

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

PERMITTEE: Westmoreland Absaloka  
Mining LLC

FACILITY NAME AND  
ADDRESS: Absaloka Mine South  
Extension  
1601 Lewis Ave., Suite 112,  
Billings, MT 59102

PERMIT NUMBER: MT-0030783

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PERMIT TYPE: Minor, Permit Renewal,  
Industrial/Industrial  
Stormwater

FACILITY LOCATION: 45.7670° N, 107.0480° W

## 1 INTRODUCTION

This statement of basis (SoB) is for the issuance of a National Pollutant Discharge Elimination System (NPDES) permit (the Permit) to Westmoreland Mining Resources LLC for the Absaloka Mine South Extension (Facility). The Permit establishes discharge limitations for any discharge of wastewater from the Facility through its 24 outfalls to various receiving waters (Table 1). 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 Crow Reservation. EPA Region 8 is the permitting authority for facilities located in Indian country, as defined in 18 U.S.C. § 1151, located within Region 8 states and implements federal environmental laws in Indian country consistent with the [EPA Policy for the Administration of Environmental Programs on Indian Reservations](#) and the federal government's general trust responsibility to federally recognized Indian tribes.

## 2 MAJOR CHANGES FROM PREVIOUS PERMIT

Major changes from the previous permit include the following:

- pH effluent limitations have been modified in the Permit.
- Dissolved iron effluent limitations and monitoring requirements have been removed from the Permit.
- Total iron effluent limitations have been modified in the Permit.
- Oil and grease effluent limitations have been modified in the Permit.
- Monitoring requirements for additional metals have been added to the Permit.
- Monitoring requirements for total dissolved solids have been added to the Permit.
- Monitoring requirements for hardness have been added to the Permit.
- Monitoring requirements for nutrients have been added to the Permit.
- Additional conditions have been added to the annual reporting requirements.
- An additional best management practice for aqueous film forming foam has been added to the Permit.

## 3 BACKGROUND INFORMATION

In 2009, Westmoreland Resources, Inc. initiated an expansion of its existing Absaloka Mine surface coal mining operations in the state of Montana onto Indian country lands within the exterior boundaries of the Crow Indian Reservation. This expansion of the surface coal mining operation is permitted through the Office of Surface Mining, Reclamation, and Enforcement (OSMRE) under Surface Mining Permit MT-0021C (originally MT-0021A, but updated each renewal with a progressing letter at the end). Expansion of the mining operations into Indian country also required issuance of a Clean Water Act, Section 402 National Pollutant Discharge Elimination System (NPDES) permit by the Environmental Protection Agency (EPA) for discharges associated with the mining operations to waters of the United States in Indian country. In 2019, Westmoreland Resources, Inc. sold the mining interest to Westmoreland Absaloka Mining, LLC and the previous permit was transferred from Westmoreland Resources, Inc. to Westmoreland Absaloka Mining LLC.

The Permit authorizes Westmoreland Absaloka Mining, LLC to discharge pollutants to waters of the U.S. from the active coal mining area and mine drainage from reclamation areas, brushing and grubbing areas, topsoil and stockpiling areas, and re-graded areas in accordance with the discharge locations, effluent limitations, monitoring requirements, and other conditions as prescribed in the Permit. The Facility is subject to the Effluent Limitation Guidelines (ELGs) found under 40 CFR Part 434 (Coal Mining Point Source Category).

The Facility is an expansion of the Westmoreland Absaloka Mine located immediately north of the Facility, outside the boundary of the Crow Reservation. That mine is permitted by the Montana Department of Environmental Quality through NPDES permit MT-0021229 and has been operating since 1974.

The previous permit authorized mine drainage from the Absaloka Mine South Extension at 24 outfalls, and these 24 outfall locations are also authorized in the Permit. No new outfalls are being added. The following outfall locations reflect the location data provided by the Permittee in their 2019 permit application (Table 1). The Permittee also noted that several of the outfalls (Outfalls 007, 009, 011, 012, 013, 016, 018, 019, 021, and 023) are “inactive” at this time, meaning that the outfall/sediment pond has not yet had runoff routed to it.

The Facility sits at approximately 3,600 feet above sea level and has a semi-arid climate, typical of eastern Montana. Winters are typically cold with some snow, and summers are typically hot and dry. Average annual precipitation at the mine is approximately 15 inches per year. Most runoff in the area occurs either in early spring due to snowmelt or rain on frozen ground events, or in late spring and early summer due to heavy precipitation events.

**Table 1. Outfall Locations and Descriptions**

<b>Outfall Number</b>	<b>Latitude (°N)</b>	<b>Longitude (°W)</b>	<b>Description</b>	<b>Receiving Water</b>
001	45.7617	107.0433	Stormwater runoff and mine drainage	Middle Fork Sarpy Creek
002	45.7567	107.0386	Stormwater runoff and mine drainage	Unnamed Tributary to Middle Fork Sarpy Creek
003	45.7558	107.0375	Stormwater runoff and mine drainage	Unnamed Tributary to Middle Fork Sarpy Creek
004	45.7542	107.0367	Stormwater runoff and mine drainage	Middle Fork Sarpy Creek
005	45.7522	107.0314	Western Alkaline Coal Mining drainage	Unnamed Tributary to Middle Fork Sarpy Creek
006	45.7508	107.0383	Western Alkaline Coal Mining drainage	Unnamed Tributary to Middle Fork Sarpy Creek
007	45.7553	107.0403	Stormwater runoff and mine drainage	Unnamed Tributary to Middle Fork Sarpy Creek
008	45.7575	107.0431	Stormwater runoff and mine drainage	Unnamed Tributary to Middle Fork Sarpy Creek
009	45.7614	107.0447	Stormwater runoff and mine drainage	Middle Fork Sarpy Creek
010	45.7461	107.0589	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek

<b>Outfall Number</b>	<b>Latitude (°N)</b>	<b>Longitude (°W)</b>	<b>Description</b>	<b>Receiving Water</b>
011	45.7464	107.0669	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
012	45.7469	107.0703	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
013	45.7475	107.0733	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
014	45.7478	107.0800	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
015	45.7536	107.0728	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
016	45.7533	107.0672	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
017	45.7544	107.0681	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
018	45.7569	107.0694	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
019	45.7578	107.0733	Western Alkaline Coal Mining drainage	Unnamed Tributary to Sarpy Creek
020	45.7589	107.0739	Western Alkaline Coal Mining drainage	Unnamed Tributary to Sarpy Creek
021	45.7600	107.0731	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
022	45.7606	107.0747	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek
023	45.7633	107.0792	Western Alkaline Coal Mining drainage	Unnamed Tributary to Sarpy Creek
024	45.7650	107.0792	Stormwater runoff and mine drainage	Unnamed Tributary to Sarpy Creek

The authorization to discharge under the Permit is limited to these specific outfalls. However, EPA recognizes that facility operations are constantly moving along the coal seam, 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 an 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 1,000 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 coal seam and incorporates the same treatment processes;
4. Modification of the outfall location does not affect nearby landowners; and
5. Notification of the change in outfall location is provided to EPA, followed by EPA's approval, prior to any discharges to the modified outfall location.

### 3.1 Facility Process Description

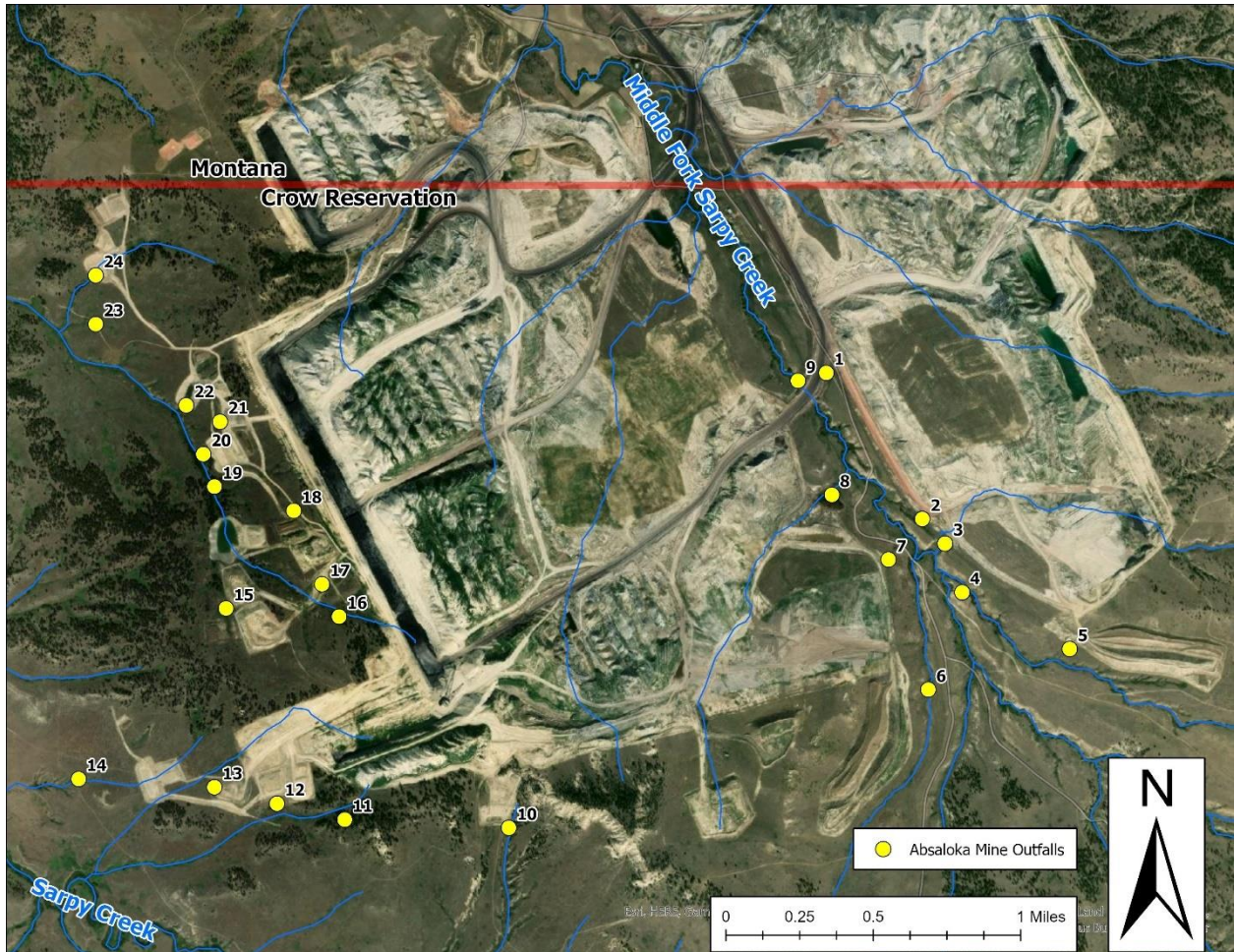
The Facility is an open pit surface coal mine. Discharges associated with the Facility are due to either precipitation-based/snowmelt events causing runoff that collects in the open pit, or due to groundwater that infiltrates into the open pit. As the stormwater flows through disturbed areas containing bare soils and overburden, suspended solids are entrained in the runoff. The Facility has built multiple unlined stormwater retention ponds and sediment traps (Figure 1), and these are used to collect runoff and water from pit dewatering activities, and to allow settling of sediment to remove it from the discharge. Typically, the water captured in these sediment ponds either evaporates or infiltrates over time. Discharges occur when the ponds fill up and must discharge to surface water. This is an extremely rare event, not having happened since spring of 2019. The Facility is located in an area with a low groundwater table, and thus rarely encounters groundwater, but occasionally the coal seam lies within the groundwater table, and the Facility must pump this water into one of the stormwater ponds and/or discharge the groundwater. The Facility has mobile diesel pumping units that can be moved around the site as needed.

According to the Permittee, mine operators make a significant effort to avoid discharges. They build oversized retention/sediment ponds with a large surface area to aid in evaporation. Much of the runoff that they capture in the sediment ponds is used by the Permittee for dust suppression by spraying it on roads and other conveyances in the active mining area.

The total permitted area encompasses 3,317 acres. According to the Permittee, as of 2022, there are approximately 1,711 disturbed acres and 457 graded acres in the active mining area. Annual coal production has been approximately one to two million tons in the past 2-3 years, down from closer to 7 million tons before 2019. This decrease in production has resulted in the life expectancy of the mine increasing by a few years. The Permittee estimates that active mining at the Facility will conclude in the next three to five years, followed by another several years for reclamation activities.

During the mining process, topsoil is stripped and stored in stockpiles for later use in reclamation activities. The overburden (the rock and dirt that lies above the coal seam but below the topsoil) is then stripped separately. The overburden may be temporarily stored in overburden piles initially, but it is continuously used to fill in the empty pit where coal has been removed. During reclamation, the replaced overburden is typically graded to approximate the original land contour and scarified to relieve compaction. Topsoil is then redistributed and revegetated to complete reclamation.

Figure 1. Facility Map



### 3.2 Treatment Process

Stormwater ponds and sediment traps are the only treatment used at the Facility (Figure 1). Runoff is directed to these ponds and may be discharged if the ponds fill up. These ponds provide retention time for suspended sediment to settle out of the water column prior to discharge. Discharges are relatively rare at the Facility. Since completing most of their stormwater ponds in 2019, the Permittee has reported no discharges.

### 3.3 Chemicals Used

The Facility discharges mine drainage due to stormwater runoff and groundwater dewatering. The Facility does not add to or treat this water with any chemicals. The Facility uses “ANFO” (ammonium nitrate/fuel oil) for blasting. ANFO is the most commonly used bulk industrial explosive in North America. According to Wikipedia, it consists of 94% porous pelletized ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ), which acts as the oxidizing agent and absorbent for the fuel, and 6% number 2 fuel oil.

Additionally, according to the Facility, they have aqueous film forming foam (AFFF) on-site for fire suppression, but it has never been used. They formerly added surfactants to the water used in dust suppression activities until about 2017, when they switched to just water (which they obtain from their sedimentation basins/retention ponds to minimize discharges).

#### **4 PERMIT HISTORY**

According to EPA records maintained for the Facility, this renewal is the 3<sup>rd</sup> issuance of this NPDES permit. The original permit was issued by EPA in 2009. The previous permit for the Facility became effective on October 1, 2014, and was set to expire on September 30, 2019. The Facility submitted a permit renewal application prior to the permit's expiration, and thus the previous permit was administratively continued.

On October 31, 2019, EPA was notified of the purchase and sale agreement between Westmoreland Absaloka Mining LLC and Westmoreland Resources, Inc. The sale agreement satisfied the minor modification permit transfer requirements in 40 CFR § 122.63(d) and thus, effective December 1, 2019, this NPDES permit was transferred to Westmoreland Absaloka Mining LLC.

##### **4.1 Discharge Monitoring Report (DMR) Data**

Most outfalls at the Facility are intermittent discharges that only occur during extreme precipitation events, or snowmelt on frozen ground events. The Facility is designed to store all stormwater associated with the 10-year, 24-hour rain event. During the previous permit cycle (October 2014 to present), the only outfalls to report a discharge and collect samples were Outfalls 008 and 017 (there were two other discharges that happened so quickly the Facility was unable to get a sample – see section 4.2). Outfalls 008 and 017 each reported a single discharge event in March 2019 due to a rapid snowmelt event that occurred on frozen ground. The Facility's DMR data for this single event at the two outfalls is summarized in Table 2. During this time period, the Facility reported an excursion at each of the two outfalls for the 30-day average dissolved aluminum permit limit of 87 µg/L, and one excursion of the 30-day average for TSS. The Facility noted in both cases that their discharge lasted for approximately 24 hours and therefore does not truly represent a 30-day average value – the discharge value for the rest of the month was zero. They were unable to take a second sample to average out due to the short duration of the discharge, and they chose not to arbitrarily pump the ponds out to get a second sample. None of these resulted in any excursions of the daily max permit limits.

**Table 2. Summary of the March 2019 Discharge Event for Outfalls 008 and 017 from EPA Integrated Compliance Information System (ICIS) database (date accessed November 2022)**

Parameter	Permit Limit(s)	Reported Average	Reported Range	Number of Data Points <u>a/</u>	Number of Excursions
Discharge Rate, gallons per minute (gpm)	N/A	49	20-78	2	N/A
Aluminum, Dissolved, 30-day Average, $\mu\text{g/L}$	87	100	100-100	2	2
Aluminum, Dissolved, Daily Max, $\mu\text{g/L}$	750	100	100-100	2	0
Iron, Dissolved, 30-day Average, $\mu\text{g/L}$	1,000	110	90-130 <u>b/</u>	2	0
Iron, Total, 30-day Average, $\text{mg/L}$	3	1.75	1.74-1.75	2	0
Iron, Total, Daily Max, $\text{mg/L}$	6	1.75	1.74-1.75	2	0
Lead, dissolved, 30-day Average, $\mu\text{g/L}$	10.9	ND	ND	2	0
Oil and Grease, $\text{mg/L}$	10	ND	ND	2	0
pH, standard units	6-9	7.8 <u>c/</u>	7.8 – 7.8	2	0
Solids, Settleable, Daily Max, $\text{mL/L}$	0.5	ND	ND	2	0
Total Suspended Solids (TSS), 30-Day Average, $\text{mg/L}$	35	41	31-51	2	1
Total Suspended Solids, Daily Max, $\text{mg/L}$	70	41	31-51	2	0

a/ One data point from each of the two discharging outfalls.

b/ The March 2019 dissolved iron sample at Outfall 017 was reported in the DMR in the wrong units. The actual sample value of 0.09  $\text{mg/L}$  (verified by the lab report) was reported as 0.09  $\mu\text{g/L}$ . It was corrected in this summary to 90  $\mu\text{g/L}$ .

c/ Median pH.

#### 4.2 Other Facility History

During the previous permitting cycle, the Facility was inspected by EPA in September of 2017. The Facility had not reported any discharges in their DMRs, although they had three discharges in the past three years (March 2014, May 2014, and October 2016). The Facility notified EPA of each discharge and submitted follow-up reports to EPA for the discharge events. The first two happened so quickly that the Permittee was not able to sample before the discharge stopped, while the third was at a soil stockpile, which does not require sampling. Inspection findings included erosion gullies and rills at several different locations, additional best management practices (BMPs) needed to address erosion, ditch routing fixes, certain



inspection requirements not being performed, and additional necessary information required in the annual reports. Some of these findings form the basis for new conditions in the Permit.

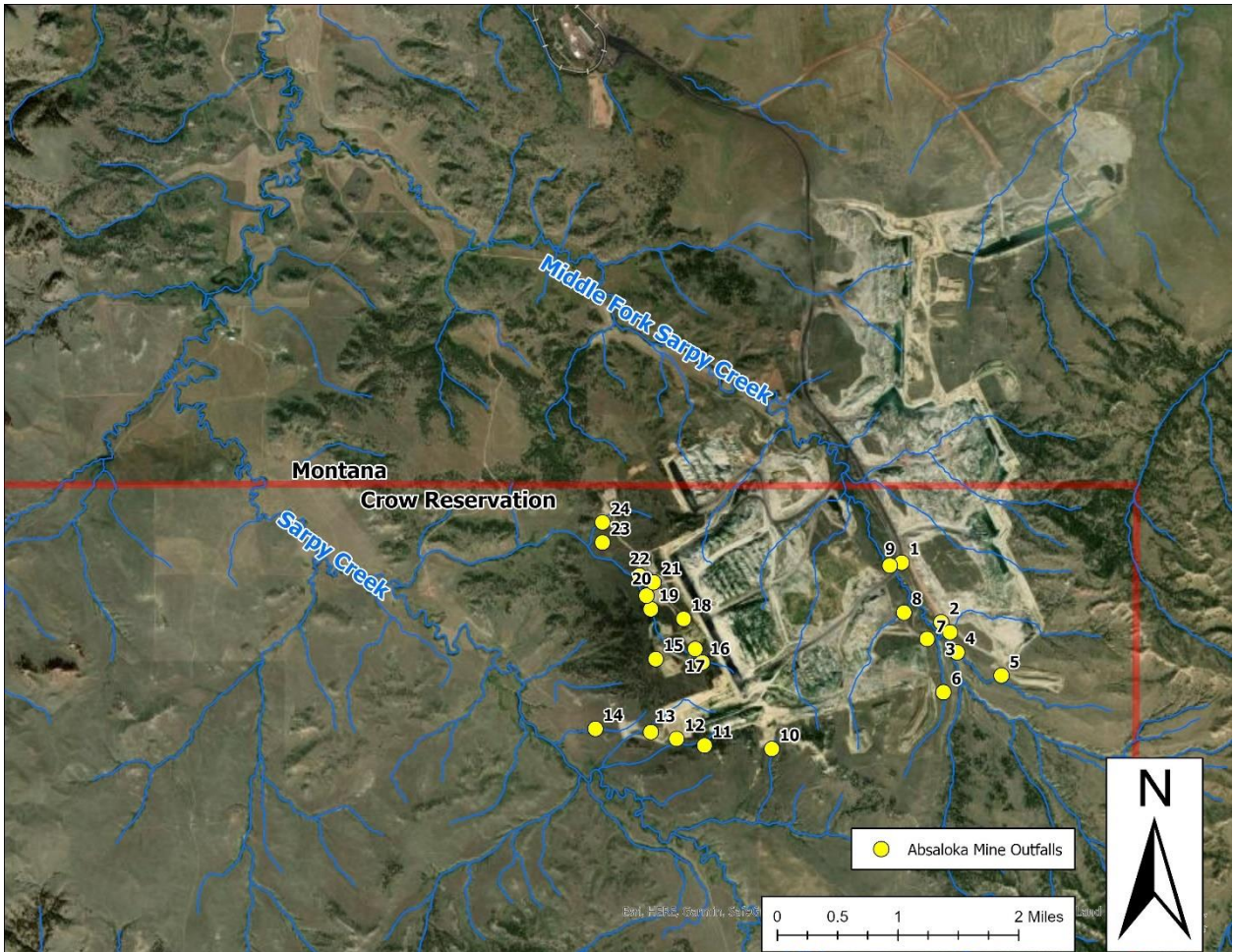
During this permit cycle (October 2014 to present), the Facility has reported three discharge events at four outfalls – discharge from one outfall on October 5, 2016 due to an extreme precipitation event, discharge from one outfall on May 29, 2018 due to an extreme precipitation event, and discharge from two outfalls on March 21, 2019 due to a snowmelt on frozen ground event. The Facility was not able to get samples from the discharges for the first two events due to the short duration of the discharge. The Facility has not reported or observed a discharge event since March 2019.

## **5 DESCRIPTION OF RECEIVING WATER**

The Facility is authorized to discharge at 24 outfalls (Table 1). Three of these outfalls are directly to Middle Fork Sarpy Creek, six outfalls are to unnamed tributaries to Middle Fork Sarpy Creek, and fifteen outfalls are to unnamed tributaries to Sarpy Creek (Figure 2). All receiving waters generally flow north towards Montana. Middle Fork Sarpy Creek flows approximately one mile to the border with the state of Montana, and another five miles before its confluence with Sarpy Creek. Sarpy Creek flows approximately 90 miles from the Reservation boundary to its confluence with the Yellowstone River near Hysham, Montana. According to Facility personnel, the unnamed tributaries remain dry throughout the year unless responding to a snowmelt or precipitation event.

There is limited flow data available for the receiving streams. United States Geological Survey (USGS) maintained a flow gage near the mouth of Sarpy Creek between 1973 and 1984 (USGS gage 06294940, Sarpy Creek near Hysham MT). This flow gage shows a hydrograph typical of prairie streams, with rapid, large increases in flows during snowmelt and heavy precipitation events, followed by long periods of low or zero flow. Flows ranged from zero cubic feet per second (cfs) up to 390 cfs, with a median flow of 0.96 cfs. The gage reported zero flow 28% of the time for the period of record, with ‘zero flow’ periods ranging up to six months of the year in some years. This gage is located near the mouth of Sarpy Creek and has a contributing drainage area of 454 square miles. In the vicinity of the Facility, the contributing drainage areas are much smaller – Sarpy Creek at the Reservation boundary has a contributing drainage area of 32 square miles, and Middle Fork Sarpy Creek at the Reservation boundary has a contributing drainage area of 5.3 square miles. The many unnamed tributaries have a much smaller contributing drainage area. Based on this information, it is likely that the receiving waters have no dilution flow most of the year. The receiving streams are in Hydrologic Unit Code 10100001 (Lower Yellowstone – Sunday).

**Figure 2. Facility Receiving Water**



## 6 PERMIT LIMITATIONS

### 6.1 Technology Based Effluent Limitations (TBELs)

Technology-based effluent limitations and standards are required in NPDES permits under 40 CFR § 122.44(a)(1) based on sections 301, 306, and 402(a)(1) of the Clean Water Act. The coal mining industry is broadly regulated under the effluent limitations guidelines (ELGs) found in 40 CFR Part 434 – *Coal Mining Point Source Category BPT, BAT, BCT Limitations and New Source Performance Standards*. This part applies to “discharges from any coal mine at which the extraction of coal is taking place or is planned to be undertaken and to coal preparation plants and associated areas” (40 CFR § 434.10). There are eight subparts and two appendices to this part; however, only four subparts are relevant to this facility. All are briefly discussed below.

Note that for purposes of translating ELGs, a facility’s status as a ‘new source’ must be determined. The criteria for a new source coal mine are listed in 40 CFR § 434.11(j). The 2009 coal mine expansion was deemed a “new source coal mine” subject to New Source Performance Standards (NSPS) at that time. As such, EPA’s reissuance of an NPDES permit

to this “new source” requires compliance with the NSPS regulations for all discharges and all outfalls associated with the Facility.

6.1.1 Subpart A – General Provisions

Subpart A discusses general applicability and provides a broad list of definitions regarding many terms used throughout the ELG. It does not list any specific requirements but does contain definitions cited throughout the other subsections of 40 CFR Part 434.

6.1.2 Subpart D – Alkaline Mine Drainage

Subpart D is applicable to alkaline mine drainage from an active mining area resulting from the mining of coal of any rank including, but not limited to, bituminous, lignite, and anthracite (40 CFR § 434.40). Alkaline mine drainage is defined as mine drainage which, before any treatment, has a pH equal to or greater than 6.0 and total iron concentration of less than 10 mg/L. Based on water quality samples collected from this mine and other nearby mines, the Facility’s discharges qualify as alkaline mine drainage.

This subpart provides requirements for the application of Best Practicable Control Technology Currently Available (BPT), Best Available Technology Economically Achievable (BAT), and New Source Performance Standards (NSPS) for alkaline mine drainage. As determined above, NSPS requirements for alkaline mine drainage at 40 CFR § 434.45 apply to this facility (Table 3).

**Table 3. NSPS Effluent Limitations for Alkaline Mine Drainage**

Parameter	Average of daily values for 30 consecutive days	Maximum for any 1 day
Iron, total, mg/L	3.0	6.0
Total Suspended Solids (TSS), mg/L	35.0	70.0
pH, standard units	Within the range 6.0 to 9.0 at all times	

6.1.3 Subpart F – Miscellaneous Provisions

This subpart provides several additional provisions, such as commingling of waste streams, alternate effluent limitation for pH, effluent limitations for precipitation events, procedures and method detection limit for measurement of settleable solids, and modification of NPDES permits for new sources. Of particular interest are the subsections discussing commingling of waste streams (40 CFR § 434.61) and alternate effluent limitations for precipitation events (40 CFR § 434.63).

**Commingling of Waste Streams:** Where waste streams from any facility covered by this part are combined for treatment or discharge with waste streams from another facility covered by this part, the concentration of each pollutant in the combined discharge may not exceed the most stringent limitations for that pollutant applicable to any component waste stream of the discharge. EPA has applied this sub-section by developing permit limits separately for each outfall, based on what types of waste each outfall receives.

**Alternate Effluent Limitations for Precipitation Events:** Alternate effluent limitations for discharges caused by precipitation-based events apply to discharges from most alkaline mine drainage (including this Facility). This sub-section includes alternate limits for both small and large precipitation events (Tables 4 and 5). The distinction between small and large precipitation events is that a large precipitation event is greater or equal to the 10 year, 24-hour precipitation event (or snowmelt of equivalent volume). The operator has the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event. According to the NOAA Atlas 2, Volume 1 – Montana Precipitation Map (Figure 27), the 10 year, 24-hour precipitation event in the vicinity of the Facility is approximately 2.48 inches.

**Table 4. Alternate Effluent Limitations for Small Precipitation Events**

Parameter	Effluent Limitations
Settleable Solids (SS), mg/L <sup>a/</sup>	0.5 ml/L maximum not to be exceeded
pH, standard units	6.0 to 9.0 at all times

<sup>a/</sup> ‘Settleable solids’ is that matter measured by the volumetric method specified in 40 CFR § 434.64.

**Table 5. Alternate Effluent Limitations for Large Precipitation Events**

Parameter	Effluent Limitations
pH, standard units	6.0 to 9.0 at all times

6.1.4 Subpart H – Western Alkaline Coal Mining

This subpart provides additional definitions, as well as alternative BPT, BAT, BCT, and NSPS for alkaline mine drainage at western coal mining operations from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas. It applies to alkaline mine drainage from coal mining operations located in the interior of the western United States, west of the 100<sup>th</sup> meridian west longitude, in an arid or semiarid environment with an average annual precipitation of 26.0 inches or less. This facility qualifies as both alkaline mine drainage (see section 6.1.2) and a western coal mining operation under all of these conditions.

Under this subpart the BPT, BAT, and NSPS requirements are the same – all outfalls that discharge from only reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas must submit a site-specific Sediment Control Plan, the watershed model used to acquire the Surface Mining Control and Reclamation Act (SMCRA) permit, and must design, implement, and maintain BMPs in the manner specified in the Sediment Control Plan. No other technology-based limitations or monitoring requirements apply to these outfalls. These effluent limitations apply until the appropriate SMCRA authority has authorized bond release. At that time, the Permittee may request to terminate the corresponding NPDES outfall(s).

Consistent with these requirements, the Permittee submitted a Sediment Control Plan and modeling report to EPA. These reports and other related design documents are included as part of the administrative record. The Sediment Control Plan will be incorporated into the

Permit as an effluent limitation. The Permittee will implement and maintain all procedures, design specifications, and Best Management Practices (BMPs) in accordance with the Sediment Control Plan. Specific BMPs are described in section 5.1 of the Permit and are comprised of requirements from the Sediment Control Plan, observations from EPA inspections, and additional conditions based on professional judgment, but do not supersede the requirement to comply with all the terms of the Sediment Control Plan.

These BMPs will be included in the Permit as a Special Condition (see section 5.1 of the Permit, and section 8 of this document).

- Prohibition of Off-site Sediment Ponds. Control of surface water runoff and associated sedimentation will be accomplished without the use of off-site sediment pond dams.
- Stream Buffer Zones. With the exception of three road and dragline crossings, a minimum distance of 100 feet from the stream channel must be maintained as undisturbed and demarcated with appropriate signs along the Middle Fork of Sarpy Creek.
- Waste, Garbage, and Floatable Debris. All areas within the Middle Sarpy Creek buffer zone shall be kept free of waste, garbage, and floatable debris. Waste, garbage, and floatable debris shall not be discharged beyond the limits of disturbance for the mine.
- Roadway Conveyances. Conveyance structures shall be constructed to route the 10-year, 24-hour storm event to sediment traps and/or along and under roads during mining.
- Road Crossings. Where a conveyance crosses a road, pipe should be of a suitable size to ensure that design capacity can be maintained.
- Unlined Ditch Design and Maintenance. Unlined ditches designed for conveyance shall only be used where flow velocities are anticipated to be less than five (5) feet-per-second. Ditches shall be regularly maintained to preserve the design capacity. Where ditch erosion occurs at higher flow velocities, more frequent maintenance may be required. Ditches shall be inspected periodically for blockages and erosion. Blockage shall be removed and the ditch restored to its design depth. Erosion and sedimentation that compromises the ability of the ditch to convey its design flow shall be addressed by reconstructing the ditch to its design geometry.
- Ditch Transitions. Ditch transitions from triangular to trapezoidal shall be made over a distance of ten (10) feet or more. If a transition is required because of an intersecting ditch, the transition shall be made above, rather than below the intersection.
- Intersecting Ditches. Intersecting ditches serving drainage areas should merge with parallel flow lines to the extent possible to minimize erosion.
- Establishment of Sediment Traps. In smaller watersheds, which range in size from less than 10 to about 160 acres, ditching and sediment traps established to convey and contain the 2-year, 24-hour event plus annual sediment yield for three (3) years shall be established prior to clearing, grubbing, and soil stockpiling. Sediment traps or other appropriate BMPs shall be used where drainage flows from disturbed to undisturbed or reclaimed areas.

- Establishment of Sediment Control Measures for Site-Specific Control. Sediment control measures such as contour scarification, straw dikes, rip rap, check dams, and erosion control products shall be used when necessary to minimize erosion and sediment transport in areas requiring site-specific erosion control. In cases where erosion is observed, other control measures such as gradient alterations and/or more frequent inspections shall be required as a site-specific control.
- Maintenance of Sediment Traps. Sediment accumulation in sediment traps designed to contain the 2-year, 24-hour event plus annual sediment yield for three (3) years shall be cleaned out when the design depth is reduced by more than 25%.
- Maintenance of Sediment Control BMPs. Sediment traps and site-specific BMPs (e.g., ponds, traps, erosion control products) shall be maintained in effective operating condition during the active mining phase. During reclamation, sediment traps and ponds shall be converted to small depressions designed for vegetation diversity and wildlife habitat enhancement in addition to short-term sediment capture. Control measures for site-specific control (e.g., straw dikes, rip rap) shall be removed or converted to small depressions during reclamation. Maintenance of depressions for short-term sediment capture shall be maintained until vegetation achieves good hydrologic condition, defined as 75 percent or greater ground cover, similar to pre-mining vegetative cover. Sediment control conveyances shall be maintained in a manner to reduce sediment accumulation from ditch erosion from steep slopes. Appendix B of the revised erosion and sediment control plan (2012) defines design guidelines for drainage for mine impacted areas and includes specific restrictions on triangular and trapezoidal conveyance channel slopes which should be followed to reduce internal ditch erosion.
- Soil Salvage Areas. In soil salvage areas, drainage shall be intercepted at the soil salvage edge using a combination of ditching and traps sized to contain runoff from at least a 2-year, 24-hour runoff event and a one (1) year sediment yield.
- Soil Preparation on the Contour. Spoil scarification, soil placement, soil preparation and seeding shall be done on the contour, provided safety of equipment operators is not compromised.
- Establishment of Vegetation. Seedbed preparation techniques that create a roughened surface to retard surface runoff and increase infiltration shall be used. Permanent vegetation cover appropriate for the site shall be established by the end of the third growing season following initial seeding.
- Minimizing Potential for Erosion During Reclamation. Slope lengths shall be reduced by constructing complex slope topography. With the exception of agricultural areas, regraded landscapes shall be left in a roughened condition to minimize compaction. Coarse textured substrates, including soils with high coarse fragment content shall be used, particularly on sites with increased erosion potential, or where establishment of woody species is desired.
- Maintenance of Depressions During Reclamation. During the reclamation process, small depressions shall be established on an opportunistic basis within the reclaimed area to enhance vegetative diversity, wildlife habitat, recharge and short-term sediment control. Small depressions will meet the following criteria:
  - Each depression on the interior of the reclaimed area will be one acre foot or less in capacity;

- Each depression at the margin of the reclaimed area will be two acre feet or less in capacity;
- No depression will be deeper than three feet;
- Depressions will be soiled and revegetated; and
- Maximum slopes will be 5:1 on the uphill (inflow) side and 3:1 on the lateral and downhill (outflow) sides.
- Reclamation of Rills and Gullies. Rills and gullies developed post-construction shall be remediated on a site-specific basis if they adversely impact the establishment of vegetation, disrupt post-mine land use and/or cause or contribute to a violation of a water quality standard. Unless otherwise permitted, any rill or gully greater than 30 inches in depth will be considered disruptive and shall be remediated.
- Spill Prevention and Response Procedures. The Permittee must develop and maintain a Spill Prevention Control and Countermeasure (SPCC) Plan to minimize the potential for leaks, spills, and other releases that may be exposed to stormwater and to provide for an effective response to spills when they occur.

#### 6.1.5 Non-Applicable Subparts and Appendices

EPA determined that the following subparts and appendices to 40 CFR Part 434 do not apply to this facility, as it does not meet the applicability requirements listed in each subpart:

- Subpart B – Coal Preparation Plants and Coal Preparation Plan Associated Areas
  - The Facility does not prepare coal at this location.
- Subpart C – Acid or Ferruginous Mine Drainage
  - The Facility qualifies as alkaline mine drainage.
- Subpart E – Post-Mining Areas
  - This sub-section only applies when subpart H – Western Alkaline Coal Mining does not apply.
- Subpart G – Coal Remining
  - The Facility does not do any coal remining at this location.
- Appendix A – Alternate Storm Limitations for Acid or Ferruginous Mine Drainage
  - The Facility qualifies as alkaline mine drainage.
- Appendix B – Baseline Determination and Compliance Monitoring for Pre-Existing Discharges at Remining Operations
  - The Facility does not do any coal remining at this location.

EPA has not developed additional technology-based effluent limitations that apply to discharges from the Facility. Based on evaluation of all of the above, EPA has developed three sets of technology-based permit limits for active coal mining areas – the NSPS found in subpart D, alternate effluent limits for small precipitation events found in subpart F, and alternate effluent limits for large precipitation events found in subpart F – *plus* technology-based permit limits from subpart H for outfalls that *only* receive runoff from pre and post-mining activities such as reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas.

As outfalls transition from receiving drainage and runoff from active mining areas to post-mining areas, the Permittee may request that effluent limitations at that outfall transition from

the Alkaline Mine Drainage ELGs in Subpart D to the Western Alkaline Mine Drainage ELGs in Subpart H. Per 40 CFR § 122.62(a)(1), EPA may modify the Permit at that time. Since this modification would involve an alteration to effluent limitations (generally removing limits and monitoring requirements), the modification does not qualify as a ‘minor modification’ (see 40 CFR § 122.63), and would require issuance of a draft permit for public review.

## 6.2 Water Quality Based Effluent Limitations (WQBELs)

The Facility discharges to Middle Fork Sarpy Creek, unnamed tributaries of Middle Fork Sarpy Creek, and unnamed tributaries of Sarpy Creek. The receiving waters are all located within the Crow Reservation. The Crow Tribe does not have EPA-approved water quality standards under Section 303(c) of the Clean Water Act (CWA). Section 101(a)(2) of the CWA states, “[I]t is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water to be achieved by July 1, 1983.” To achieve this Congressional goal in the absence of federally-approved Tribal water quality standards (WQS) on the Reservation, EPA considers the beneficial uses of the receiving waters to include aquatic life and recreation. EPA relied on CWA § 301(b)(1)(C) and principles of Tribal sovereignty in establishing WQBELs based on EPA’s Section 304(a) recommended water quality criteria (WQC).

Additionally, the permitted outfalls are located near the border with the state of Montana. The closest outfall is approximately 1,000 meters from the border, and all nine outfalls within the Middle Fork Sarpy Creek watershed are less than two miles from the border. The fifteen outfalls in the Sarpy Creek watershed range from approximately three to seven miles from the border. Based on the proximity of the discharge points to the state of Montana and the lack of dilution in the stream network as it enters Montana, EPA has also considered the state of Montana’s water quality standards (generally located in the Administrative Rules of Montana [ARM] 17.30, Circular DEQ-7, and Circular DEQ-12A) to determine if the discharge has the reasonable potential to cause or contribute to a violation of those downstream standards. EPA has not approved the state of Montana to administer any CWA programs on the Crow Reservation. Consideration of downstream state of Montana water quality standards for purposes of protection of downstream waters does not grant or infer any rights to the state of Montana.

Because the state of Montana’s WQS have been approved by EPA and in most cases are based on EPA’s Section 304(a) recommended WQC to protect the uses of the receiving water(s) – including aquatic life and recreation – EPA has determined that meeting the State’s WQS will also protect Tribal uses.

The state of Montana has classified the downstream waters as C-3. Waters classified C-3 are to be maintained suitable for *bathing, swimming, and recreation, and growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers. The quality of these waters is naturally marginal for drinking, culinary, and food processing purposes, agriculture, and industrial water supply* (ARM 17.30.629), and the specific water quality standards listed in ARM 17.30.629(2) must be considered when evaluating whether



discharges have the reasonable potential to cause or contribute to exceedances of criteria in any waters of the United States.

The state of Montana has listed Sarpy Creek (Assessment ID: MT42K002-090) from the Crow Indian Reservation boundary to mouth (i.e., *outside* the exterior boundary of the Crow Reservation) in its 2020 Integrated 303(d) List and 305(b) Water Quality Report submitted to the EPA as a Category 5 stream. A category 5 listing means that one or more applicable beneficial uses have been assessed as being impaired or threatened, and a Total Maximum Daily Load (TMDL) is required to address the factors causing the impairment or threat. Sarpy Creek is listed as “not fully supporting” aquatic life and the probable cause of impairment is high nutrient concentrations (specifically, nitrate/nitrite, total nitrogen, and total phosphorus). The state of Montana lists the probable source of the nutrient impairment as grazing in riparian or shoreline zones, and crop production (non-irrigated).

WQBELs are based on water quality standards and must be established for any parameters where TBELs are not sufficient to ensure water quality standards will be attained in the receiving water (40 CFR § 122.44(d)). The parameters that must be limited are those that are or may be discharged at a level that will cause, or have the reasonable potential to cause, or contribute to an excursion above any water quality standard.

EPA’s analysis of WQBELs also considered whether protections of acute and chronic WQS for both mine drainage dewatering, and precipitation-based runoff events (similar to the categories discussed in section 6.1) were appropriate. Acute and chronic water quality-based limits for all pollutants have been applied to discharges of mine drainage/dewatering, as this may be a continuous discharge which could subject aquatic life to both acute and chronic exposure. For precipitation-based discharge events, EPA determined that chronic water quality-based effluent limits were not applicable, as precipitation-related discharges are short in nature and do not have reasonable potential to cause or contribute to an exceedance of a chronic water quality standard. In addition, the assumption of zero dilution otherwise applied for development of effluent limitations in the Permit is likely not accurate during precipitation events large enough to cause a discharge. Note that the concept of ‘commingling’ applies here too – in cases where a discharge may be a mixture of mine drainage/dewatering and precipitation-based runoff, the more stringent limitations would apply in all cases.

The Facility is a coal mine. Pollutants of concern at coal mines typically include pH, iron, TSS and other settleable solids (because these pollutants have applicable technology-based effluent limits), and metals (because these are typically found in coal resources). Other pollutants of concern may be identified based on specific water quality standards or impairments. The following pollutants were identified as pollutants of concern and were further analyzed to determine whether they would need to be limited in the Permit.

#### 6.2.1 Total Suspended Solids/Settleable Solids

Solids control is a primary concern at large mining facilities. The Facility has installed numerous sediment control ponds to retain and detain all water that discharges from the Facility. The Facility has not reported a discharge in almost four years, which indicates that

the sediment ponds are working to capture and at least allow time for the suspended solids to settle out.

The state of Montana's WQS for C-3 streams states that "*No increases are allowed above naturally occurring concentrations of sediment or suspended sediment...settleable solids...which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.*" EPA feels that the existing TBELs will adequately protect this standard, and no WQBELs will be required in the Permit.

#### 6.2.2 Metals

Heavy metals are common pollutants of concern in coal mining operations. Coal is formed through compression of organic matter, which contains many elements, including heavy metals. These can be released into the air, water, and soil during the coal extraction process. The Permittee provided a dataset of metals samples during the 2009 permit application. EPA performed a reasonable potential analysis on this dataset and determined that aluminum, iron, and lead all had reasonable potential to cause or contribute to an exceedance of both EPA's recommended WQC, and the state of Montana's WQS (either acute, chronic, or both), whereas boron, copper, manganese, and zinc did not (no other metals samples appear to have been provided at the time). However, this dataset is now nearly 15 years old and has not been re-assessed. Additionally, there were some notes on the dataset that indicated EPA was unclear if some samples were total recoverable or dissolved. This is compounded by the fact that EPA's recommended WQC for metals are expressed as dissolved, but the state of Montana has adopted water quality standards for most metals that are expressed as total recoverable.

Part of a permit renewal is to re-evaluate whether data is still relevant, whether factors may have changed in the interim, and whether further data collection would clarify any issues. Collection of additional metals data now that the mine is operational will provide a stronger basis for any future reasonable potential analyses (see sections 6.2.2.5 and 7.1.6).

##### 6.2.2.1 *Iron, total*

Total iron is a pollutant of concern at the Facility because there is a total iron applicable TBEL (see section 6.1). The Crow Tribe does not have WQS, but EPA has published a 304(a) recommended criteria of 1.0 mg/L for chronic freshwater aquatic life. The state of Montana's WQS for chronic total recoverable iron is also 1.0 mg/L. Neither the state of Montana nor the 304(a) criteria recommend an acute value for total iron. Since the WQBEL would be more stringent than the existing TBEL, and the Facility's data show that there is reasonable potential to cause or contribute to an exceedance of this water quality standard (Table 2), the Permit will implement a chronic total iron permit limit of 1.0 mg/L where the TBEL is applied.

##### 6.2.2.2 *Iron, dissolved*

The previous permit included a permit limit for dissolved iron, and so it is a pollutant of concern. The limit was based on EPA's 304(a) criteria, which recommend a water quality

criteria of 1.0 mg/L iron to protect aquatic life. However, this recommendation is for total iron, not dissolved iron. It appears to have been mistakenly applied in the previous permit. The state of Montana similarly does not have a water quality standard for dissolved iron. Since the desired protection in both cases is for total iron, this limit will be included in the discussion for total iron (see section 6.2.2.1) and EPA will remove the dissolved iron effluent limitation from the Permit. See section 6.5 for a further discussion of anti-backsliding concerns.

#### 6.2.2.3 *Lead, dissolved*

Previous data indicated the Facility had reasonable potential to cause or contribute to an exceedance of the 304(a) criteria for this pollutant, and so it is a pollutant of concern because it was limited in the previous permit. This value is hardness dependent. The previous permit used a hardness of 400 mg/L to derive the current chronic (30-day average) limit of 10.9 µg/L. The DMR data for this cycle only includes two data points for lead – at two different locations – and is not enough to re-assess the reasonable potential determination found during the previous permit. Therefore, the dissolved lead effluent limitation will be retained in the Permit.

The state of Montana has also adopted a lead standard that is hardness dependent. However, the state of Montana's lead standard is based on the total recoverable fraction of lead. Lead criteria can be converted between dissolved and total recoverable by using a freshwater conversion factor. When the Facility's monitoring results are compared to the total recoverable acute and chronic criteria, there is no reasonable potential to cause or contribute to an exceedance of the state of Montana's water quality standard.

#### 6.2.2.4 *Aluminum, dissolved*

Previous data indicated the Facility had reasonable potential to cause or contribute to an exceedance of the 304(a) criteria for this pollutant, and so it is a pollutant of concern because it was limited in the previous permit. The state of Montana also has a dissolved aluminum criteria that is equivalent to the previous 304(a) criteria (EPA's 304(a) criteria was updated in 2019). These values are an acute criteria of 87 µg/L and a chronic criteria of 750 µg/L. The DMR data for this cycle only includes two data points for aluminum – at two different locations – and is not enough to re-assess the reasonable potential determination found during the previous permit (although it is noted that there was an exceedance of the 30-day average aluminum effluent limitation this cycle – see Table 2). Therefore, the dissolved aluminum effluent limitations for both 30-day and Daily Max will be retained in the Permit.

EPA updated its 304(a) criteria for dissolved aluminum in 2018. The new criteria are based on an equation that considers pH, hardness, and dissolved organic carbon (DOC) in the receiving stream. At typical pH and hardness values found in prairie streams, it is often – but not always – less stringent than the previous aluminum criteria. Due to the dual goals of protection of 304(a) criteria and the state of Montana's WQS, the existing permit limits will be retained.

#### 6.2.2.5 Other metals

Heavy metals are commonly found in coal formations. The state of Montana has published water quality standards for many heavy metals in Circular DEQ-7, and EPA's 304(a) recommended criteria also discuss heavy metals. EPA considers heavy metals to be pollutants of concern. While there is no data collected at this time to make a quantitative reasonable potential determination, EPA will require data collection for a future quantitative reasonable potential determination and may implement permit limits for these pollutants at that time. See section 7.1 for more information.

#### 6.2.3 pH

The previous permit included a pH effluent limitation of 6.0 to 9.0. pH is a pollutant of concern at the Facility because there is an applicable pH TBEL. The Crow Tribe does not have WQS, but EPA has published 304(a) criteria for pH that recommend a pH range of 6.5 to 9.0 for chronic freshwater effects. The state of Montana's WQS for C-3 classified waters for pH is that *induced variation of hydrogen ion concentration (pH) within the range of 6.5 to 9.0 must be less than 0.5 pH unit. Natural pH outside this range must be maintained without change. Natural pH above 7.0 must be maintained above 7.0.* This standard is difficult to implement without detailed knowledge of the receiving water flows and pH at any given time, so EPA has simplified implementation by requiring facilities to discharge within the stated range (in this case, 6.5 to 9.0) at all times. The previous permit applied the TBEL range of 6.0 to 9.0. The Permit will include modified pH limits of 6.5 to 9.0.

#### 6.2.4 Nutrients

Coal mines can be sources of nutrient runoff. The Facility uses a nitrogen-based blasting compound (see section 3.3) and suspended solids often contain particulate phosphorus. Limited monitoring data at other nearby coal mines indicate nutrients in the effluent may be at concentrations that could cause or contribute to an exceedance of Montana's WQS. Therefore, EPA considers nutrients to be pollutants of concern. While there is not yet data collected at this facility to make a quantitative reasonable potential determination, there are several qualitative indicators (dilution, duration and frequency of discharge, etc.) that suggest the facility does not have reasonable potential. EPA will not implement permit limits for nutrients at this time but will require data collection for a future quantitative reasonable potential determination. See section 7.1 for more information.

#### 6.2.5 Temperature

The state of Montana's temperature water quality criteria allows a slight increase or decrease in naturally occurring water temperatures. In this case, the Facility discharges primarily due to groundwater pumping or precipitation/snowmelt events, and typically in the spring or fall. Groundwater, snowmelt, and precipitation events tend to moderate surface water temperatures year-round. Based on these factors, EPA has determined that there is no reasonable potential to cause or contribute to an exceedance of this standard, and temperature effluent limitations will not be included in the Permit.

#### 6.2.6 Oil and Grease

The previous permit contained an oil and grease effluent limitation of 10 mg/L for a daily maximum and 15 mg/L for a 30-day average. EPA Region 8 considers oil and grease to be a pollutant of concern at most industrial facilities. This is because machinery used inside the mine has the potential to leak hydraulic oil, engine oil and other fluids and enter mine dewatering water. EPA has developed a protocol for limiting oil and grease that uses 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 a daily maximum effluent limitation of 10 mg/L.

It is unclear where the 15 mg/L 30-day average effluent limitation originally came from. It was included in the previous permits since 2009. It does not make sense to have a 30-day average limit that is higher than the daily max limit – the daily max limit of 10 mg/L effectively requires the Facility to remain at or below 10 mg/L on any given day. Since there appears to be no regulatory or water quality-based reason for the 15 mg/L limit, and it does not add any protections to the Permit, EPA will remove it from the Permit. An oil and grease daily maximum limit of 10 mg/L is generally in line with other coal mine permits throughout the region. See section 6.5 for a further discussion of anti-backsliding concerns.

#### 6.2.7 Whole Effluent Toxicity (WET)

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

Section 101(a)(3) of the CWA states, “it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.” EPA had previously determined that reasonable potential exists to violate this narrative water quality criterion. Therefore, the requirement to perform acute WET testing is being continued in the Permit. Since the Facility discharges only rarely, and for short periods of time, chronic WET testing will not be required. Acute WET testing shall be performed by the Permittee each discharge for two species: *Ceriodaphnia dubia* and *Pimephales promelas*. Based on the low dilution and effluent dominance of the discharge to receiving waters, the Permit will require that the LC50 show no toxicity at 100% effluent concentration. The following minimum dilution series should be used: 100%, 50%, 25%, 12.5%, 6.25% and a 0% control. In the event acute toxicity is found in the effluent, a Toxicity Identification/Toxicity Reduction Evaluation (TIE/TRE) will be required.

Specific WET requirements are outlined in the Special Conditions section of the Permit (see section 5.2 of the Permit).

#### 6.3 Final Effluent Limitations

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

In cases where the TBELs provided alternate effluent limitations, EPA decided that all WQBELs would still apply in all cases. EPA realizes that during large precipitation events, it may be that there is enough dilution flow to allow meeting of WQBELs in receiving waters; however, there is not enough information to determine this at this time, and the Facility's monitoring data (Table 2) show that even during a large precipitation event, the Facility still had a discharge of aluminum that was above the EPA water quality criteria.

6.3.1 Effluent Limitations Applicable to Mine Drainage (Outfalls 01, 02, 03, 04, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, and 24)

Below are effluent limitations for all outfalls discharging mine drainage (Table 6). Alternate effluent limitations for all outfalls discharging mine drainage are available under select conditions (see footnotes 'c' and 'd' in Table 6). For the alternate effluent limitations to apply, the Permittee shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event. To facilitate this, the Permittee is required to monitor and record precipitation at the Facility (see section 7.3).

**Table 6. Final Effluent Limitations for Mine Drainage/Dewatering (Outfalls 001, 002, 003, 004, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 021, 022, and 024)**

Effluent Characteristic	30-Day Average Effluent Limitations <u>a/</u>	7-Day Average Effluent Limitations <u>a/</u>	Daily Maximum Effluent Limitations <u>a/</u>	Limit Basis <u>b/</u>
Flow, gpm	report only	N/A	report only	N/A
Total Suspended Solids (TSS), mg/L	35 <u>c/</u>	N/A	70 <u>c/</u>	TBEL
Settleable Solids, mL/L <u>d/</u>	N/A	N/A	0.5	TBEL
Oil and Grease (O&G), mg/L	N/A	N/A	10	TBEL/PJ
Aluminum, dissolved, µg/L	87 <u>c/</u>	N/A	750	WQBEL
Iron, total, mg/L	1.0 <u>c/</u>	N/A	6.0 <u>c/</u>	WQBEL/TBEL
Lead, dissolved, µg/L	10.9 <u>c/</u>	N/A	N/A	WQBEL
Arsenic, total recoverable, mg/L <u>e/</u>	report only	N/A	report only	N/A
Cadmium, total recoverable, mg/L	report only	N/A	report only	N/A
Chromium, total recoverable, mg/L	report only	N/A	report only	N/A
Copper, total recoverable, mg/L	report only	N/A	report only	N/A
Mercury, total recoverable, µg/L	report only	N/A	report only	N/A
Nickel, total recoverable, mg/L	report only	N/A	report only	N/A
Selenium, total recoverable, µg/L	report only	N/A	report only	N/A
Silver, total recoverable, mg/L	report only	N/A	report only	N/A
Zinc, total recoverable, mg/L	report only	N/A	report only	N/A

<b>Effluent Characteristic</b>	<b>30-Day Average Effluent Limitations a/</b>	<b>7-Day Average Effluent Limitations a/</b>	<b>Daily Maximum Effluent Limitations a/</b>	<b>Limit Basis b/</b>
Total Dissolved Solids (TDS), mg/L	report only	N/A	report only	N/A
Hardness (as CaCO <sub>3</sub> ), mg/L	report only	N/A	report only	N/A
Nitrate-Nitrite (as N), mg/L	report only	N/A	report only	N/A
Total Kjeldahl Nitrogen (TKN) (as N), mg/L	report only	N/A	report only	N/A
Total Nitrogen (as N), mg/L	report only	N/A	report only	N/A
Total Phosphorus, mg/L	report only	N/A	report only	N/A
pH, standard units	Must remain in the range of 6.5 to 9.0 <i>at all times</i>			WQBEL
Whole Effluent Toxicity at 25°C, Acute	Pass LC50 at 100% effluent (i.e., LC50 >100%)			WQBEL

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

b/ WQBEL = Limitation based on water quality-based effluent limit; TBEL = Limitation based on technology based effluent limit; PJ = Limitation based on professional judgment of EPA Region 8 staff.

c/ The effluent limitations for these pollutants do not apply to discharges caused by a single or series of precipitation or snowmelt events. The Permittee has the burden of proof that the discharge was caused by a precipitation or snowmelt event, and that the discharge was not commingled with non-precipitation based mine drainage. Data providing proof of precipitation and absence of commingling must be submitted with the discharge monitoring report per section 7.4. In cases where a discharge may be a mixture of mine drainage dewatering and precipitation-based runoff, the more stringent limitations would apply in all cases. See Table 6 for monitoring requirements associated with these pollutants.

d/ The settleable solids effluent limitation only applies when the discharge is caused by a precipitation event. However, this limitation may be waived in discharges caused by a precipitation event greater than the 10-year, 24-hour precipitation event, defined here as a 24-hour rainfall event totaling 2.48 inches or more. This limitation may also be waived on a case-by-case basis for snowmelt events that cause an equivalent amount of runoff as the 10-year, 24-hour precipitation event. The Permittee has the burden of proof that these conditions are met and must submit supporting data with the discharge monitoring report per section 7.4. See Table 6 for monitoring requirements associated with these pollutants.

### 6.3.2 Effluent Limitations Applicable to Drainage from Reclamation Areas, Brushing and Grubbing Areas, Topsoil Stockpiling Areas, and Regraded Areas

The outfalls listed below (Table 7) have been identified by the Permittee as those that meet the requirements of the Western Alkaline Coal Mining standards (see section 6.1.4). Effluent limitations and monitoring requirements applicable to other outfalls do not apply to discharges from these outfalls. The Permittee is only authorized to discharge from these

outfalls under the requirements of this section as long as the outfalls continue to meet the eligibility requirements. If one or more of these outfalls begins to receive discharge from active mining areas, the Permittee shall inform EPA and the Permit may need to be modified. See section 3.2 of the Permit for specific requirements.

The Permittee has submitted a site-specific Sediment Control Plan (SCP) to the permitting authority that is designed to prevent an increase in the average annual sediment yield from pre-mined, undisturbed conditions. The Sediment Control Plan identifies best management practices (BMPs) and also describes design specifications, construction specifications, maintenance schedules, criteria for inspection, as well as expected performance and longevity of the best management practices. All BMPs must be designed, implemented, and maintained in the manner specified in the Sediment Control Plan. The Permittee also submitted a watershed model (the same one used to acquire the SMCRA permit) showing that implementation of the SCP will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined, undisturbed conditions. The Sediment Control Plan will be incorporated into the Permit as an effluent limitation by reference. In addition, all BMPs listed in section 6.1.4 will be applied as effluent limitations to outfalls in this section.

**Table 7. Outfalls Subject to Western Alkaline Coal Mining Standards**

<b>Outfall Number</b>	<b>Receiving Water</b>
005	Unnamed Tributary to Middle Fork Sarpy Creek
006	Unnamed Tributary to Middle Fork Sarpy Creek
019	Unnamed Tributary to Sarpy Creek
020	Unnamed Tributary to Sarpy Creek
023	Unnamed Tributary to Sarpy Creek

6.4 Antidegradation

Discharges from the Facility are existing, and no changes to effluent quality are proposed. The Permit prohibits exceedances of numeric or narrative standards. An antidegradation review is not necessary per Montana’s Antidegradation Policy, nor required for the Crow Tribe.

6.5 Anti-Backsliding

Federal regulations at 40 CFR § 122.44(l)(1) require that when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit were based have materially and substantially changed since the time the Permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR § 122.62.

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. However, due to modifications to the dissolved iron and oil and grease limits, these are explained in greater detail below.

In the case of dissolved iron, effluent limitations have been modified to include the previous dissolved iron limit of 1.0 mg/L as a total iron limit of 1.0 mg/L. Since a total iron limit is at least as stringent as dissolved iron limit (because it limits dissolved iron plus any particulate iron), this provides as stringent limitations as the previous permit. If the Facility exceeds 1.0 mg/L of total iron, they will be in violation of the Permit.

In the case of oil and grease, the 30-day average limit of 15 mg/L was not meaningful, since the daily maximum limit of 10 mg/L requires the Facility to remain below 10 mg/L on any given day. Therefore, retaining only the 10 mg/L daily maximum limit provides as stringent limitations as the previous permit. If the Facility exceeds 10 mg/L on any given day, they will be in violation of the Permit. This was a technical mistake, which may be removed under 40 CFR 122.44(1)(2)(i)(B)(2).

## **7 MONITORING REQUIREMENTS**

### **7.1 Self-Monitoring Discussion**

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

#### **7.1.1 Flow monitoring**

The previous permit required the Facility to monitor effluent flow on a daily frequency using an instantaneous measurement. This frequency will be retained in the Permit. The sample type will be changed to a grab sample, which includes instantaneous measurements as a type of grab sample (see section 1 of the Permit). Daily flow measurements are appropriate for an intermittent discharger such as the Facility.

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

The previous permit required the Facility to monitor effluent TSS each discharge using a composited sample comprised of three grab samples. The sampling frequency and sample type will be retained in the Permit. Sampling each discharge is appropriate for a facility that discharges sporadically. A composited sample is more appropriate for a facility that discharges in batches, where the water quality near the top of the retention pond could be different than the water quality near the level of the discharge control structure. TSS monitoring will be required for all discharge events, even when the alternate effluent limits apply.

### 7.1.3 pH

The previous permit required the Facility to monitor effluent pH each discharge using a composited sample comprised of three grab samples. The sampling frequency will be retained in the Permit. The sampling type will be changed to a grab sample. The Permittee is encouraged to take a pH sample at each of their composited sampling events for the other parameters and report a median value of the pH for each outfall. Sampling each discharge is appropriate for a facility that discharges sporadically. A grab sample is more appropriate for parameters such as pH that are time sensitive and don't composite as well.

Note that pH samples must be analyzed within 15 minutes of collection. For this reason, most facilities use an *in situ* meter, such as a calibrated pH meter, to measure it directly in the field.

### 7.1.4 Oil and Grease

The previous permit required the Facility to monitor effluent oil and grease each discharge using a composited sample comprised of three grab samples. The sampling frequency will be retained in the Permit. Sampling each discharge is appropriate for a facility that discharges sporadically. However, the oil and grease protocol is that if a visible sheen or floating oil is observed in the discharge, a grab sample shall be taken immediately. Therefore, the sampling type will be changed to a single grab sample.

The oil and grease monitoring will consist of a visual inspection, followed by an immediate grab sample if any oil and grease is observed. A visual inspection is part of basic operation and maintenance of a facility such as this (see section 6.2 of the Permit, which discusses facility inspections).

### 7.1.5 Nutrients

The previous permit did not require any monitoring for nutrients. To better determine protection of existing water quality standards in Circular DEQ-12A, nutrient monitoring will be required in this reissuance. The sampling frequency will be per discharge and the sampling type will be a composited sample comprised of three grab samples. Sampling each discharge is appropriate for a facility that discharges sporadically. A composited sample is more appropriate for a facility that discharges in batches, where the water quality near the top of the retention pond could be different than the water quality near the level of the discharge control structure.

### 7.1.6 Metals

The previous permit required the Facility to monitor effluent for aluminum (dissolved), iron (total and dissolved), and lead (dissolved) at each discharge using a composited sample comprised of three grab samples. For the aluminum, total iron, and lead parameters, the sampling frequency and sample type will be retained in the Permit. The dissolved iron effluent limitations have been changed to a total iron effluent limitation due to an error in the previous permit, and neither the state of Montana nor the recommended 304(a) criteria contain a dissolved iron value. Therefore, the dissolved iron monitoring requirements will be

removed from the Permit. Sampling each discharge is appropriate for a facility that discharges sporadically. A composited sample is more appropriate for a facility that discharges in batches, where the water quality near the top of the retention pond could be different than the water quality near the level of the discharge control structure.

Requirements to monitor for several additional metals will be included in the Permit to better determine protection of existing water quality standards and designated uses. The additional metals that were determined to be pollutants of concern are either those that have recommended 304(a) criteria, those for which the state of Montana has adopted WQS, and/or those that are commonly found in coal mine NPDES permits. These additional metals include arsenic, cadmium, chromium, copper, mercury, nickel, selenium, silver, and zinc. The monitoring will be for total recoverable metals, and any necessary comparison to dissolved metals criteria (i.e., those found in EPA's 304(a) recommended water quality criteria) will be done using the dissolved/total recoverable freshwater conversion factors listed in the criteria.

#### 7.1.7 Total Hardness

The previous permit did not contain any effluent total hardness monitoring requirements. The simplest definition of water hardness is the amount of divalent cations in the water. This quality factors into metals toxicity (i.e., metals become more toxic when water hardness is lower, and many metals WQS are calculated using an equation that includes hardness). To better determine what are the applicable metals' WQS, hardness monitoring will be included. The sample type will be a composited sample comprised of three grab samples. Sampling each discharge is appropriate for a facility that discharges sporadically. A composited sample is more appropriate for a facility that discharges in batches, where the water quality near the top of the retention pond could be different than the water quality near the level of the discharge control structure.

#### 7.1.8 Total Dissolved Solids (TDS)

Extraction industries that discharge stormwater and/or groundwater often show elevated levels of TDS in the effluent. TDS can have an impact on beneficial uses such as aquatic life. The previous permit did not contain any effluent TDS monitoring requirements. To better characterize the effluent from the Facility, the Permit is implementing a per discharge TDS monitoring requirement. The sample type will be a composited sample comprised of three grab samples. Sampling each discharge is appropriate for a facility that discharges sporadically. A composited sample is more appropriate for a facility that discharges in batches, where the water quality near the top of the retention pond could be different than the water quality near the level of the discharge control structure.

#### 7.1.9 Whole Effluent Toxicity (WET), Acute

The previous permit required the Facility to monitor acute effluent WET each discharge using a composite sample. This sampling frequency and type will be retained in the Permit. Sampling each discharge is appropriate for a facility that discharges sporadically. A composite sample is more appropriate for a facility that discharges in batches, where the

water quality near the top of the retention pond could be different than the water quality near the level of the discharge control structure.

#### 7.1.10 Per- and Polyfluoroalkyl Substances (PFAS)

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

Based on the known operations at the coal mine, PFAS is not a pollutant of concern at this time. Coal mines are not known sources of PFAS (which is a synthetic material), and the chemicals used at the Facility do not indicate a concern for PFAS. However, the Facility does store aqueous film forming foam (AFFF) at the site as a fire suppressant. AFFF is a known major source of PFAS introduction into the environment. According to the Permittee, AFFF has never been used but is available should it be needed for fire suppression. EPA's Assistant Administrator issued a memo in December 2022 addressing PFAS discharges in NPDES permits<sup>1</sup>. This memo recommended the inclusion of BMPs to address AFFF used for firefighting activities, such as the following:

- a) prohibiting the use of AFFFs other than for actual firefighting
- b) eliminating PFAS containing AFFFs
- c) requiring immediate clean-up in all situations where AFFFs have been used, including diversions and other measures that prevent discharges via storm sewer systems.

Based on the known operations at the Facility, PFAS monitoring is not required at this time. EPA encourages facilities to reduce, eliminate, and/or consider alternatives to the storage and use of AFFFs that may contain PFAS. In the Permit, EPA will include a BMP that requires immediate clean-up and reporting of any use of AFFF. This BMP will advance EPA's goal of reducing PFAS discharges to waterbodies. EPA will also include a requirement in the annual reporting for the Facility to indicate 1) if they used AFFF during the calendar year and if so, for what purpose, when it was used, where it was used, and how much (volume) was used; and 2) if they discharged AFFF to a receiving stream during that calendar year, and if so, for what purpose, when it was used, where it was used, and how much (volume) was used. This reporting will inform future permitting actions in addition to evaluating the potential for PFAS discharges to waterbodies.

## 7.2 Self-Monitoring Requirements

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

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<sup>1</sup> Fox, Radhika, EPA Assistant Administrator. *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and monitoring Programs*, from EPA's Assistant Administrator to EPA Regional Water Division Directors, Regions 1-10, December, 5, 2022

A minimum of three (3) grab samples shall be taken during any discharge event lasting more than 24 hours (Table 8, footnote 'd').

**Table 8. Monitoring requirements for Outfalls 001, 002, 003, 004, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 021, 022, and 024**

<b>Effluent Characteristic</b>	<b>Monitoring Frequency</b>	<b>Sample Type a/</b>	<b>Data Value Reported on DMR b/</b>
Flow, gpm c/	Daily	Grab d/	Daily Max. 30-Day Avg.
pH, standard units e/	Discharge	Grab d/	Instantaneous Min. Instantaneous Max.
TSS, mg/L f/	Discharge	Grab d/	Daily Max. 30-Day Avg.
Settleable Solids, mL/L g/	Discharge	Grab d/	Daily Max 30-Day Avg.
O&G, visual	Discharge	Visual	Narrative
O&G, mg/L	Immediately if visual sheen detected h/	Grab d/	Daily Max.
Aluminum, dissolved, µg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Arsenic, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Cadmium, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Chromium, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Copper, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Iron, total, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Lead, dissolved, µg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Mercury, total recoverable, µg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Nickel, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Selenium, total recoverable, µg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Silver, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.
Zinc, total recoverable, mg/L	Discharge	Grab d/	Daily Max. 30-Day Avg.

<b>Effluent Characteristic</b>	<b>Monitoring Frequency</b>	<b>Sample Type a/</b>	<b>Data Value Reported on DMR b/</b>
TDS, mg/L	Discharge	Grab <u>d/</u>	Daily Max. 30-Day Avg.
Hardness (as CaCO <sub>3</sub> ), mg/L	Discharge	Grab <u>d/</u>	Daily Max. 30-Day Avg.
Nitrate + nitrite (as N), mg/L	Discharge	Grab <u>d/</u>	Daily Max. 30-Day Avg.
Total Kjeldahl Nitrogen (TKN) (as N), mg/L	Discharge	Grab <u>d/</u>	Daily Max. 30-Day Avg.
Total Nitrogen (as N), mg/L	Discharge	Calculated <u>i/</u>	Daily Max. 30-Day Avg.
Total Phosphorus, mg/L	Discharge	Grab <u>d/</u>	Daily Max. 30-Day Avg.
WET at 25 C, Acute <u>j/</u>	Discharge	Grab <u>d/</u>	Pass/Fail

- a/ See section 1 of the Permit for definition of terms.
- b/ Refer to the Permit for requirements regarding how to report date on the DMR.
- c/ Flow measurements of effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate in gallons per minute (gpm) during the reporting period and the maximum flow rate observed, in gpm, shall be reported.
- d/ A minimum of three (3) grab samples shall be taken during any discharge event lasting more than 24 hours. A sample shall be taken at or near the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three (3) samples shall be taken during the first week and one (1) during each following week. All of the samples collected during the reporting period are to be used in determining the reported values – they can either be reported as a composite value (assuming holding times and requirements can be met), or reported and averaged separately.
- e/ This sample must be analyzed within 15 minutes of collection per 40 CFR Part 136. Typically, these samples are measured in situ using a meter that records an instantaneous measurement.
- f/ Although TSS effluent limitations are waived for discharges caused by precipitation events, TSS monitoring and reporting is required in all cases.
- g/ The settleable solids monitoring requirement is waived if either of the following conditions apply: 1) the discharge is not caused by a precipitation event, or 2) the discharge is caused by a precipitation event greater than the 10-year, 24-hour precipitation event, defined here as a 24-hour rainfall event totaling 2.48 inches or more (or a snowmelt event that causes an equivalent amount of runoff as the 10-year, 24-hour precipitation event). In either case, the Permittee has the burden of proof that these conditions are met.
- h/ If a visible sheen or floating oil is observed in the discharge, a single grab sample shall be taken immediately, analyzed and recorded 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.
- i/ For the purposes of this Permit, the term “Total Nitrogen (TN)” is defined as the calculated sum of analytical results from “Total Kjeldahl Nitrogen (TKN)” plus “Nitrate+Nitrite.”
- j/ A composite of the grab samples shall be provided to the lab (see footnote ‘d’).

### 7.3 Precipitation Monitoring

The alternate effluent limits included in the Permit are based on precise measurements of precipitation and/or snow depth. It is the responsibility of the Permittee to prove that these conditions are met for the alternate effluent limits to come into effect. To facilitate this, the Permittee will be required to monitor and record precipitation in a location that is representative of where active mining is occurring. For the purposes of this section, this includes the Middle Fork of Sarpy Creek basin and the Sarpy Creek basin. Precipitation shall be monitored and recorded using a precipitation gauge which meets the standards provided in section 5 of National Weather Service Instructional Bulletin 10-1302 (revised April 20, 2018). Data from monitoring of precipitation shall be summarized monthly and included as part of the annual report submittals for the Facility (see section 9).

## 8 SPECIAL CONDITIONS

The Permit includes three Special Conditions: the BMPs developed from the Sediment Control Plan required by the Western Alkaline Coal Mining ELGs (see section 5.1 of the Permit, and section 6.1.4 of this document), the WET testing requirements (see section 5.2 of the Permit, and sections 6.2.7 and 7.1.9 of this document), and a BMP related to reduction of PFAS discharges (see section 5.3 of the Permit, and section 7.1.10 of this document).

As discussed in section 4.2, looking back five to ten years, some required monitoring events were missed due to the short duration of the discharge – by the time the Permittee was aware, flow was no longer occurring or not adequate to sample. The Permittee must ensure that they are able to collect all required discharge samples, regardless of duration. Installing automatic sampling systems or crest gages at outfalls would be one way to address this.

The Facility has not discharged in over four years, since they finished building all retention ponds in 2019. EPA is not requiring installation of additional monitoring equipment at this time, but may require the Facility to address this in the future if the issue persists.

## 9 REPORTING REQUIREMENTS

Reporting requirements are based on requirements in 40 CFR §§ 122.44, 122.48, and Parts 3 and 127. A discharge monitoring report (DMR) frequency of quarterly was chosen because the Facility discharges infrequently.

The previous permit required submission of an annual report that summarized the Facility's precipitation monitoring, discharge points from active mining and reclamation areas, a general description of the active mining area, and narrative descriptions of BMPs and planned changes to the Facility that were necessary to address significant erosion or sedimentation issues. This annual report was due on January 28<sup>th</sup> of each year for the preceding year. The Facility submitted an annual report each year during the previous permit cycle. This reporting requirement will remain in the Permit, but with two additional reporting requirements: the Facility must report dates and times of all discharge events at each outfall, and they must report the use/discharge of AFFF. Reporting of AFFF will help EPA to develop future permit conditions regarding PFAS, while reporting of all discharge events will be helpful in

developing permit conditions and making sure that all discharge events are recorded (regardless of whether they get reported in the DMR data). Annual reporting requirements are located in section 7.5 of the Permit.

## **10 COMPLIANCE RESPONSIBILITIES AND GENERAL REQUIREMENTS**

### **10.1 Inspection Requirements**

The Permittee shall inspect its treatment facility and document the inspection, as required in the Permit. Inspections are required to observe and identify any operational deficiencies that may affect compliance with permit conditions, and to ensure proper O&M in accordance with 40 CFR § 122.41(e). Inspection requirements can be found in section 6.2 of the Permit. Results of these inspections and general descriptions of compliance are required to be provided to EPA in an annual report (see section 9, as well as section 7.5 of the Permit).

### **10.2 Operation and Maintenance**

40 CFR § 122.41(e) requires permittees to properly operate and maintain at all times, all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. In addition to an operation and maintenance plan, regular facility inspections, and consideration of staff and funding resources are important aspects of proper operation and maintenance. Consideration of staff and funding provide the Permittee with the necessary resources to operate and maintain a well-functioning facility.

Operation and maintenance requirements have been established in sections 6.3 of the Permit to help ensure compliance with the provisions of 40 CFR § 122.41(e).

### **10.3 Per- and Polyfluoroalkyl Substances (PFAS) Notification and Plan**

As discussed in section 7.1.10 of this document and sections 5.3 and 7.5 of the Permit, the Permittee is required to both immediately clean-up when AFFF is used, and report when and if AFFF is used or released at the Facility. AFFF is a known source of PFAS, and PFAS is known to cause risks to human health. The purpose of this reporting BMP is to identify sources of PFAS and keep PFAS out of the environment.

## **11 ENDANGERED SPECIES CONSIDERATIONS**

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



The U.S. Fish and Wildlife Information for Planning and Conservation (IPaC) website (<https://ecos.fws.gov/ipac/>) was accessed on April 25, 2023 to determine federally listed Endangered, Threatened, Proposed and Candidate Species for the area near the Facility. The IPaC Trust Resource Report findings are provided below (Table 9). The designated area utilized was identified in the IPaC search and covers the entire mine footprint site plus Sarpy Creek downstream for approximately 10 miles. The total action area is approximately 10,000 acres.

**Table 9. IPaC Federally listed Threatened and Endangered Species within the action area**

Species	Scientific Name	Species Status	Designated Critical Habitat
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Endangered	No critical habitat at this location
Monarch Butterfly	<i>Danaus plexippus</i>	Candidate	No critical habitats at this location.

### 11.1 Biological Evaluation

The proposed action is reissuance of this NPDES permit, which authorizes discharge from an open-pit coal mine to various tributaries of Sarpy Creek. This is a continuation of existing operating conditions; no significant changes to discharge volumes or water quality are planned or expected due to the reissuance of this Permit. There is no consumptive use of groundwater or surface water; thus, neither water depletions nor incidental take will result from this Permit. The Permittee is practicing concurrent reclamation. Permit effluent limitations are generally protective of receiving water quality.

There are no listed species or critical habitats in the action area. EPA did conduct an analysis on the potential effects of the proposed action on the two species in Table 9, and downstream consideration of another endangered species. These are provided below. These biological evaluations are based on information obtained from the IPaC site and knowledge regarding the proposed action.

Northern Long-eared Bat, *Myotis septentrionalis* – This species’ listing was changed from threatened to endangered on April 1, 2023. EPA informally discussed this species with the Montana FWS office several times, and based on those discussions it seems possible that Big Horn County is too far west and that the IPaC mapping tool may be in a state of flux on the species. However, the IPaC mapping tool and species list did identify it as present in the area. The project will entail removal of several hundred acres of trees and rocky terrain to access coal seams, so it is likely that it may impact a species that nests or hibernates in either natural caves or trees in the area. However, EPA conducted a project determination in IPaC (project code: 2023-0085136) and received a concurrence letter stating that the project “may affect, but is not likely to affect” the northern long-eared bat.

Based on this determination and discussion with Northern Long-eared Bat experts in Montana, EPA believes this federal action may affect, but is not likely to adversely affect, the Northern Long-eared Bat.

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 reasons listed in the first paragraph of section 11.1.

Pallid sturgeon, *Scaphirhynchus albus* – Although outside of the action area, EPA considered the downstream effects that this discharge may have on the endangered pallid sturgeon inhabiting the Yellowstone River. This discharge is located approximately 90 miles upstream of the Yellowstone River and is therefore well mixed and attenuated by the time it reaches the river. According to the USGS, the Yellowstone River at Forsyth, Montana (USGS gage 06295000) has a critical 7Q10 low flow of 2,580 cfs, or 1.16 million gallons per minute (gpm). Even at these low flows, there is over 10,000 times dilution provided in the Yellowstone River at low flow conditions, as compared to the Facility's two reported discharges of approximately 20 gpm and 78 gpm. It is worth noting that the Facility has not discharged in over four years, since they completed construction of their stormwater retention ponds. Additionally, discharges from this facility have typically occurred during heavy precipitation/snowmelt events, so it is likely that the Yellowstone River would be at a much higher flow than the 7Q10 condition if a discharge were to occur at the Facility. Due to the infrequency of discharge, the large dilution factor and the distance between the discharge and the Yellowstone River, EPA believes this discharge is not likely to adversely affect pallid sturgeon at this downstream location.

Based on the IPaC information, EPA determined the permitting action "may affect, but is not likely to adversely affect" the species listed above. Before going to public notice, a copy of the draft Permit and this Statement of Basis was sent to the Montana Ecological Field Services Office of FWS requesting concurrence with EPA's finding that reissuance of this NPDES Permit "may affect, but is not likely to adversely affect" the species listed as threatened or endangered in the action area by the FWS under the Endangered Species Act nor their critical habitat.

## **12 NATIONAL HISTORIC PRESERVATION ACT REQUIREMENTS**

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

In 2008, EPA and the Bureau of Indian Affairs (BIA) agreed that in accordance with 36 CFR 800.2(a)(2), BIA would be the lead federal agency for compliance with the National Historic Preservation Act (NHPA) for the Absaloka Mine Crow Reservation South Extension Project<sup>2</sup> ("2008 NHPA Letter"). The letter documenting this lead agency relationship referred to EPA's then-anticipated issuance of the NPDES permit for the expansion, as well as a Memorandum of Agreement for *Cultural Resource Protection and Archeological Data Recovery in Westmoreland Resources' Absaloka Mine Permit Area South Extension on the Crow Indian*

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<sup>2</sup> Parisian, Edward (BIA) to Davis, Greg (EPA). (May 28, 2008). [Letter from BIA to EPA stating BIA's role as lead agency in NHPA process].

*Reservation*<sup>3</sup>, entered into under 36 CFR 800.6(a) (“2008 NHPA MOA”). *Id.* The scope of the project at the time of the designation of BIA as the lead agency for NHPA section 106 encompassed the work and the area addressed in EPA’s NPDES permit for the expansion, which was issued in 2009 and first renewed in 2015. In particular: (1) the 2008 NHPA Letter states that BIA is the lead agency for NHPA purposes including the execution of the 2008 NHPA (2) the 2008 NHPA MOA recites that it is entered into in connection with federal surface mining permit MT-0021-A; (3) and the 2008 Final Environmental Impact Statement<sup>4</sup> (“2008 FEIS”) developed in connection with the issuance of permit MT-0021-A addresses and considers the EPA NPDES permit then proposed for the facility. In renewing NPDES permit MT-0030783 in 2014, EPA repeated that EPA was relying on BIA as the lead agency for NHPA compliance, under the 2008 NHPA Letter. Finally, the Absaloka Mine Crow Reservation South Extension Project remains within the scope anticipated in the 2008 FEIS, and thus the 2008 NHPA Letter remains relevant and effective with respect to this undertaking. All documents referenced in this section are part of the administrative record.

Therefore, EPA reaffirms that the BIA is the lead agency for NHPA compliance for the South Extension development plan, in accordance with 36 CFR Section 800.2(a)(2). During the public comment period, the Crow Tribe’s Tribal Historic Preservation Office will be notified as an interested party to provide an opportunity for their input.

### **13 401 CERTIFICATION CONDITIONS**

At the time of the Permit reissuance, EPA was the Clean Water Act (CWA) Section 401 certifying authority for the Permit, because the Tribe had not received authorization to implement Section 303(c) of the CWA. EPA has determined § 401 conditions are unnecessary, because the Permit as written protects Tribal water quality requirements.

### **14 MISCELLANEOUS**

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

Permit drafted by Erik Makus, U.S. EPA, (406) 457-5017, (April 2023)

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<sup>3</sup> Office of Surface Mining, Reclamation, and Enforcement, 2008. *Memorandum of Agreement Submitted to the Advisory Council on Historic Preservation for Cultural Resource Protection and Archeological Data Recovery in Westmoreland Resources’ Absaloka Mine Permit Area South Extension on the Crow Indian Reservation.*

<sup>4</sup> BIA/Montana Department of Environmental Quality, 2008. *Final Environmental Impact Statement for the Absaloka Mine Crow Reservation South Extension Coal Lease Approval, Proposed Mine Development Plan, and Related Federal and State Permitting Actions.*

## **ADDENDUM**

### **AGENCY CONSULTATIONS**

The FWS concurred with EPA's preliminary conclusion that the Permit reissuance is not likely to adversely affect listed species. On May 23, 2023 EPA received an automated concurrence letter for the northern long-eared bat. During public notice, EPA realized that the finding for the pallid sturgeon should have been a "no effect" finding rather than "not likely to affect." EPA discussed this issue with the Montana Ecological Field Services Office of FWS on September 27, 2023 and concluded that a "no effect" determination was appropriate since the pallid sturgeon habitat is well outside the action area.

The Crow Tribe's Tribal Historic Preservation Office was contacted during public notice, but did not comment on EPA's preliminary determination that the Permit reissuance will not impact any historic properties.

### **PUBLIC NOTICE AND RESPONSE TO COMMENTS**

The Permit and statement of basis, including the CWA Section 401 certification, were public noticed on EPA's website and in the *Big Horn County News* on August 24, 2023. No comments were received. 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.