

## Statement of Basis

PERMITTEE: **American Gilsonite Company**

FACILITY: **American Gilsonite Company - Bonanza**

PERMIT NO: **UT-0000167**

RESPONSIBLE OFFICIAL: Dean Richens, Environmental Coordinator  
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PERMIT TYPE: Minor - Mine Dewatering (Renewal)  
Indian Country

### **Background Information**

The American Gilsonite Company (AGC) mines, processes, packages and ships Gilsonite® from the Bonanza, Utah facility. Gilsonite®, is a registered trademark of American Gilsonite Company and is a non-hazardous, naturally occurring, hydrocarbon resin that is similar in appearance to coal or hard asphalt. It is mined underground by hand in vertical shafts by pneumatic chipping hammers and conveyed to the surface through a centrifugal blower. Gilsonite® is used in more than 160 products, primarily in dark-colored printing inks and paints, oil well drilling muds and cements, asphalt modifiers, foundry sands additives, and a wide variety of chemical products.

Bonanza, Utah is a company owned town located approximately 45 miles south of Vernal, Utah, in Section 23, T9S, R24E, (Latitude 40° 01' 13" Longitude 109° 10' 34"). The AGC facility is entirely within the Uintah and Ouray Indian Reservation. The AGC process plant is located just south of the Town of Bonanza and the lagoon for process water is located to the north of town. A second lagoon for sanitary wastewater for the Town of Bonanza is located next to the process water lagoon and is covered under general permit # UTG589407. Both lagoons are fenced and non-discharging.

The AGC mine site is a working mine with little no to infrastructure visible from Highway 45 in Utah. For the purposes of this permit, the AGC mine is noted as being located at Latitude 40° 3' 40.00"N, Longitude 109° 11' 56.09"W. This corresponds to the location of Outfall 024, which is the most significant discharging outfall from mining operations. The location for Outfall 024 is used for the location of the mine as a whole because there are no discernible out-buildings to assign a location to.



*Location of the American Gilsonite Company, Bonanza Mine – (2014, Google Maps)*



*Direction of Surface Flow From the Mine to the White River – (2014 Satellite Imagery, Google Maps)*



*Coyote Wash as it Exits the AGC, Bonanza Mine – (2014 Satellite Imagery, Google Maps)*

This permit for the AGC mining operation facility covers AGC mine outfalls that are located northwest of the process plant throughout a 5 mile radius. All discharges covered by this permit, with the exception of Outfall 028, are from pumping groundwater to the surface and discharging it into existing drainageways. Discharge from Outfall 028, containing a combination of ER/boiler condensate and process water, is pumped to a non-discharging evaporation lagoon. All discharges with the exception of discharge Outfall 024, when operating, are intermittent and discharge a few hundred gallons per year. Outfall 024 has had an average 30-day flow rate of approximately 220 gpm over the past 5 years. All discharges from the 20 mine drainage discharge points flow to Coyote Wash, a tributary to the White River, in Uintah County, Utah. It is not known whether the specific discharges from the AGC mine into Coyote Wash are conveyed to the White River as surface flow or entirely infiltrate into the Coyote Wash stream bed. However, satellite imagery indicates both significant perennial flow in Coyote Wash from the AGC mine location to the White River and a significant hydrologic connection between Coyote Wash and the Green River.



*Confluence of Coyote Wash and the White River – (2014 Satellite Imagery, Google Maps)*

With this renewal, AGC has requested minor modifications to two (2) outfall locations and the addition of three (3) new outfalls. The Description of Discharge Points below lists the outfall numbers and locations, which will be authorized by this permitting action.

This proposed permit renewal authorizes only the following discharges in accordance with identified discharge point(s), effluent limitations, monitoring requirements and other conditions set forth in the proposed permit. Authorization for discharge is limited to only those outfalls specifically listed in the permit.

Storm water discharge requirements for the AGC operations in the Bonanza area were included in the previous individual permit issued by the EPA. The requirements for this permit renewal are similar to those in the previous permit which require the permittee to have and implement a storm water pollution prevention plan (SWPPP). The emphasis of the SWPPP is to minimize the potential for the discharge of pollutants in storm water.

Description of Discharge Points

## Outfall

<u>Serial Numbers</u>	<u>Description of Discharge Points</u>
001	Discharge from American Gilsonite Company Mine Numbers I-5, I-12, B-38 (Latitude 40° 02' 27" N, Longitude 109° 13' 18" W); S16, T9S, R24E
002	Discharge from American Gilsonite Company Mine Number I-10 (Latitude 40° 01' 11" N, Longitude 109° 10' 18" W); S24, T9S, R24E
003	Discharge from American Gilsonite Company Mine Number I-30 (Latitude 40° 02' 06" N, Longitude 109° 12' 30" W); S15, T9S, R24E
010	Discharge from American Gilsonite Company Mine Number E-30 (Latitude 40° 03' 42" N, Longitude 109° 10' 56" W); S2, T9S, R24E
013	Discharge from American Gilsonite Company Mine Number LE-5 (Latitude 40° 00' 32.9" N, Longitude 109° 16' 11.7" W); S25, T9S, R23E
015	Discharge from American Gilsonite Company Mine Number I-15 (Latitude 40° 01' 51" N, Longitude 109° 11' 58" W); S15, T9S, R24E
016	Discharge from American Gilsonite Company Mine Number E-31 (Latitude 40° 03' 48" N, Longitude 109° 11' 48" W); S3, T9S, R24E
017	Discharge from American Gilsonite Company Mine Number B-44 (Latitude 40° 02' 13" N, Longitude 109° 13' 47" W); S17, T9S, R24E
020	Discharge from American Gilsonite Company Mine Number E-29 (Latitude 40° 03' 40" N, Longitude 109° 10' 44" W); S2, T9S, R24E
023	Discharge from American Gilsonite Company Mine Number E-27 (Latitude 40° 03' 36" N, Longitude 109° 10' 34" W); S2, T9S, R24E
024	Combined Discharge from American Gilsonite Company Mine Numbers E-27, E-28, E-29, E-30, E-30E, E-31, E-31E, E-33, E-34 and E-34W (Latitude 40° 3' 40.00"N, Longitude 109° 11' 56.09"W); S3, T9S, R24E
028	Discharge from American Gilsonite Company ER/Boiler Condensate (Latitude 40° 01' 0.3" N, Longitude 109° 10' 21" W); S23, T9S, R24E The water from this discharge is combined with process water that is conveyed into a non-discharging evaporation lagoon.
029	Discharge from American Gilsonite Company Mine Number B-48 (Latitude 40° 02' 19" N, Longitude 109° 14' 07" W); S17, T9S, R24E
030	Discharge from American Gilsonite Company Mine Number B-44, B46, B-48 and B-50 (Latitude 40° 02' 21" N, Longitude 109° 14' 16" W); S17, T9S, R24E

- 031 Discharge from American Gilsonite Company Mine Number B-46  
(Latitude 40° 02' 14" N, Longitude 109° 13' 57" W); S17, T9S, R24E
- 032 Discharge from American Gilsonite Company Mine Number B-52  
(Latitude 40° 02' 26" N, Longitude 109° 14' 30" W); S17, T9S, R24E
- 033 Discharge from American Gilsonite Company Mine Number WH-4  
(Latitude 39° 59' 42" N, Longitude 109° 11' 05" W); S35, T9S, R24E
- 034 Discharge from American Gilsonite Company Mine Number E-33  
(Latitude 40° 03' 54.2" N, Longitude 109° 11' 31.7" W); S3, T9S, R24E
- 035 Discharge from American Gilsonite Company Mine Number E-34W  
(Latitude 40° 03' 59.7" N, Longitude 109° 11' 49" W); S3, T9S, R24E
- 036 Discharge from American Gilsonite Company Mine Number B-38  
(Latitude 40° 02' 01.7" N, Longitude 109° 13' 08.3" W); S16, T9S, R24E

Numerous requests for minor modifications to move outfall locations have been submitted since this permit was originally authorized by EPA. Most recently, a request for a minor modification was submitted to EPA in 2014 to move outfall 024 approximately 800 feet to the northwest. The movement of this outfall did not result in a change in water quality being discharged from the facility, nor will it impact a different receiving water.

EPA recognizes that the AGC mine is an ever-changing operation. Therefore, this permit reissuance authorizes an additional level of flexibility to move outfall locations ¼ mile (1,320 feet) as long as water is being discharged to the same immediate waterbody. This is consistent with other mining permits (e.g., Westmoreland Resources - MT0030783) issued by EPA Region 8, which allow operators to move outfall locations ¼ mile provided that the new outfall location discharges to the same immediate waterbody and the proper notification is provided to EPA.

### **Receiving Waters**

Discharges from AGC are from numerous outfalls to unnamed ephemeral tributaries of Coyote Wash, a tributary to the White River, which flows into the Green River. The EPA is unsure if the water from Coyote Wash makes it to the White River as surface flow. The permit holder is unsure if the approximate 15 mile distance is surface flow or if it infiltrates before reaching the White River. Both instances are possible given certain environmental/weather conditions. The White River travels directly into and through the Uintah and Ouray Reservation lands. External reservation boundary "uses" within the State of Utah list tributaries from White River to headwaters as classified for secondary contact recreation, protection of warmwater species, irrigation, crops and stock watering.

### **Inspections**

The site was inspected on June 13, 2012 by representatives of the EPA Region 8. A Summary of Findings and Corrective Actions report noted a few items of deficiency. These items are as follows:

1. Improve notification communications with permitting and tribal authorities for a couple of instances of permit limit non-compliance.
2. The pH meter used to obtain monitoring data from discharge locations was not being calibrated regularly when used.
3. At the time of the inspection, discharging flows were being estimated. It was indicated that the Facility was in the process of installing flow measurement devices at only discharging outfall locations.
4. The lagoon systems were overgrown with vegetation. Permitted maintenance plan needs to be followed.

In a response letter dated August 20, 2012, AGC provided resolution for the corrective actions needed.

### **Effluent Monitoring Data**

DMR monitoring data for those outfalls reporting discharges from 2007 to 2014 are presented in Table 1 below. Based on the data submitted by the facility, the available maximum and minimum values over the last 5 years are reported with violations listed. Those outfalls listed in the previous permit, but not included in Table 1, reported that no discharges occurred.

*Table 1 – DMR data – American Gilsonite Company*

Date	Outfall	TDS (mg/L)		TSS (mg/L)		Oil & Grease (mg/L)	pH (s.u.)		Flow (mgd)	
		30 Day Avg	Daily Max	30 Day Avg	Daily Max		Min	Max	30 Day Avg	Daily Max
03/31/07	24A	-	1,920	ND	ND	3	7	8.9	0.339	0.501
06/30/07	001A	-	1,820	ND	ND	ND	9	9	0.070	0.070
"	017A	-	2,760	ND	ND	ND	8.2	8.6	0.383	0.457
"	24A	-	2,770	ND	ND	ND	6.7	8.1	0.287	0.393
09/30/07	001A	-	1,720	ND	ND	3	8.8	8.8	0.050	0.050
"	017A	-	2,500	ND	ND	ND	8	8.5	0.263	0.317
"	24A	-	2,370	ND	ND	5	6.7	8.7	0.377	0.473
12/31/07	001A	-	1,700	32	32	3	7	9	0.119	0.176
"	017A	-	2,380	ND	ND	ND	8.3	8.5	0.180	0.200
"	024A	-	2,103	ND	ND	3	7.5	8.9	0.360	0.387
03/31/08	024A	-	2,050	ND	ND	5	7.5	8.9	0.330	0.417
06/30/08	001A	-	2,090	5	5	ND	8.96	8.99	0.011	0.023
"	017A	-	2,287	6	6	5	8.3	8.5	0.230	0.278
"	024A	-	2,157	ND	ND	4	6.22	8.99	0.310	0.423
9/31/08	WH4	-	3,280	ND	ND	ND	7.7	8.2	0.015	0.028
"	001A	-	1,980	ND	ND	ND	8.5	8.95	0.004	0.008
"	015A	-	3,630	5	5	ND	7.5	7.5	0.017	0.017
"	017A	-	2,330	8	8	15, ND	7.8	8.35	0.123	0.237
"	024A	-	2,248	ND	ND	6	6.1	8.37	0.133	0.350
12/31/08	017A	-	2,080	ND	ND	ND	7.5	8.57	0.131	0.213
"	024A	-	2,213	9, 6, ND	9, 6, ND	8	6.99	8.9	0.250	0.420

03/31/09	024A	-	2,810	-	5	ND	8.5	9	0.009	0.420
"	017A	2,073	2,060	ND	ND	ND	7.8	8.5	0.007	0.213
06/30/09	017A	2,053	2,080	ND	ND	ND	8.13	8.38	0.006	0.015
"	024A	2,197	2,250	5	6	ND	7.98	8.9	0.010	0.410
"	015A	3,395	3,490	ND	ND	ND	7.88	8.34	0.004	0.019
09/30/09	017A	2,003	2,010	ND	ND	ND	8.1	8.25	0.173	0.160
"	024A	2,310	2,620	ND	ND	2	7.57	8.9	0.306	0.362
12/31/09	017A	1,977	1,980	4	-	ND	8.05	8.3	0.145	0.172
"	024A	2,093	2,460	10	-	3	8	8.89	0.307	0.362
03/31/10	024A	2,740	2,750	ND	ND	7	7.5	8.9	0.224	0.298
06/30/10	017A	1,953	2,110	3	10	3	8.16	8.55	0.164	0.187
"	024A	2,203	2,720	ND	ND	7	7.88	8.8	0.304	0.341
09/30/10	024A	1,990	2,360	6	12	14	7.6	8.8	0.310	0.330
"	030A	-	1,940	ND	ND	6	8.2	8.1	0.160	0.164
12/31/10	001A	1,840	1,870	-	-	7	8.25	8.65	0.170	0.160
"	024A	2,113	2,170	62	176	15	8	8.89	0.350	0.360
03/31/11	001A	1,827	1,850	2	5	16	8.08	8.93	0.090	0.190
"	015A	-	-	-	-	-	7.74	7.74	0.026	0.026
"	024A	2,360	2,750	4	11	22	7.1	8.93	0.570	0.650
06/30/11	001A	1,877	1,950	1	4	11	8.58	8.95	0.180	0.200
"	015A	-	-	-	-	-	-	-	0.090	0.090
"	024A	2,463	2,660	9	17	9	7.87	8.97	0.570	0.650
09/30/11	001A	1,840	1,950	1	4	5	8.59	8.9	0.180	0.190
"	024A	3,417	3,780	1	4	7	7.55	8.86	0.640	0.660
12/31/11	001A	-	1,920	ND	ND	7	7.31	8.7	0.007	0.008
"	024A	-	3,480	7	-	8	7.67	8.74	0.025	0.026
3/31/12	001A	-	1,830	ND	ND	ND	8.37	8.99	0.09	0.16
"	024A	-	2,950	4	4	9	8.43	8.99	0.61	0.67
6/30/12	001A	-	1,900	11	4	6	8.57	8.88	0.15	0.16
"	024A	-	3,500	14	24	11	8.49	8.95	0.61	0.90
9/30/12	024A	-	3900	5	14	11	8.28	8.95	0.611	0.67
"	001A	-	1820	7	9	-	8.42	8.86	0.086	0.16
12/31/12	024A	-	3900	12	18	15	8.64	8.96	0.611	0.9
"	001A	-	1820	0	0	-	8.85	8.85	0.09	0.16
3/31/13	024A	-	3733	6	7	10	8.22	8.99	0.69	0.7
"	030A	-	1860	-	-	-	8.06	8.58	0.028	0.028
3/31/14	024A	-	4610	11.3	25	-	8.75	8.91	0.65	0.85
6/30/13	001A	-	2100	3	3	-	8.33	8.7	0.12	0.12
"	024A	-	3877	4	3	-	8.28	8.94	0.66	0.66
"	030A	-	1970	-	-	-	8.32	8.58	0.028	0.03
9/30/13	030A	-	1800	1570*	180*	-	8.55	8.98	0.036	0.04
"	024A	-	4590	3	5	-	8.59	9	0.62	0.73



"	001A	-	1800	7	3	-	8.6	8.98	0.07	0.13
12/31/13	024A	-	4170	6.5	6.5	-	8.52	8.91	0.72	0.75
6/30/14	024A	-	4390	10	10	-	8.75	8.95	0.54	0.75
9/30/14	024A	-	5180	-	ND	-	8.59	8.97	0.71	0.79
Max		3,417	5,180	62	176	22	-	9	0.640	0.660
Limit		-	3,500	25	35	10	6.5	9	-	-
# Violations		-	12	2	1	10	2	0	-	-

ND – Not detected / \*reporting error, not included in calculations

**Effluent Limitations – Outfalls 001, 002, 003, 010, 013, 015, 016, 017, 020, 023, 024, 028, 029, 030, 031, 032, 033, 034, 035 and 036.**

The following effluent limitations will be required for each outfall, except Total Dissolved Solids Loading which is a sum of all outfalls:

Effluent Characteristic	30-Day Average	7-Day Daily Average	Daily Maximum
Total Suspended Solids, mg/L	25	35	--
Total Dissolved Solids, mg/L	--	--	3,500
The pH of the effluent shall not be less than 6.5 nor greater than 9.0 in any single sample or analysis.			
The concentration of oil and grease in any single sample shall not exceed 10 mg/L nor shall there be any visible sheen in the receiving water or adjoining shoreline.			
Total Dissolved Solids Loading from all outfalls shall not be greater than an annual total of 1,281 tons/year			
There shall be no discharge of sanitary wastewater, process water or contact cooling water.			

**Self-Monitoring Requirements – Outfalls 001, 002, 003, 010, 013, 015, 016, 017, 020, 023, 024, 028, 029, 030, 031, 032, 033, 034, 035 and 036.**

The following self-monitoring requirements are included for each outfall in this permit:

Effluent Characteristic	Frequency e/	Sample/Monitoring Type a/
Total Flow, mgd b/	Monthly	Instantaneous
Total Dissolved Solids, mg/L	Monthly	Grab
Total Dissolved Solids Loading, tons/year d/	Monthly	Calculation
Total Suspended Solids, mg/L	Monthly	Grab
pH, s.u.	Monthly	Grab
Oil and Grease, visual c/	Weekly	Visual/Grab

a/ See Permit Definitions, Part 1.1, for definition of terms.

b/ Flow measurements of effluent, in million gallons per day, 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 maximum flow rate observed during the reporting period shall be reported.

For intermittent flows, the approximate volume of water discharged per reporting period and maximum rate of discharge shall be reported.

c/ A weekly visual observation is required. Any discharge shall be visually observed for the presence of a visible sheen and/or floating oil. If a visible sheen is detected, a grab sample shall be taken immediately and analyzed in accordance with the requirements of 40 CFR Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

d/ The permittee shall calculate the mass of Total Dissolved Solids discharged from each outfall (using concentration and flow), sum the mass of Total Dissolved Solids for all outfalls, and report in the DMR that sum of Total Dissolved Solids in tons per year. Total loading from all outfalls shall be calculated each month. Total annual loading reported on the DMR must reflect the loading from all outfalls on a rolling annual basis. For example:

$$\text{Daily loading (tons/day)} = \text{Concentration (mg/L)} * (3.785 \text{ gal/L}) / (453,592 \text{ mg/pound}) / \\ (2,000 \text{ pounds/ton}) * \text{flow (gallons/day)}$$

$$\text{Monthly loading (tons/month)} = \text{daily loading (tons/day)} * \text{days/month (days in the month)}$$

$$\text{Annual loading (tons/year)} = \text{sum of the past 12 months of monthly loading}$$

e/ Samples are required when outfalls are discharging. In instances where flow is intermittent, flow measurements should be combined and reported.

### **Basis for Effluent Limitations**

The basis for the effluent limitations in this permit are previous permit limits, National Effluent Guidelines for this industry, Colorado River Basin Salinity Control Forum guidelines, Regional Policy, and Best Professional Judgment (BPJ). The Oil and Grease limit is based on EPA Regional Policy. The limitation of 10 mg/L is commonly used in EPA permits and in Tribal permits as a concentration which can have detrimental impacts to impact aquatic life.

A further justification of the Total Dissolved Solids (TDS) limitations, Total Suspended Solids (TSS) limitations, and prohibition of process water discharges is provided in the following text.

### **Total Suspended Solids (TSS):**

The TSS 25mg/L monthly average and 35 mg/L weekly average are based on technology-based effluent limits for all dischargers. These specific limitations 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 were retained when EPA issued the permit and are retained in today's permit due to "anti-backsliding" regulations. In general, the term "anti-backsliding" refers to a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluents limits, permit conditions, or standards that are less stringent than those established in the previous permit. Specifically, Section

402(o)(1) of the Clean Water Act establishes a broad prohibition against relaxing effluent limits that are based on either best professional judgment (BPJ) or state water quality standards, except as expressly provided. Regardless, the practice of placing technology-based effluent limits for total suspended solids for all dischargers is consistent with the permitting approach used for industrial point source dischargers in EPA Region 8.

#### **No Discharge of Sanitary Wastewater, Process Water, or Contact Cooling Water:**

This permit specifies that there shall be no discharge of sanitary wastewater, process water or contact cooling water. This effluent limitation is based on Effluent Guidelines. The Standard Industrial Classification (SIC) code for the AGC facility is 1499, "Miscellaneous Nonmetallic Minerals, Except Fuels" and is covered under the effluent limitation guidelines at 40 Code of Federal Regulations (CFR) §436.60 "Mineral Mining and Processing Point Source Category – Subpart F - Asphaltic Minerals." In accordance with 40 CFR§436.62 (Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available), "there shall be no discharge of process generated waste water pollutants into navigable waters." The American Gilsonite Company Bonanza Mine does not discharge process wastewater.

#### **Total Dissolved Solids (TDS):**

This permit contains an end-of-pipe effluent limit of 3500mg/L TDS for all outfalls. This limit was included in the permit issuance in 1998 based on current and projected loading from the American Gilsonite Bonanza mine. This production-based technology limitation is retained in this permit reissuance due to "anti-backsliding" regulations.

Suspended solids, dissolved solids, and turbidity are important parameters in both municipal and industrial water supply practices. The EPA maintains water quality criteria for TDS of 250mg/L for "Human Health for the consumption of Organism Only" (*EPA Quality Criteria for Water, EPA 440/5-86-001, May 1, 1986*, also known as the "Gold Book Criteria"). The *Gold Book Criteria* provides the following basis for this limit: "This limit is based on health considerations as it relates to effective chlorine disinfection. Suspended matter provides areas where microorganisms do not come into contact with the chlorine disinfectant, and the ability of common wastewater treatment processes (i.e., coagulation, sedimentation, filtration, and chlorination) to achieve acceptable final turbidities is a function of the composition of the material as well as its concentration." Given that there are no drinking water uses on the White River, a more stringent concentration-based water quality limit for TDS was not included in this permit.

When establishing numeric criteria, there are three approaches that can be used:

- 1) Calculate allowable loading utilizing promulgated water quality standards;
- 2) Calculate allowable loading utilizing recommended water quality criteria modified to reflect site-specific conditions; or
- 3) Adopt criteria derived using other scientifically defensible methods.

While this permit reissuance does not include a concentration-based water quality limitation for TDS, this limit could be considered in the reissuance of this permit should water quality standards or criteria be developed for TDS. Alternatively, should additional geographically-specific data on the tolerance of aquatic life to dissolved solids be presented, this could be considered in the evaluation of a more stringent TDS limit. Specific data which correlate to this permit were not readily available in EPA's

ecoregion criteria for the xeric west to support a more stringent TDS limitation (*Ambient Water Quality Criteria Recommendations – Information Supporting the Development of State and Tribal Nutrient Criteria – Rivers and Streams in Nutrient Ecoregion II – EPA 822-B-B-00-016, December 2000*)

### **Total Dissolved Solids (Annual Loading):**

Salinity impacts have been a major concern in the United States and Mexico. The salinity of the Colorado River increases as it flows downstream. The salts in the Colorado River system are naturally occurring and pervasive. Many of the saline sediments of the Basin were deposited in prehistoric marine environments. Salts contained within the sedimentary rocks are easily eroded, dissolved, and transported into the river system. The Colorado River has carried an average salt load of approximately 9 million tons annually past Hoover Dam, the uppermost location at which numeric criteria have been established. In 1973, the Colorado River Basin States came together in 1973 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 in the passage of the Colorado River Basin Salinity Control Act (Act). Since implementation of the Program, measures have been put in place which now reduce the annual salt load of the Colorado River by more than 1.3 million tons. The salinity concentration at Imperial Dam has been reduced by about 90 mg/L. However, even with these efforts the quantified damages to U.S. users are still approximately \$382 million per year. Damages are projected to increase to \$614 million per year by 2035 if the Program does not continue to be aggressively implemented. (*Source: Colorado River Basin Salinity Control Forum - coloradoriversalinity.org*)

In order for a permittee to be in compliance with the industrial criteria of the Colorado River Basin Salinity Control Forum, industrial users may not discharge more than 1.00 tons/day or 366 tons/year of dissolved solids. However, there are variances that can be applied to these criteria based on cost and the connectivity of intercepted groundwater. EPA issued a permit on June 9, 1983 which provided a 2.0 ton/day limit for TDS. This limit was based on a January 28, 1978 report from American Gilsonite Company which summarized all existing discharges from the Bonanza Mine at 654 tons/year equating to 1.8 tons/day. This report was considered more accurate than the monitoring data submitted through the facility's NPDES permit, and a 2.0 ton/day limit was proposed. When the permit was reissued on February 11, 1988, AGC was required to submit a study indicating compliance with the Colorado River Basin Salinity Control Forum's 1982 Intercepted Ground Water Policy within 30 days of the permit issuance.

When the permit was reissued by the State of Utah on December 10, 1997, the facility was provided with an additional increase in their TDS limit from 2.0 tons per day to 3.5 tons per day. The rationale for this increase was that the volume of groundwater increased due to increased mine activity, and this corresponded to an increase in the salinity of the intercepted ground water. The permittee conducted a ground water study of the discharge pursuant to the Colorado River Basin Salinity Control Forum guidelines and requested a TDS increase from the 2.0 Ton per day limit to 3.5 ton per day limit. This request was deemed appropriate and included in the renewal permit issued on December 10, 1997.

There has been no reporting of TDS loading (tons/day) in the DMR data for this permit as this parameter has been inadvertently omitted from Discharge Monitoring Report (DMR) forms in the past. However, a review of the DMR data indicates that the TDS loading limits are being violated. Using the DMR data reported on September 30, 2011, loading from Outfall 024 averaged 9.1 tons per day during the quarterly reporting period.

*Concentration* →  $3417 \text{ mg/L} * (3.785 \text{ L/gal}) / (453,592 \text{ mg/pound}) = 0.0285 \text{ pounds TDS/gal}$

*Loading* →  $0.0285 \text{ lb/gal} * 640,000 \text{ gal/day} / (2,000 \text{ lb/ton}) = 9.1 \text{ tons/day TDS}$

The permittee has indicated that as the mining operation excavates deeper, greater amounts of groundwater are being encountered. The impact of these increased discharges are exacerbated by the increased salinity of the groundwater being encountered. Using the DMR data reported on 9/30/2014, loading from Outfall 024 averaged 15.3 tons per day during the quarterly reporting period.

*Concentration* →  $5180 \text{ mg/L} * (3.785 \text{ L/gal}) / (453,592 \text{ mg/pound}) = 0.0432 \text{ pounds TDS/gal}$

*Loading* →  $0.0432 \text{ lb/gal} * 710,000 \text{ gal/day} / (2,000 \text{ lb/ton}) = 15.3 \text{ tons/day TDS}$

The AGC Bonanza mine is violating TDS loading limits, but these violations have not been recognized in DMRs, since they have not been included in DMR forms in the past. This permit reissuance changes the TDS loading limit from a daily loading limit to an annual loading limit consistent with the Colorado River System water quality standards for salinity prepared by Colorado River Basin Salinity Control Forum which allows for a limitation on TDS discharges based on either a daily loading or annual loading (calculated based on 366 days/year). The limit of 1,281 tons/year of TDS from all outfalls corresponds to a daily loading of 3.5 tons/year ( $1,281 = 3.5 * 366$ ). This annual loading limit is calculated as a rolling annual average and is reported quarterly. An annual limit is used in this permit as opposed to a daily limit as the monthly monitoring schedule provides data on monthly flow and concentration averages. These data better represent annual loading as they may not capture minor fluctuations recognized on a daily basis.

### **Reporting Requirements**

Effluent monitoring results obtained during the previous three (3) months shall be summarized and reported on **one** Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28 day of the month following the reporting period. If no discharge occurs during the reporting period, “no discharge” shall be reported.

### **Inspection Requirements**

Part 1.3.3 of the permit has inspection requirements for the wastewater treatment facilities and outfalls on at least a weekly basis. The basic intent of the inspection requirements is to ensure that the permittee is maintaining the integrity and operating capabilities of the treatment and discharge systems. If problems are observed, the permittee is expected to take the appropriate corrective measures. The inspection shall also be conducted to determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to or needs to occur before the next inspection. A log shall be maintained of inspections, observations, and corrective actions taken and must be available to inspectors upon request.

### **Storm Water Requirements**

The storm water requirements for this facility are contained in Parts 4 and 5 of the permit and are based upon the Storm Water Pollution Prevention Plan (SWPPP) submitted in September 2006 and since amended as necessary to account for changes in design, construction, operation, or maintenance which have had a significant effect on the potential for the discharge of pollutants in storm water runoff.

### **Endangered Species Act (ESA) Requirements**

Section 7(a) of the Endangered Species Act requires federal agencies to insure that any actions authorized, funded, or carried out by an Agency are not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species. Federally listed threatened, endangered and candidate species found in Uintah County, Utah include:

<b><u>Group</u></b>	<b><u>Species</u></b>	<b><u>Status</u></b>
Bird	Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )	C
Bird	Greater Sage-grouse ( <i>Centrocercus urophasianus</i> )	C
Bird	Mexican Spotted Owl ( <i>Strix occidentalis lucida</i> )	T
Fishes	Humpback chub ( <i>Gila cypha</i> )	E
Fishes	Colorado Pikeminnow ( <i>Ptychocheilus lucius</i> )	E
Fishes	Bonytail chub ( <i>Gila elegans</i> )	E
Fishes	Razorback sucker ( <i>Xyrauchen texanus</i> )	E
Flowering Plants	Graham beardtongue ( <i>Penstemon grahamii</i> )	PT
Flowering Plants	Shrubby reed-mustard ( <i>Schoenocrambe suffrutescens</i> )	E
Flowering Plants	White River beardtongue ( <i>Penstemon scariosus albifluvis</i> )	C
Flowering Plants	Ute ladies'-tresses ( <i>Spiranthes diluvialis</i> )	T
Flowering Plants	Clay reed-mustard ( <i>Schoenocrambe argillacea</i> )	T
Flowering Plants	Pariette cactus ( <i>Sclerocactus brevispinus</i> )	T
Flowering Plants	Uinta Basin hookless cactus ( <i>Sclerocactus wetlandicus</i> )	T
Mammals	Canada Lynx ( <i>Lynx canadensis</i> )	T

*E = Endangered, T = Threatened, C = Candidate, CH = Critical Habitat, PT = Proposed Threatened*

The EPA finds that this permit is Not Likely to Adversely Affect any of the species listed by the US Fish and Wildlife Service under the Endangered Species Act. This facility discharges from numerous outfalls to unnamed tributaries of Coyote Wash, a tributary to the White River, which flows into the Green River. The permit limitations are protective of water quality and flows are expected to not be excessive.

### **National Historic Preservation Act (NHPA) 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 EPA has evaluated its planned issuance of the NPDES permit for the American Gilsonite Bonanza mining site to assess this action's potential effects on any listed or eligible historic properties or cultural resources. The EPA does not anticipate any impacts on listed/eligible historic properties or cultural resources.

### **Public Notice**

This permit was public noticed in the Ute Bulletin on December 19, 2014, and the Vernal Express on December 30, 2014. Notification of this public notice was provided to the EPA Region 8 Interested Parties list for the State of Utah. Both public comment periods closed on February 1, 2015. Comments were received from one entity representing the Utah Division of Water Quality, Department of Environmental Quality, and the Colorado River Basin Salinity Control Forum Workgroup's NPDES (National Pollutant Discharge Elimination System) Subcommittee. A response to the comments received from that entity follow.

## Comment 1:

*Discharge Monitoring Report (DMR) data from 2011-2013, as reported by EPA to the Colorado River Basin Salinity Control Forum (CRBSCF) Workgroup's NPDES Subcommittee as part of the CRBSCF 2014 Review, reveals an average TDS loading of 4.357 tons/day, which is above the 1 ton/day CRBSCF Policy default limitation. In addition, on page 12 of the EPA Statement of Basis, TDS loading from Outfall 024 averaged 9.1 tons/day during the quarterly monitoring period as reported by the facility to EPA on September 30, 2011. Without further justification to demonstrate an exemption, the TDS effluent loading from this facility appears to be in long standing violation of CRBSCF Policy.*

## Response:

When this permit was reissued by the State of Utah on December 10, 1997, the facility was provided with an additional increase in their TDS limit from 2.0 tons per day to 3.5 tons per day. This was based on a groundwater study submitted based on the CRBSCF guidelines. This permit continues the limitation allowing 3.5 tons per day TDS based on the request which was deemed appropriate in 1997, and compliance is being based on the 3.5 ton per day limitation. Based on reporting from the facility, TDS loading from Outfall 024 is in violation of this 3.5 ton per day limitation. The EPA has recently inspected this facility and remains in contact with facility operators. The EPA is aware of violations of this limit that have occurred and continue to occur, and appropriate enforcement actions are currently being evaluated.

## Comment 2:

*As stated on page 12 of the EPA Statement of Basis, there has been no previous reporting of TDS loading data, as required by CRBSCF Policy, due to this parameter being inadvertently omitted from DMR forms in the past. This also appears to be in long standing violation of CRBSCF Policy.*

## Response:

This has been corrected in this re-issuance of the permit. An effluent limitation has been added such that Total Dissolved Solids loading from all outfalls shall not be greater than an annual total of 1,281 tons per year. This is calculated on a rolling annual basis and reported quarterly with each quarterly Discharge Monitoring Report Submitted to EPA. The self-monitoring requirements in the permit define how this is calculated as follows:

In addition to the monthly sample, the permittee shall calculate the mass of Total Dissolved Solids discharged for each outfall (using concentration and flow), sum the mass of Total Dissolved Solids for all outfalls, and report in the DMR that sum of Total Dissolved Solids in tons per year. Total loading from all outfalls shall be calculated each month. Total annual loading reported on the DMR must reflect the loading from all outfalls on a rolling annual basis. For example:

$$\text{Daily loading (tons/day)} = \text{Concentration (mg/L)} * (3.785 \text{ gal/L}) / (453,592 \text{ mg/pound}) / (2,000 \text{ pounds/ton}) * \text{flow (gallons/day)}$$

$$\text{Monthly loading (tons/month)} = \text{daily loading (tons/day)} * \text{days/month (days in the month monitored)}$$

$$\text{Annual loading (tons/year)} = \text{sum of the past 12 months of monthly loading}$$

## Comment 3:

*Also on page 12 of the EPA Statement of Basis, reference is made to the completion of two groundwater studies, once in 1988 and again in 1997, that were to be submitted as a demonstration to allow for TDS loading in excess of the 1 ton/day CRBSCF Policy limitation. Without a copy of either study, a more current review cannot be performed and therefore a current determination cannot be made as to the appropriateness of an exemption to the 1 ton/day CRBSCF Policy limitation. A more current groundwater study and/or demonstration of (non) practicability to the CRBSCF Policy is necessary to justify any exemption to the 1-ton/day or 366 tons/years limitation.*

## Response:

A requirement to re-evaluate this and provide an updated report consistent with CRBSCF policy has been added to this permit. Once this report is submitted to EPA, it will be made available to the commenter as part of the Administrative Record for this permit. The requirement to submit this report has been added to Part 1.4 of the final permit and reads as follows:

- 1.4. Intercepted Groundwater Report. Within 30 days of the effective date of this permit, the permittee shall submit a report to the EPA justifying the continuance of the limitation of 3.5 tons of Total Dissolved Solids being discharged per day from the facility. This report must meet all of the Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program for Intercepted Ground Water Adopted by the Colorado River Basin Salinity Control Forum. This policy is included for reference in its entirety in the Statement of Basis for this permit. This permit may be re-opened to reduce the allowable loading of Total Dissolved Solids from 3.5 tons per day if the requirements for waiving the one ton per day limitation consistent with the aforementioned policy are not met.
- 1.4.1. Intercepted Groundwater Report Contents. The permittee is required to submit the following information:
- Description of the topography, geology, and hydrology. Such information must include the location of the development, direction and rate of ground-water flow, chemical quality and quantity of ground water, and relevant data on surface streams and springs that are or might be affected. This information should be provided for the conditions with and without the project.
  - Alternative plans that could substantially reduce or eliminate salt discharge. Alternative plans must include:
    - Descriptions of water rights, including beneficial uses, diversions, and consumptive use quantities;
    - Descriptions of alternative water supplies, including provisions for water reuse, if any;
    - Descriptions of quantity and quality of the discharge;



- Descriptions of how salts removed from discharges shall be disposed of to prevent their entering surface waters or ground-water aquifers;
- The technical feasibility of the alternatives;
- Total construction, operation, and maintenance costs; and costs in dollars per ton of salt removed from the discharge;
- Closure plans to ensure termination of any proposed discharge at the end of the economic life of the project; and
- A statement as to the one alternative plan for reduction of salt discharge that the applicant recommends be adopted, including an evaluation of the technical, economic, and legal Practicability of achieving no discharge of salt

1.4.2. Intercepted Groundwater Submittal. Legible copies of this report shall be signed and certified in accordance with the Signatory Requirements (see Part 6.7), and submitted to the EPA Region 8 Policy, Information Management & Environmental Justice Program and the Ute Tribe at the addresses provided in Part 2.4.

Comment 3:

*Why is there not a maximum daily Flow limit being included in this permit renewal?*

Response:

Flow limitations are often appropriate in order to determine whether a permittee is exceeding the design capacity of a treatment system such as a wastewater treatment plant which has relatively consistent flows and relatively consistent pollutant concentrations in the discharge. This is not the case with the discharge from this facility. This facility has a high degree of variation in its discharge quantities (i.e., flow), and this facility also has a high degree of variation in the concentration of pollutants (most notably total dissolved solids) being discharged. Therefore, it was not possible to include a flow limitation which correlates to water quality. Regardless, monitoring of flow is required (see Part 1.3.2), and flow data from the facility can be considered for development of future effluent limits should it be recognized that specific flows from this facility have a reasonable potential to cause or contribute to a violation of water quality standards.

Comment 4:

*The TDS concentration limit is proposed at 3,500 mg/L as a daily maximum limit. Was the Utah State Water Quality Standard of 1,200 mg/L considered in the development of this limit? Or was the impact of elevated salinity discharges evaluated for potential downstream impacts, such as through a waste load allocation process or anti-degradation review?*

Response:

The Utah Water Quality Standards do not apply in Indian country, and there are no tribal water quality standards at this time for Coyote Wash, which is located in Indian country. An effluent limitation for TDS was not feasible to calculate based on meeting the State's water quality standard of 1,200 mg/L at

that point where the White River crosses from Indian country into the State of Utah. The discharge infiltrates into Coyote Wash where there is periodic infiltration during the approximate 15 mile distance of surface flow prior to reaching the White River. After the discharge reaches the White River, significant dilution occurs prior to reaching the Utah border.

Comment 5:

*DEQ and local Health Department staff are in support of moving the discharge off the highway, and appreciate the improvements that American Gilsonite has made to their pH adjustment process, which appears to work better than before, as observed by DEQ and local Health Department staff.*

Response:

This permit provides additional flexibility such that outfall locations may be combined or deleted or moved up to 1,320 feet to accommodate conditions in the field without modifying this permit provided that the new outfall location discharges to the same immediate receiving water, notification is provided to EPA prior to moving the outfall, and the notification is signed by the appropriate signatory authority. It is believed that this will help American Gilsonite to make future modifications to outfall locations rapidly in an effort to address similar concerns.

Comment 6:

*DEQ and local Health Department staff are willing to occasionally take grab samples from the main discharge and could forward the results to EPA, as they have been visiting the site and sampling that discharge approximately yearly anyway in response to complaints as received, which are independent of any EPA compliance activities.*

Response:

These monitoring results would be appreciated in an effort to fully ascertain potential impacts of the discharge from this facility. Since these data would not be directly related to permit compliance, it is advised that the data not be sent to the address noted in the permit for submittal of Discharge Monitoring Reports. Instead, data can be sent directly to the permit writer at the following address. In the event that the specific permit writer is not immediately available, the data will be forwarded to the appropriate contact in the NPDES program for inclusion in the Administrative Record of the permit.

Greg Davis  
EPA Region 8 NPDES Program  
Mailcode: 8P-W-WW  
1595 Wynkoop Street  
Denver, CO 80202-1129

### **Miscellaneous**

The permit will be issued for a period of approximately 5 years, but not to exceed 5 years, with the permit effective date and expiration date determined at the time of permit issuance.

Permit drafted by Craig Jorgenson and modified by Greg Davis, 8P-W-WW, EPA Region 8.

Permit reviewed by Robert Shankland, SEE, 8P-W-WW, EPA Region 8.

Permit reviewed by Bruce Kent, 8P-W-WW, EPA Region 8.