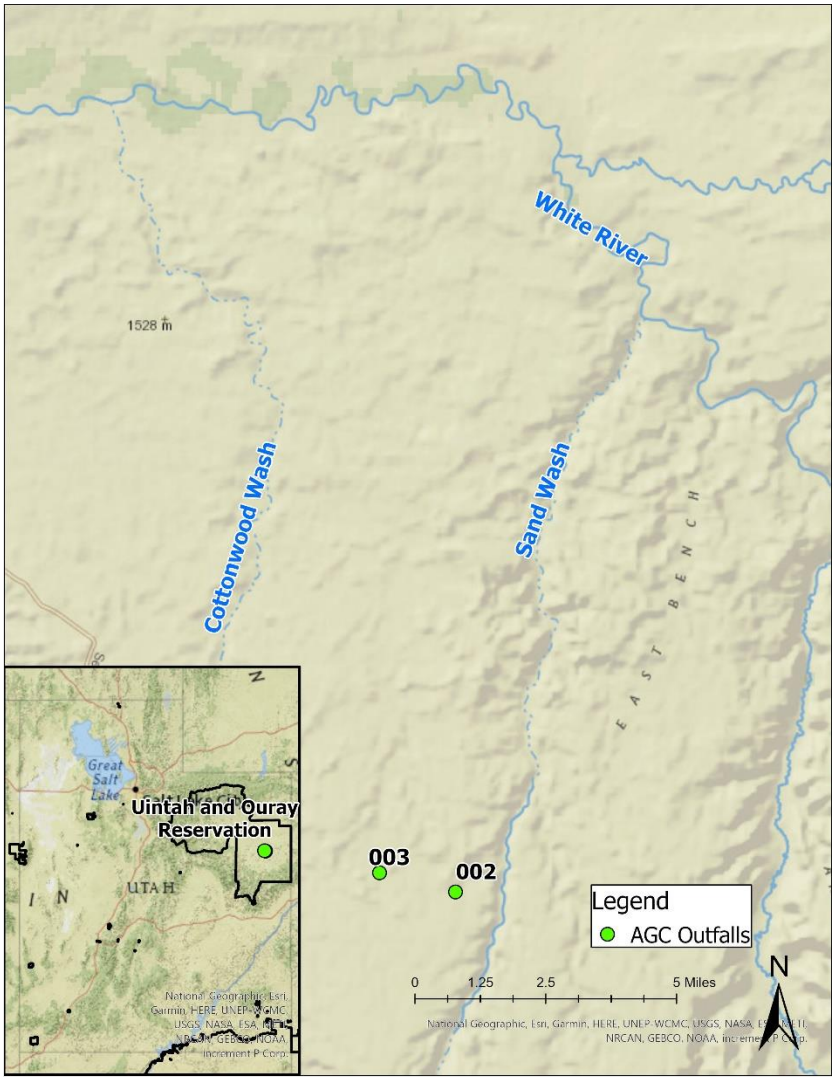
PERMITTEE:	American Gilsonite Company
FACILITY NAME AND ADDRESS:	American Gilsonite Company – Cottonwood 29950 South Bonanza Highway Bonanza, Utah 84008
PERMIT NUMBER:	UT0025259
RESPONSIBLE OFFICIAL:	Nick Lott, Chief Operating Officer (435) 781-4552 nick@americangilsonite.com
FACILITY CONTACT:	Jonathan Lombardo, Engineering and Environmental Supervisor (435) 789-1921 ext. 452 jonathan@americangilsonite.com
PERMIT TYPE:	Mine Dewatering, Minor Industrial, Renewal, Indian Country
FACILITY LOCATION:	Cottonwood Mine Uintah County, Utah Lat. 39.89780° N, Long. 109.51373° W
DISCHARGE LOCATION(S):	Outfalls 002 and 003 (see Table 2)
RECEIVING WATER:	unnamed tributary of Sand Wash, and an unnamed tributary of Cottonwood Wash, both of which are tributaries of the White River

1. INTRODUCTION

This statement of basis (SoB) is for the reissuance of a National Pollutant Discharge Elimination System (NPDES) permit (Permit) to the American Gilsonite Company (AGC), for the AGC Cottonwood Mine (facility). The Permit establishes discharge limitations for any discharge of water from their two (2) permitted outfalls to an unnamed tributary of Sand Wash and an unnamed tributary of Cottonwood Wash. Both Sand Wash and Cottonwood Wash are tributaries of the White River. The SoB explains the nature of the discharges, 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 & Ouray Reservation in eastern Utah (Figure 1), which is home to the Ute Indian Tribe. EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. Part 1151, within Region 8 and supports implementation of federal environmental laws consistent with the federal trust responsibility, the government-to-government relationship, and EPA's 1984 Indian Policy.

Figure 1. Facility Location Map



2. MAJOR CHANGES FROM PREVIOUS PERMIT

- One outfall has been removed from this Permit renewal at the request of the Permittee (Outfall 001).
- One new outfall has been added to this Permit renewal at the request of the Permittee (Outfall 003).
- Several new monitoring requirements have been added to the Permit, including temperature, cations and anions, sodium adsorption ratio, and hardness.
- The stormwater pollution prevention plan (SWPPP) and stormwater management control sections in the previous permit have been combined and updated.
- Several additional best management practices (BMPs) regarding operation and management (O&M) and inspection requirements have been added to the Permit as special conditions.

3. BACKGROUND INFORMATION

AGC is a privately held company headquartered in Vernal, Utah. AGC acquired the gilsonite related assets at the facility from Lexco Inc. on August 12, 2009.

AGC mines gilsonite at the facility. Gilsonite is a black, lustrous, naturally occurring hydrocarbon resin that is similar in appearance to coal or hard asphalt. According to a 2014 paper published in the *Journal of Petroleum & Environmental Biotechnology*[1], gilsonite is chemically composed of carbon, hydrogen, nitrogen, oxygen, and sulfur, with other trace elements (Table 1). It is over 99% organic matter.

It is mined by hand underground using pneumatic chipping hammers and conveyed to the surface through a centrifugal blower. Gilsonite 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

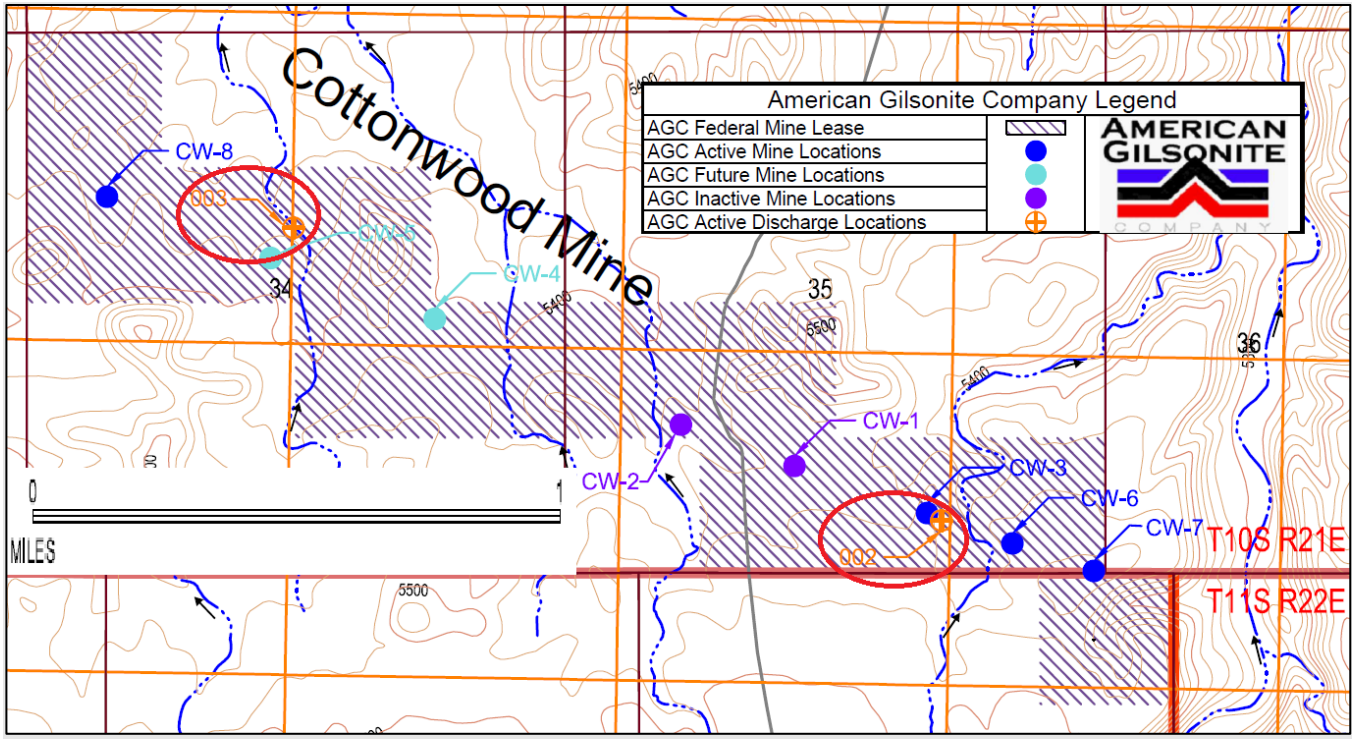
Parameter	**Composition (by weight, %)**
Carbon (C)	84.4
Hydrogen (H)	10.1
Nitrogen (N)	3.3
Oxygen (O)	1.4
Sulfur (S)	0.3
Organic Matter	99.3

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

3.1. Facility Description

The facility is located approximately 38 miles south of Vernal, Utah, in Sections 34 and 35, Township 10S, Range 21E on the Uintah & Ouray Reservation. Outfalls 002 and 003 are approximately 1.25 miles apart along the Cottonwood gilsonite vein (Figure 2).

Figure 2. AGC Cottonwood Outfall and Mine Shaft Locations



The facility is a working mine with two outfalls (Figures 1 and 2). There are no discernible out-buildings to assign a location to at either outfall – they are simply a pipe leading to an unnamed drainage. The coordinates in the title page above refer to the location of Outfall 002.

At the Cottonwood Mine site, the gilsonite vein extends to the surface but the current mining practice is to sink mine shafts down vertically prior to mining. Mine shafts are sunk down to the gilsonite vein on approximately 1,000 foot centers. The vein extends from approximately the surface to an unknown depth. The practical mining limit is approximately 1,400 feet – below that depth, it is not feasible to extract the gilsonite at this time. The vein typically extends down through the Uintah Formation to the top of the Green River Formation. Shafts are connected underground by drifts (horizontal tunnels) in the ore. Once the shafts are connected with the drifts, mining starts in the block of gilsonite. Hand labor is used underground to reduce contamination of the ore by the surrounding rock. Miners using pneumatic (i.e., air driven) chipping hammers to break off the gilsonite ore. Broken ore falls by gravity to the bottom of a slope where it is pulled by vacuum into a vent pipe for transport to the surface. Air lift fans located on the surface pull the ore to the top of the head frame where it is discharged into an ore bin (Figure 3). The air stream used to transport the material is filtered of dust particles in a baghouse before being discharged to the atmosphere. The ore is then transported in covered trucks to an off-site processing where it is prepared for packaging and shipment.

Figure 3. Photo of typical surface set up at a working gilsonite mine shaft

The groundwater table in the area is approximately 350 feet below the surface. When small or moderate amounts of groundwater are encountered, the mining suction equipment can transport it up to the surface along with the "wet" gilsonite. This mixture is then deposited at a drying bed on the surface, where this wet gilsonite is allowed to dry and the water is evaporated. The dried gilsonite is then collected from the drying beds and transported to the processing plant. This process does not result in any discharge. However, when too much water is encountered in the shaft for the mining suction system to handle, the lowest portion of the shaft is used as a sump. A submersible pump is then placed in the bottom of the shaft and water is pumped up to the surface. If the water does not require treatment prior to discharge (see section 3.2), then it is simply discharged from one of the permitted outfall locations.

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 and former outfalls being abandoned as the active mining progresses along the vein. There are currently six shafts at the facility (Figure 2). CW-1 and CW-2 are no longer being used for active mining, while CW-3, CW-6, CW-7, and CW-8 are actively being developed. Shafts CW-4 and CW-5 will be developed at a future date.

When operating, the facility transports all of their gilsonite ore to the Bonanza processing plant for processing. No gilsonite processing or packaging occurs on-site at the Cottonwood Mine.

3.2. Treatment Process

The facility has not provided any treatment of discharges in the past. However, the discharge history is sparse (see section 5.1) and the treatment history may not be indicative of the future. At the Bonanza Mine (a nearby gilsonite mine operated by AGC), both high pH and high total suspended solids (TSS) can occur in the groundwater. The Bonanza Mine has installed treatment for these two parameters and these are discussed here in case the Cottonwood Mine experiences similar issues.

At the nearby Bonanza 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. It is expected that pH and TSS treatment at the Cottonwood Mine (should they be needed) would look very similar to the treatment processes described above.

The Permittee must also have, and implement, a stormwater pollution prevention plan (SWPPP). The emphasis of the SWPPP is to minimize the potential for the discharge of pollutants in stormwater. See section 5.2 of the Permit for more information on the SWPPP.

3.3. Outfall Locations

The previous permit authorized Outfalls 001 and 002. With this renewal, AGC has requested the removal of Outfall 001 and the addition of Outfall 003. The shafts that formerly discharged to Outfall 001 are no longer actively being mined, so there is no longer any need for an outfall at this location. Outfall 003 is further west along the vein near some of the newer shafts. Outfalls 002 and 003 are located approximately 1.25 miles apart (Table 2 and Figures 1 and 2). The outfalls are located in dry washes draining to either Sand Wash or Cottonwood Wash. Both outfalls are approximately 15-20 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.

Table 2. Outfall Locations and Descriptions

Outfall	Latitude (° N)	Longitude (° W)	Associated Vein, Mines	Current Treatment Process	Receiving Water
002	39.89780	109.51373	Cottonwood Vein, Mine CW-3, CW-6, and CW-7	None/Untreated	Unnamed tributary of Sand Wash
003	39.90417	109.53750	Cottonwood Vein, Mine CW-4, CW-5, and CW-8	None/Untreated	Unnamed tributary of Cottonwood Wash

The authorization to discharge under this Permit is limited to these specific outfalls. However, EPA recognizes that the facility operations are constantly moving along gilsonite veins, and that construction of treatment facilities, roads, etc. may dictate the need to slightly modify outfall locations. Therefore, this reissuance allows the Permittee to request, in writing, a change to a dewatering outfall location. EPA may approve or deny the request based on monitoring results and other information available without further public notice or major modification of the Permit, if the following conditions are met:

1. The modified outfall location is within 0.25 miles (1,320 feet) of the existing outfall location;
2. The modified outfall location discharges to the same immediate receiving water;
3. The modified outfall location remains on the same vein and incorporates the same treatment processes;
4. There is no change to nearby affected landowners; and
5. Notification of the change in outfall location is provided to EPA prior to any discharges to the modified outfall location.

3.4. Chemicals Used

The facility does not use any chemicals at this time. At the nearby Bonanza Mine, AGC uses 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 conditions without its use.

4. DESCRIPTION OF RECEIVING WATER

Outfall 002 is located on an unnamed dry wash that discharges to Sand Wash. Sand Wash is a dry wash that flows north into the White River approximately 15 miles downstream of the facility. Outfall 003 is located on an unnamed dry wash that discharges to Cottonwood Wash. Cottonwood Wash is a dry wash that flows north into the White River approximately 20 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 the facility (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). Sand

Wash and Cottonwood Wash are dry much of the year, typically only flowing in response to rainfall or snowmelt events. Both discharge locations have no dilution flow.

5. PERMIT HISTORY

This facility was first issued an NPDES permit by the state of Utah in 1996. EPA became the permitting authority for the 2002 permit issuance. The facility was owned and operated by Lexco Inc. until August of 2009, when the facility was acquired by AGC. AGC's previous permit for the facility became effective on September 1, 2016 and was administratively continued on August 31, 2021.

5.1. Discharge Monitoring Report (DMR) Data

Outfall 001 did not discharge during the previous permit cycle (September 2016 to August 2021). This outfall is being removed from this Permit renewal at the request of the Permittee. Outfall 002 only reported discharge during two quarters of the previous permit cycle (December 2019 and February 2020). Outfall 003 is a new outfall and does not have any discharge data to report.

The facility's limited DMR data for Outfall 002 is summarized in Table 3. During the previous permit cycle (September 2016 to August 2021), the facility reported one violation of the 7-day average TSS limits and the 30-day average TSS limits, and one violation of the pH upper limit of 9.0.

Table 3. Summary of the AGC Cottonwood Mine DMR Data (September 2016 – March 2021) for Outfall 002 from EPA's Integrated Compliance Information System (ICIS) database (data accessed 4/7/21)

Parameter	Permit Limit(s)	December 2019 Reported Value	February 2020 Reported Value	Number of Data Points	Number of Violations
Flow, mgd	-	0.00	0.05	2	-
Total Suspended Solids (TSS), mg/L	25/35 a/	18	52	2	1
Total Dissolved Solids (TDS), mg/L	3,500	1,760	2,620	2	0
TDS Annual Loading, rolling average, tons/year (sum of all outfalls)	366	1 b/	16 b/	2	0
pH, standard units	6.5-9.0 c/	8.92 min 8.92 max	8.90 min 9.70 max	2	1
Oil & Grease, mg/L	10	No detections	No detections	2	0
Oil and Grease, visible observation of sheen	No visible sheen allowed	No visible sheen observed	No visible sheen observed	2	0

a/ There are two permit limits for TSS – a 30-day average of 25 mg/L, and a 7-day average of 35 mg/L. The Permittee reported the same data for both limits.

b/ The values for TDS Annual Load may have been reported incorrectly in units of tons/month. A flow of 0.05 mgd at 2,620 mg/L (i.e., the February 2020 data) calculates out to be about 16.4 tons TDS/month, or approximately 200 tons TDS/year. EPA has left the values as reported in this table.
c/ Limitation is a range, pH shall not to be less than 6.5 nor greater than 9.0 standard units at any time.

5.2. Other Facility History

During the previous permitting cycle, the site was inspected by EPA in June of 2017. The facility was not discharging at the time and had not discharged since AGC acquired it in 2009. Inspection findings include late and missing DMRs, and a need to update the stormwater pollution prevention plan (SWPPP) prior to reinitiating operations at the facility. The SWPPP requirements are further addressed in this SoB.

6. PROPOSED PERMIT LIMITATIONS

6.1. Technology Based Effluent Limitations (TBELs)

6.1.1. Federal TBELs

This facility is categorized as an asphaltic mining facility and falls under Federal Effluent Limitations Guidelines in 40 CFR Part 436, Subpart F – Asphaltic Mineral Subcategory. The provisions of this subpart are applicable to the processing of bituminous limestone, oil-impregnated diatomite, and **oilsonite** not primarily as an energy source. The development document for the federal effluent limit guidelines mentions "bituminous limestone, oil-impregnated diatomite, and **gilsonite**," and in fact used this facility as the basis for effluent limitation development. The development document does not mention "oilsonite," and it is believed that this is a typo in the 1975 Federal Register and 40 CFR 436. Section 436.62 contains the following best practical 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 June 14, 2021, the 10-year, 24-hour rainfall total for this location is approximately 1.44 inches.

6.2. Water Quality Based Effluent Limitations (WQBELs)

The dewatering operation discharges into dry washes which in turn discharge to either Sand Wash or Cottonwood Wash. A general description of the receiving waters can be found in section 4. 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). Therefore, state of Utah water quality standards were not considered in the reissuance of this Permit.

The Ute Indian Tribe does not have EPA-approved water quality standards, nor did they have any tribally-adopted water quality standards or regulations at the time of permit issuance. The Permit contains a re-opener provision if EPA-approved water quality standards are developed at a future date.

In April 2021, the Ute Indian Tribe requested to participate in government to government consultation in the development of this Permit. During this process, the Ute Indian Tribe indicated that they were concerned with potential impacts to animal and plant life in the area, and the unknown nature of the discharge. In August 2021, the Ute Indian Tribe provided EPA with a list of parameters and requested that they be included in the Permit. These will be discussed further in section 6.3.

In addition to the Ute Indian Tribe's concerns, 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. In 1974, in coordination with the Department of the Interior and the U.S. State Department, Congress passed the Colorado River Basin Salinity Control Act. The goal of this Act is to decrease salt loading in the Colorado River. This Act establishes salinity guidelines for point sources discharging into the Colorado River watershed.

Per this Act, industrial users 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. However, there are variances that can be applied to these criteria based on cost and the connectivity to intercepted groundwater.

6.2.2. EPA Recommended Water Quality Criteria for Aquatic Life

EPA Quality Criteria for Water (1986) provides basic guidance on the kind and extent of all 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. It recommends a pH range of 6.5 to 9.0 for freshwater aquatic life. It provides narrative statements on the harmful effects of oil and grease. It also reports dissolved oxygen (DO) values for warmwater aquatic life criteria that range from 3.0 to 6.0 mg/L as suggested minimum values.

6.2.3. Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act authorizes 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 if a TMDL is developed at a future date.

6.3. Justifications and Reasonable Potential Determinations for Final Effluent Limitations and Monitoring Requirements

Effluent limitations in the Permit are derived from the parameter-specific discussions below. In general, EPA has determined that a monthly monitoring frequency will apply to most parameters with effluent limitations in the Permit. This is in line with other nearby gilsonite mines and other mining permits issued in Region 8. Some of the factors considered include the frequency of discharge (currently very low at this facility), nature of the effluent (non-process groundwater), location of the discharge (dry sand washes far from population centers), and treatment processes (none at this time). If these or other factors change, EPA may change the frequency of monitoring for some or all parameters through a permit modification.

6.3.1. Total Suspended Solids (TSS)

The existing TSS limits of 25 mg/L monthly average and 35 mg/L weekly average were included in the Permit when it was issued by the Utah Division of Environmental Quality and are based on Utah secondary treatment standards defined in the Utah Wastewater Disposal Regulations (*UAC R317-1-3.2.B*). These are typically applied to sanitary wastewater treatment facilities and not industrial activities such as ore mining, and it is not clear why these were originally applied to the facility. However, these effluent limitations were retained when EPA became the permitting authority due to "anti-backsliding" regulations, and because implementing some type of TBEL for TSS is consistent with the permitting approach used for other industrial and mining point source dischargers in EPA Region 8.

6.3.2. Temperature

An effluent limit for temperature is not included in this Permit. 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. Finally, the facility discharges to dry, sandy washes which rarely contain surface water. Temperature is not a conservative pollutant – as it flows across the landscape or through the subsurface layer, it equilibrates with ambient temperatures – so EPA has determined that any temperature discharges would not likely have an effect on downstream waters such as the White River, which is 15 to 20 miles downstream.

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, EPA agrees that collecting baseline water temperature data is reasonable and would help verify the assumption that groundwater discharges will not have a negative impact on surface water temperatures. Because temperature variability in groundwater is typically very low, EPA will only require semi-annual temperature monitoring – once in the 'summer' months (May-October), and once in the 'winter' months (November-April), at each outfall. This will also help verify EPA's assumption that temperature does not vary significantly from season to season.

6.3.3. Total Dissolved Solids (TDS)

This Permit contains a daily maximum effluent limit of 3,500 mg/L TDS for all outfalls. This limit was included in 1996 and was a production-based limit based on the nearby AGC Bonanza Mine. It is not clear what this production-based limit was originally based on, or why it was applied to the Cottonwood Mine. Regardless, this effluent limit is retained in the Permit due to "anti-backsliding" regulations, and because this limit helps ensure compliance with the salinity loading effluent limitations.

6.3.4. Salinity Loading

This Permit contains an effluent limit of 366 tons of salt per year (equivalent to one ton of salt per day), measured as TDS, and requires reporting on a rolling quarterly basis. This limit was included in the permit issued in 1996 per the *Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program for Intercepted Ground Water.* The current load limit is being retained in the Permit.

6.3.5. pH

A pH range limit of 6.5-9.0 was included in previous permits, and was originally based on Utah water quality standards. This pH range is equivalent to EPA's national recommended freshwater aquatic life pH criteria and will be retained in the Permit.

6.3.6. Oil & Grease

An oil and grease limit was included in the previous permit. There are no specific dewatering Effluent Limit Guidelines (ELGs) developed for concentration limitations on oil and grease. However, 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." 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 looking for a visible sheen or floating oil, and when 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 approach and limit will be retained in this Permit.

The monitoring frequency for visual observation of oil and grease has been set to weekly. This is more frequent than other monitoring requirements in the Permit, but is justified because oil and grease exceedances can be caused by mechanical or equipment malfunction as well as variability in the effluent.

6.3.7. Dissolved Oxygen (DO)

Groundwater is typically low in DO. Data from AGC's nearby Bonanza Mine indicates that the groundwater in their mines typically contains around 1.0 mg/L DO before any treatment. EPA's 1986 water quality criteria lists recommended dissolved oxygen levels for warmwater "other life stages" criteria, which consist of a 30-day average of 5.5 mg/L DO or more, and an instantaneous minimum of 3.0 mg/L DO.

However, the facility's discharges are to dry sand washes over 15 miles from the White River. Low dissolved oxygen levels are not a conservative pollutant – oxygen is readily absorbed by water flowing downhill in the ambient atmosphere. The discharges at these outfalls are not considered to have reasonable potential to affect any downstream aquatic life. Therefore, DO is not a potential pollutant of concern and DO effluent limitations and monitoring will not be required at this time.

6.3.8. Metals

Gilsonite is a hydrocarbon bitumen and not a metal ore (Table 2). 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 ore and the surrounding rock. For these reasons, metals are not considered a pollutant of concern and metals effluent limitations and monitoring will not be required.

6.3.9. Whole Effluent Toxicity (WET) Monitoring

Discharge data from this and other nearby mining dewatering operation indicates that the source water is chemically consistent. Furthermore, with the exception of possible pH adjustments using sulfuric acid, there are no chemicals used during the treatment process. Finally, all facility discharges are located in stream channels that are dry most of the year. For these reasons, EPA believes 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 if the need for WET effluent limitations or monitoring is determined at a future date.

6.3.10. No Discharge of Sanitary Wastewater or Contact Cooling Water

The facility does not have any sanitary sewer infrastructure or restroom facilities, and the Permit does not authorize the facility to discharge sanitary wastewater.

The previous permit contained a prohibition for discharging contact cooling water. The facility does not use cooling water and it is unclear why this provision was included. However, to avoid any "anti-backsliding" concerns, this provision will remain in the Permit.

6.3.11. No Discharge of Process Wastewater Except During Extreme Precipitation Events

The facility does not have any processing capabilities – they truck all of the mined gilsonite ore to the Bonanza facility for processing. This process is not expected to change. Therefore, the Permit does not authorize the discharge of process wastewater. However, if the facility plans to begin processing gilsonite ore at the site, the Permittee may request a permit modification to allow for a process wastewater discharge during a 10-year, 24-hour precipitation event or greater, as allowed in 40 CFR Part 436.62. EPA may add SWPPP inspection requirements for a processing plant in any permit modification.

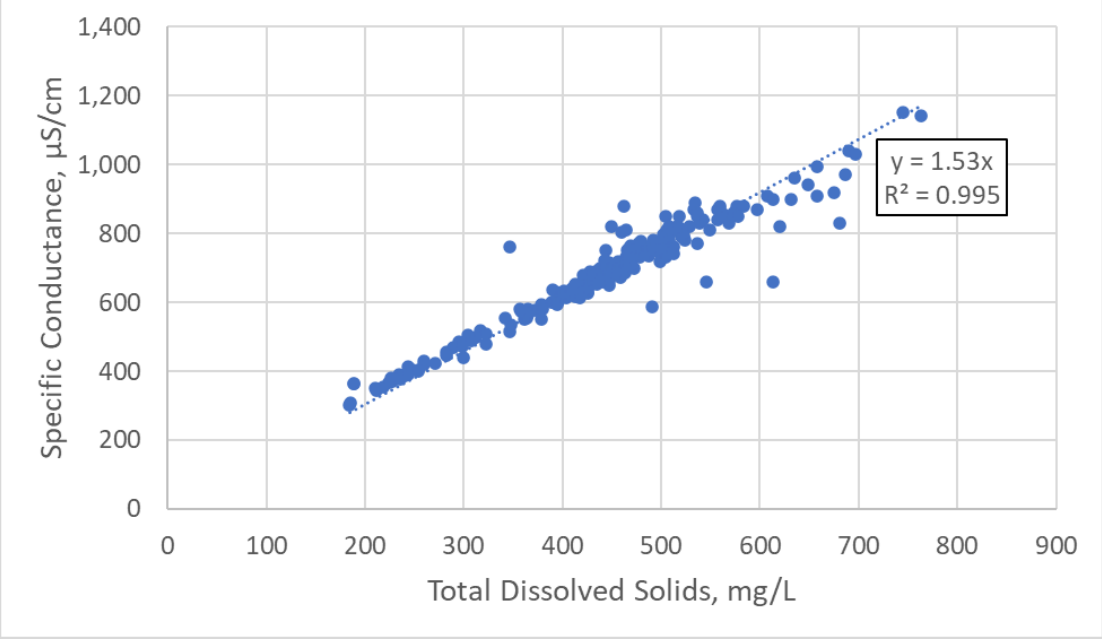
6.3.12.Cations and Anions

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. Specifically, they expressed concerns that the cations and anions could be affecting downstream animal and plant life. Although the Ute Indian Tribe has not adopted water quality standards for the receiving waters at this time, 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, EPA has determined that a semi-annual 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.

6.3.13.Specific Conductance (SC) and Electrical Conductivity (EC)

During government to government consultations, the Ute Indian Tribe requested that SC and/or EC be included as a monitoring parameter in the Permit. EC is a measure of water's capability to conduct electricity. Since the ability to conduct electricity varies with temperature, SC is an EC measurement that has been corrected to 25 °C. SC and EC are basically direct measurements of the amount of salt in water. In fact, most natural waters display a very constant relationship between SC and TDS. This strong correlation is demonstrated in data from the nearby White River shown in Figure 4.

Figure 4. Relationship between SC and TDS at USGS 09306500, White River near Watson, Utah, data from 1985-2021 (n=210 samples)



Water with high salt content can have a detrimental effect on irrigated crops, as different crops and plants have differing salt tolerances. According to the Ute Indian Tribe, no irrigated agriculture use occurs for either receiving water, and the Permit already contains effluent limitations and monitoring requirements for TDS. Based on this and the fact the receiving waters have no water quality standards that would be impacted by SC or EC and that there are no associated EPA recommended water quality criteria, EPA cannot justify including SC or EC monitoring requirements or effluent limitations in the Permit.

6.3.14.Sodium Adsorption Ratio (SAR)

During government to government consultations, the Ute Indian Tribe 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 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 either receiving water, the constituents that make up the SAR calculation are already being monitored (see section 6.3.12); thus, EPA will include a semi-annual SAR reporting requirement for each outfall when cations are measured. 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 or uses that would be impacted by SAR and there are no associated EPA recommended water quality criteria for SAR.

6.3.15.Total Hardness

During government to government consultations, the Ute Indian Tribe 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. 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 (see section 6.3.12); thus, EPA will include a semi-annual hardness reporting requirement for each outfall when cations are measured. 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 or uses that would be impacted by hardness there are no associated EPA recommended water quality criteria that would be impacted by hardness given the pollutants of concern.

6.3.16.Turbidity

During government to government consultations, the Ute Indian Tribe requested that turbidity be included as a monitoring parameter in the Permit. Turbidity is a measurement of the relative clarity of water – it is measured by shining light through a water sample and measuring how much

of the light passes through the sample. Since it is a measurement of the clarity of water, turbidity is often correlated to total suspended solids – for example, high amounts of suspended solids in a water sample cause the turbidity to increase. In permitting, turbidity is typically used in assessing the impact to stream health from dewatering operations by measuring upstream and downstream turbidity, and to assess drinking water quality. The facility discharges to dry washes and the discharges are over 15 miles from the nearest perennial water source. There is no drinking water use in the receiving waters. Additionally, the Permit contains effluent limits and regular monitoring requirements for TSS. Based on this, EPA cannot justify including turbidity monitoring requirements or effluent limitations in the Permit.

6.4. Final Effluent Limitations

Applicable technology based and water quality based effluent limits were compared and the most stringent of the two was selected for the following effluent limits (Table 4). All effluent limits are at end-of-pipe.

Table 4. Effluent Limitations for Outfalls 002 and 003

Characteristic	**30-Day Average a/**	**7-Day Average a/**	**Daily Maximum a/**	**Limit Basis**
Flow, mgd	report only	n/a	report only	-
TSS, mg/L	25	35	n/a	PP/PJ
Oil and Grease, mg/L	n/a	n/a	10	RWQC/ EPA Policy
TDS, mg/L	n/a	n/a	3,500	PP/PJ
pH, standard units	Shall not be less than 6.5 nor greater than 9.0 at any time.			RWQC
TDS Load, tons/year	The TDS load from the sum of all outfalls shall not be greater than 366 tons/year			CRBSCF
Sanitary wastewater, process wastewater, and contact cooling water	There shall be **no** discharge of sanitary wastewater, process wastewater, or contact cooling water.			PP/PJ
Visible sheen	There shall not be any visible sheen in the receiving water or adjoining shoreline.			RWQC/ EPA Policy

PP/PJ: Previous Permit and Professional Judgment, TBEL: Technology-based effluent limit, RWQC: EPA's 1986 Recommended Water Quality Criteria, CRBSCF: Colorado River Basin Salinity Control Forum

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

6.5. Antidegradation

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

6.6. Anti-Backsliding

Federal regulations require at 40 CFR Part 122.44(l)(1) 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 Part 122.62)."

This permit renewal complies with anti-backsliding regulatory requirements. All effluent limitations, standards, and conditions in the Permit are either equal to or more stringent than those in the previous permit (see section 2).

7. MONITORING REQUIREMENTS

The following parameters shall be monitored during discharge from the dewatering operation (Table 5). If no discharge occurs during a monitoring period, "no discharge" shall be indicated on the DMR. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, as required in 40 CFR Part 122.41(j).

Effluent monitoring samples shall be taken at the appropriate outfall. The effluent sampling location shall be after all treatment processes but prior to discharge to the receiving water.

Table 5. Monitoring and Reporting Requirements for Outfalls 002 and 003

Effluent Characteristic	Monitoring Frequency	Sample Type a/	Data Type a/
Flow, million gallons per day (mgd)	Monthly b/	Instantaneous	Daily Maximum 30-Day Average
TSS, mg/L	Monthly c/	Grab	30-Day Average 7-Day Average
Oil and Grease, visual	Weekly	Visual d/	Present/Not Present
pH, standard units	Monthly e/	Grab	Instantaneous Minimum Instantaneous Maximum
Calcium, mg/L	Semi-annually	Grab	Daily Maximum
Iron, mg/L	Semi-annually	Grab	Daily Maximum
Magnesium, mg/L	Semi-annually	Grab	Daily Maximum
Potassium, mg/L	Semi-annually	Grab	Daily Maximum

Effluent Characteristic	Monitoring Frequency	Sample Type a/	Data Type a/
Sodium, mg/L	Semi-annually	Grab	Daily Maximum
Bicarbonate, mg/L	Semi-annually	Grab	Daily Maximum
Carbonate, mg/L	Semi-annually	Grab	Daily Maximum
Chloride, mg/L	Semi-annually	Grab	Daily Maximum
Fluoride, mg/L	Semi-annually	Grab	Daily Maximum
Sulfate, mg/L	Semi-annually	Grab	Daily Maximum
Sodium Adsorption Ratio (SAR), f/	Semi-annually	Calculation	Daily Maximum
Hardness, mg/L g/	Semi-annually	Calculation	Daily Maximum
Temperature, °C	Semi-annually h/	Instantaneous	Instantaneous Maximum Instantaneous Minimum
TDS, mg/L	Monthly i/	Grab	Daily Maximum 30-Day Average
TDS Load, tons/year	Quarterly j/	Calculation	Rolling Annual Average

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

b/ 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 and the daily maximum flow (maximum volume discharged during a 24-hour period) observed during the reporting period shall be reported in million gallons per day.

c/ The average monthly value and highest average weekly value shall be reported for each month in the quarterly reporting period.

d/ For visual observations, report "Yes" or "1" if the parameter was detected during the reporting period; report "No" or "0" if the parameter was not detected during the reporting period. 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/ SAR can be calculated from the calcium, magnesium, and sodium measurements. Typically, labs will report this parameter if requested.

g/ Hardness can be calculated from the calcium and magnesium measurements. Typically, labs will report this parameter if requested.

h/ Temperature monitoring each year will occur twice (when discharging) – once in the November-April timeframe, and once in the May-October timeframe.

i/ The average monthly value and the daily maximum shall be reported for each month in the quarterly reporting period.

j/ The reported value for this parameter is the total mass of dissolved solids discharged by this facility 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 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.

(1) Rolling Annual TDS Load (tons/year) = sum of the past 12 months of Monthly TDS Load
(2) Monthly TDS Load (tons/month) = 0.125 x [$TDS_{outfall002}$ x $ADR_{outfall002}$ + $TDS_{outfall003}$ x $ADR_{outfall003}$]

7.1. Example Calculation – Monthly TDS Load

The facility reports the following information for May:

- At Outfall 002, a TDS measurement of 2,500 mg/L and an average daily discharge of 0.05 mgd.
- At Outfall 003, a TDS measurement of 2,000 mg/L and an average daily discharge of 0.10 mgd.

According to Equation (2), the monthly TDS load for May would then be: 0.125 * (2,500 mg/L * 0.05 mgd + 2,000 mg/L * 0.10 mgd) = **40.6 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 0.125 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 days/month * 3.785 liters/gallon * 0.001 grams/milligram * 0.0022 pounds/gram * 0.0005 tons/pound = **0.125**)

8. SPECIAL CONDITIONS IN PERMIT

8.1. Operating BMPs

The Permittee may use chemical and engineering controls to achieve TSS and pH effluent limitations. 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 Part 122.44(k)(4).

8.2. Stormwater Requirements

The previous permit contained a requirement to develop and implement a SWPPP. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented to minimize the discharge of these pollutants in runoff from this facility. In this Permit, the SWPPP requirements have been updated to better align with the SWPPP requirements in EPA's 2021 Multi-Sector General Permit. The updated SWPPP requirements have been added to section 5.2 of the Permit.

9. REPORTING REQUIREMENTS

On December 21, 2015, the NPDES Electronic Reporting Rule (40 CFR Part 127) went into effect. This rule includes two phases. Phase 1 included the requirement that by no later than December 21, 2016, entities that are required to submit DMRs must do so electronically unless a waiver from electronic reporting is granted to the entity. Phase 2 includes the requirement that by no later than

December 21, 2025, or as otherwise specified in 40 CFR Part 127, other specified reporting must be done electronically.

With the effective date of the Permit, the Permittee must electronically report DMRs on a quarterly frequency using NetDMR. Electronic submissions by permittees must be submitted to EPA Region 8 no later than the 28th of the month following the completed reporting period (Table 6). The Permittee must sign and certify all electronic submissions in accordance with the signatory requirements of the Permit. NetDMR is accessed from the internet at https://netdmr.zendesk.com/home.

The reports that are to be submitted electronically after December 21, 2025, or as otherwise specified in 40 CFR Part 127, are to be submitted using the NPDES Electronic Reporting Tool (NeT). The instructions on how to use NeT are not yet available. In the future, the Permittee will receive instructions on how to use NeT. Until then, the Permittee shall continue to submit these reports in paper format by mailing them to the specified addresses.

Table 6. Due Dates for Quarterly DMR Submittals

Compliance Monitoring Period	**Due Date**
January – March	April 28
April – June	July 28
July – September	October 28
October – December	January 28

10. OPERATIONS AND MAINTENANCE REQUIREMENTS

40 CFR Part 122.41(e) requires permittees to properly operate and maintain all facilities and systems of treatment and control which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. To ensure this, the Permit will require an operation and maintenance plan and regular facility inspections, both of which are important aspects of proper operation and maintenance. Regular facility inspections and a working operation and maintenance plan allow the Permittee to observe and identify any operational deficiencies, and provides a framework to address those deficiencies. These requirements have been established in section 7.6 of the Permit to help ensure compliance with the provisions of 40 CFR Part 122.41(e).

11. ENDANGERED SPECIES CONSIDERATIONS

The Endangered Species Act (ESA) 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, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 CFR Part 402.14(a)).

The U. S. Fish and Wildlife Information for Planning and Conservation (IPaC) website program was accessed on September 29, 2021 to determine federally-listed Endangered, Threatened, Proposed and Candidate Species that may be present in the portion of Uintah County, Utah near the facility (Table 7).

Table 7. Potentially Affected Listed Species at this Location

Species	**Scientific Name**	**Status**
Mexican spotted owl	*Strix occidentalis lucida*	Threatened
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened
Bonytail	*Gila elegans*	Endangered
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered
Humpback Chub	*Gila cypha*	Endangered
Razorback Sucker	*Xyrauchen texanus*	Endangered
Monarch Butterfly	*Danaus plexippus*	Candidate
Ute ladies'-tresses	*Spiranthes diluvialis*	Threatened
Uintah Basin Hookless Cactus	*Sclerocactus wetlandicus*	Threatened

Additionally, IPaC determined there is no critical habitat at this location.

11.1. Biological Evaluations and Conclusions

Biological evaluations of the potential effects of the proposed action on the seven 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 reissuance of this NPDES permit, which authorizes discharge to one unnamed tributary of Sand Wash, and one unnamed tributary of Cottonwood Wash. Both Sand Wash and Cottonwood Wash are tributaries of the White River. The reissued NPDES permit authorizes a new outfall to a dry tributary to Cottonwood Wash (Outfall 003), but other than that this is a continuation of existing operating conditions. Regardless of the new outfall location, no significant changes to habitat, discharge volumes or water quality are planned or expected due to the reissuance of this Permit. Since this is primarily a 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 facility location 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. 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, EPA has determined that the reissuance of the Permit is **not likely to adversely affect** this species.

Yellow-billed cuckoo, *Coccyzus americanus* – This species is currently listed as threatened. The facility location is outside the proposed critical habitat for this species. 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 mine anticipated to affect this species. Based on this information, EPA has determined that the reissuance of the Permit is **not likely to adversely affect** this species.

Bonytail, *Gila elegans* – This species is currently listed as endangered. The facility location is outside the critical habitat for this species. Bonytail are found almost solely in the Green River watershed, and 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 over 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, EPA has determined that the reissuance of the Permit is **not likely to adversely affect** this species.

Colorado pikeminnow, *Ptychocheilus lucius* – This species is currently listed as endangered. The facility location 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 over 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, EPA has determined that the reissuance of the Permit is **not likely to adversely affect** this species.

Humpback chub, *Gila cypha* – This species is currently listed as endangered. No critical habitat has been designated 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 over 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, EPA has determined that the reissuance of the Permit is **not likely to adversely affect** this species.

Razorback sucker, *Xyrauchen texanus* – This species is currently listed as endangered. No critical habitat has been designated 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 over 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, EPA has determined that the reissuance 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, EPA believes reissuance 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, EPA has determined that the reissuance 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, EPA has determined that the reissuance of the Permit is **not likely to adversely affect** this species.

Per the *Endangered Species Consultation Handbook* and the *Memorandum of Agreement Between EPA, FWS, and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act*, the "not likely to adversely affect" determination requires further consultation with the FWS.

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 U.S. National Park Service National Register of Historic Places database was used to determine and evaluate resources of concern near the facility. No properties were found.

During public notice of the Permit, the Tribal Historic Preservation Office (THPO) will be notified as an interested party to ensure that historic properties are not negatively affected by the conditions of the Permit.

13. 401 CONDITIONS

EPA is the CWA Section 401 certifying authority for the Permit, because the Ute Indian Tribe has not received authorization to implement section 303(c) of the CWA. EPA has determined the Permit protects Tribal water quality requirements, so § 401 conditions are unnecessary. Regardless, EPA will solicit public comments on Section 401 conditions during the public comment period.

14. MISCELLANEOUS

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

Permit drafted by Erik Makus, U.S. EPA, (406) 457-5017, September 2021.

ADDENDUM

AGENCY CONSULTATIONS

On January 18, 2022, the FWS concurred with EPA's preliminary conclusion that the Permit reissuance is not likely to adversely affect listed species.

The Ute Indian THPO did not comment on EPA's preliminary determination that the Permit reissuance will not impact any historic properties.

At the time of permit reissuance, EPA was the Clean Water Act Section 401 certifying authority for the Permit, because the Ute Indian Tribe had not received authorization to implement section 303(c) of the Act. EPA solicitated comments for Section 401 certification requirements during the public notice comment period and did not receive any comments related to Section 401 certification. Upon addressing all comments received (if any) during the public notice comment period related to Section 401 certification requirements, the signing of the Permit shall constitute EPA's Section 401 certification.

PUBLIC NOTICE AND RESPONSE TO COMMENTS

The Permit and statement of basis, including the CWA section 401 certification, were public noticed in the *Vernal Express* on November 10, 2021. The comments received and the responses are provided below.

Comment #1 (Ute Indian Tribe):

The Tribe stated in its August 10th letter that the discharge rate must be monitored continuously. Discharge rate readings should be automatically recorded hourly and a daily average discharge rate should be computed and recorded. The Tribe further explained that inexpensive flow meters and programmable dataloggers are readily available for this kind of application with minimal human labor requirements, and that data should be downloaded from the datalogger and the data files transmitted to the Tribe and EPA monthly. Discharge rate may be recorded in gallons per minute (gpm) or cubic feet per second (cfs) and converted to other units (mgd) as necessary for permit reporting requirements.

Contrary to the Tribe's required discharge monitoring measures, the Draft Permit and Statement of Basis provides that AGC must report a 30-day average flow and a daily maximum flow each in million gallons per day. Table 5 of the Draft Permit and Statement of Basis indicates that flow monitoring frequency is monthly and sampled as an instantaneous "grab" sample (per the Draft Permit and Statement of Basis, Section 1 definitions). This is not tenable, as it is not possible to determine a maximum daily flow rate from a single instantaneous grab sample taken during the day. Effluent pumping rates can be expected to vary with time due to variation in pump suction lift and the total discharge head against which the pump is operating. Total salt loading to the receiving Colorado River drainage basin is determined by flow rate and the Total Dissolved Solids (TDS) of the groundwater effluent.

Response #1:

The draft permit required a 'monthly' monitoring event for flow, similar to the previous permit. 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 'b' in Table 3 of the permit). During inspections, EPA may request to see the flow records and verify that the measurement method is accurate. However, EPA does not typically prescribe *how* to monitor discharge rates. Facilities may use a variety of methods (e.g., continuous flow meter, pump hour logs, batch discharge volume measurements, etc.) as long as the method satisfies the footnote mentioned above.

However, after discussions with the Permittee, EPA determined that the flow *Monitoring Frequency* and *Sample Type* in Table 3 of the draft permit was not representative of the actual monitoring protocols currently followed by the Permittee. The Permittee relies on a combination of weekly (or greater) instantaneous flow readings combined with continuous pump/generator log-hours to calculate the total flow rate for each month (i.e., weekly flow meter reading multiplied by the number of hours that the pump/generator ran that week). Thus, their current protocols more closely represent what the Tribe has requested, and the Permit language will be updated to better reflect the current protocols at AGC Cottonwood and address the Tribe's concerns.

The following language was added to the final Permit: In Table 3, the *Monitoring Frequency* was changed from 'monthly' to 'weekly', and the *Sample Type* was changed from 'instantaneous' to 'grab/continuous.' Additional language was added to footnote 'b' in Table 3 to explain the 'grab/continuous' sample type and to clarify that the reporting requirements (three monthly reports due once per quarter) stay the same, even though the monitoring frequency has changed.

Comment #2 (Ute Indian Tribe):

The Tribe's letter further stated that the following water quality sampling should also be required in the new Permit. These parameters should be "grab" sampled at the point of discharge prior to water hitting the receiving (ground or water body) surface using portable instrumentation and reported monthly to the Tribe and EPA:

a. Water pH
b. Water temperature (F or C)
c. Total suspended solids (mg/l)
d. Total dissolved solids (mg/l)
e. Total dissolved solids (tons/year) - computed
f. Oil and grease, visual sample

The Tribe specifically requires that water temperature be added to this list and grab sampled at the same monthly frequency. EPA has included water temperature as a parameter to be sampled instantaneously only once every 6 months. This deviation from the Tribe's required sampling method would not allow evaluation of the relationship between TDS and electrical conductivity. For water at standard temperature of25 °C, the relationship is approximated as:

$$TDS\ (mg/L) = 0.64 \times Specific\ Conductance\ (\mu Siem)$$

Water temperature is easily measured and is often co-measured with pH using inexpensive, portable, hand-held meters. EPA's Draft Permit and Statement of Basis provides that specific conductance or electrical conductivity of the effluent groundwater can be approximated using the monthly measured and reported TDS as these two parameters are closely related. In reaching this conclusion, EPA has failed to account for the fact that water temperature, which is easily sampled and recorded, affects this relationship. Thus, using TDS as a basis for determining the conductance or electrical conductivity of the effluent groundwater is only appropriate where water temperature is measured and recorded at the same monthly frequency as pH and TDS, as indicated above.

Response #2:

With the exception of water temperature, the parameters requested by the Tribe in this comment are already required monitoring parameters at the monthly frequency requested by the Tribe (see Table 5). EPA agrees that these should remain in the Permit.

EPA does not agree that water temperature is a required parameter for converting TDS to SC. See the equation provided by the Tribe above – no temperature parameter is in the equation. This is because SC is defined by the United States Geological Survey[2] as the electrical conductivity of one cubic centimeter of a solution *at 25° C*. Thus, SC is always referenced to a standard temperature so that it can be compared "apples to apples" to other measurements of SC.

However, EPA recognizes that temperature may have an impact on aquatic life, and is a required parameter in most permit applications. While EPA felt that semi-annual monitoring for temperature was adequate based on expected low variability in the groundwater, it acknowledges that it would be reasonable (and relatively simple) to collect a dataset to show this – temperature is easily measured and can be co-measured with pH using inexpensive, portable, hand-held meters. Since pH is required on a monthly basis, EPA agrees to pair temperature data collection frequency with pH frequency, and require a monthly monitoring frequency for temperature. These monitoring requirements will be re-visited during the next permit issuance.

The monitoring frequency for temperature in Table 3 of the Permit has been changed from semi-annual to monthly.

Comment #3 (Ute Indian Tribe):

Finally, the Tribe requires that a representative water sample volume shall be collected per EPA sampling protocols regarding volume, container, storage (i.e., if refrigeration is required), shipping and handling, etc. Laboratory analysis of the collected water sample and reporting must be performed no less often than quarterly. If the mine is in operation with continuous groundwater discharge, then water sample lab analyses and reporting should be performed monthly to assess changes with time. If sampling reveals stable water chemistry, then sample collection and analyses frequency may be reduced to semiannual or annual analysis and reporting. The water sample shall be submitted to a qualified laboratory for analysis/determination of the following parameters:

[2] USGS, 2019. Specific Conductance: US Geological Survey Techniques and Methods, book 9, chap. A6.3.

a. Full suite of anions including carbonates, bicarbonates and sulfates
b. Full suite of cations
c. Specific conductance or electrical conductivity (dS/m)
d. Sodium adsorption ratio
e. Total Hardness
f. Turbidity

Response #3:

EPA had added a requirement for semi-annual monitoring for cations, anions, sodium adsorption ratio (SAR), and total hardness in the draft permit. EPA felt that semi-annual monitoring for these parameters was adequate based on expected variability in the groundwater, but acknowledges that it would be reasonable to require more frequent initial monitoring to establish a data set of the water chemistry and then reduce that frequency if stable water chemistry is demonstrated. Therefore, EPA will change the monitoring frequency to quarterly for these parameters, with an option for the facility to request a reduction in frequency after two (2) years – or eight (8) quarters – of data collection. EPA may approve or deny the request based on the monitoring results and other available information without further public notice or major modification of the Permit. If approved, the reduction in frequency may be to either semi-annual or annual monitoring, at EPA's discretion. EPA plans to discuss the data with the Tribe's environmental staff prior to approving or denying the change.

Monitoring frequency in Table 3 of the Permit for total cations, total anions, SAR, and hardness has been changed from semi-annual to quarterly, and a permit condition (as footnote 'f') has been added to allow the permittee to request a reduction in monitoring frequency.

Regarding specific conductance and turbidity, EPA had determined that there was no justification for including SC or turbidity in the draft permit. EPA feels that these concerns can be met with the existing monitoring requirements.

- The Permit requires monthly TDS monitoring (and contains TDS effluent limitations). TDS and SC are highly positively correlated (see Figure 4), and TDS represents a robust mass balance approach to measuring salt load. Therefore, concerns related to SC will be captured by the TDS requirements.
- The Permit requires monthly TSS monitoring (and contains TSS effluent limitations and TSS best management practice [BMP] requirements). TSS and turbidity are positively correlated, and TSS represents a robust mass balance approach to measuring sediment load. Therefore, concerns related to turbidity will be addressed by the TSS requirements (including the TSS BMPs found in section 5 of the Permit).

No changes were made to the Permit regarding SC and turbidity.

Comment #4 (Ute Indian Tribe):

Pursuant to Executive Order No. 13175 and EPA's "Policy on Consultation and Coordination with Indian Tribes," the EPA must consult with the Tribe on a government-to-government basis throughout the process of developing and implementing the NPDES Permit. Furthermore, the United

Nations Declaration on the Rights of Indigenous People explicitly requires agencies to obtain free, prior and informed consent from the Tribe in issuing a Permit that could adversely impact the Tribe or tribal resources.

Throughout its Draft Permit and Statement of Basis, EPA represents that it has already satisfied its obligation to engage in government-to-government consultation with the Ute Indian Tribe. The Tribe disagrees with this assertion. As the foregoing section demonstrates, EPA has failed to act on the Tribe's position as it relates to the necessary monitoring measures that must be instituted in the Permit. The Tribe rejects EPA's check-the-box approach to consultation, which undermines the free, prior and informed consent requirement under the UNDRIP and the EPA's trust responsibility.

The Tribe expects its federal trustee not just to engage in consultation with the Tribe in addressing the issues raised in these comments and any other issues that may be raised by the Tribe in connection with this NPDES Permit, but to obtain tribal consent for the protections to be inserted into the Permit. Failure to do so would constitute a violation of EPA's consultation requirements under federal law and policy, as well as EPA's trust responsibility to the Tribe.

Response #4:

EPA recognizes the federal government's trust responsibility and takes this responsibility very seriously. Throughout this process, EPA has followed the *EPA Policy on Consultation and Coordination with Indian Tribes*[3]. While there is no single formula for what constitutes appropriate consultation, EPA has initiated five meetings with the Tribe and their representatives over the past ten months, has listened to the Tribe's concerns, and has worked to clearly articulate EPA's position to the Tribe at every possible opportunity. EPA appreciates the Tribe's partnership in this matter and hopes to continue to improve the consultation process moving forward.

No changes were made to the Permit as a result of this comment.

ERRATA

1. On December 16, 2021, the Permittee requested to move the location of Outfall 002 approximately 300 feet to the southeast. This move will allow the facility to build one pH treatment system for two mine shafts if needed. Section 2 of the Permit allows the Permittee to request a change to a dewatering outfall location provided it meets the conditions specified in that section. This request met those requirements and will be granted.

   Additionally, while evaluating this request, EPA realized that the latitude and longitude listed in the statement of basis and draft permit for Outfall 002 had been erroneously rounded to the nearest 15 seconds, which resulted in Outfall 002 being identified as approximately 850 feet northwest of the actual location. To be clear, Outfall 002 has never been at this location – this was simply a clerical error.

[3] US EPA, 2011. EPA Policy on Consultation and Coordination with Indian Tribes, https://www.epa.gov/sites/default/files/2013-08/documents/cons-and-coord-with-indian-tribes-policy.pdf

The final permit will reflect the new, correct location of Outfall 002.

The latitude and longitude of Outfall 002 in both the title page and Table 2 of the statement of basis, and both the title page and Table 1 of the Permit, have been changed from 39.90000° N, 109.51667° W to 39.89780° N, 109.51373° W.

2. On January 12, 2022, EPA adjusted the statutory civil penalties associated with violations of the Clean Water Act to reflect inflation, as required by the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015. The language in section 7.2 of the Permit (Penalties for Violations of Permit Conditions) was updated to reflect the most current information. These changes are considered a logical outgrowth of the original penalty language.