

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
HARD ROCK MINING SECTION, MINING BUREAU
OPERATING PERMIT – FIELD INSPECTION REPORT**

Permittee: Montana Resources, LLC				Inspection Date: November 8, 2024					
Operating Permit #: 00030			Project: Montana Resources- Continental Mine Complex			County: Butte-Silver Bow			
Nearest City or Town(s): Butte									
Inspector(s): Shanna Law, Garrett Smith				Permittee Rep(s): Jeremy Fleege					
Agencies w/overlapping permit jurisdiction:		USFS		BLM		X	Other (EPA)	None	
Minerals: Copper, molybdenum, minor silver									
Status:		X		Active		Inactive		Suspended	Other
Weather: Mostly sunny, high temp 56°F									
Type of Operation:				Purpose of Inspection:					
X	Open Pit				Initial (Pre-permitting)				
	Underground			X	Regular Compliance				
	Placer				Amendment # MR#				
X	<i>Leach- Leach pads near HSB not receiving solution</i>				Complaint Received				
X	Tailings Storage Facility: [X] Active or [] Inactive				Bond Release				
	Mill				Other (tour, data collection, baseline, TSF, etc.)-				
	Other: (surface rock picking, trenching or excavation)				NON issued				

INSPECTION CHECKLIST
(N/O = Not Observed, N/A = Not Applicable) *Additional notes are italicized*

GENERAL:

	Yes		No		N/O		N/A	
	X							All mining-related disturbances within permitted and bonded areas
							X	Incremental bonding requirements have been submitted
	X							Following approved mining plan and permit conditions: <i>Additional discussion recommended for drilling and monitoring programs</i>
	X							Following approved monitoring plans
	X							Reclamation concurrent with mining: <i>Ongoing reclamation on TSF West Embankment and an area near the Guard Shack (~20 acres)</i>

MATERIAL HANDLING:

	Yes		No		N/O		N/A	
	X							Soil salvage according to plan
	X							Soil stockpiles properly maintained: <i>Soil salvaged from N/NW of TSF West Embankment, some direct-hauled and placed on embankment</i>
	X							Special handling/stockpiling of materials consistent with plan

FACILITIES:

	Yes		No		N/O		N/A	
	X							Construction reports properly filed
	X							Acceptable liner integrity
	X							Tailing impoundment/heap leach/dump design as approved

	X						Road construction as approved
WATER CONTROLS:							
	Yes		No		N/O		N/A
	X						Erosion-control measures concurrent with mining, BMPs in place: <i>Maintenance and repairs to follow Erosion Control Plan as needed.</i>
	X						Erosion/sedimentation mitigations acceptable
	X						Culverts installed and maintained as approved
	X						Diversions maintained and functioning as approved
	X						Process/storage/settling pond(s) constructed, operating, and maintained
	X						Acid rock drainage controlled
	X						Adequate freeboard in all solution storage and process facilities
AIR QUALITY:							
	Yes		No		N/O		N/A
	X						Acceptable air quality: <i>No significant fugitive dust observed. Water is sprayed on the roads and multiple strategies are used on the tailings</i>
OTHER:							
	Yes		No		N/O		N/A
	X						Noxious weeds controlled
	X						Wildlife mitigations in place and functioning
							X Cultural resource mitigations properly implemented
			X				Water sample(s) taken
			X				Materials sample(s) taken
	X						Photos taken
	X						Are revisions or amendments anticipated in the next year? <i>Potential disposal of offsite waste (BPSOU), developments for critical mineral recovery, future amendment for TSF expansion</i>
	X						Is a comprehensive 5-year bond review due in the next year? Date of next 5-year bond review: <i>Final due in January 2026, review process to occur in 2025</i>
							Other:
DISCUSSION: DEQ staff arrived at Montana Resources (MR) offices at 9:00 AM. A preliminary meeting was held to review the goals for the inspection, which included a review of mining activities in the Continental Pit, Horseshoe Bend (HSB) area, and the Yankee Doodle Tailings Storage Facility (TSF). Much of the discussion covered anticipated permit and bond review actions that will occur in the coming year. Compliance assistance and recommendations are provided in bold.							
<u>Concurrent Reclamation</u>							
Reclamation activities are ongoing for an area directly north/northeast of the guard shack entrance gate (~20 acres). The area has been graded and most of the soil has been placed, although some soil hauling and pushing remains to be completed (Photos 2 and 3). The area will then be seeded and revegetation will be monitored periodically in the coming years. A small area (~1 acre) is being used as a test plot for incorporating biochar into the soil cover, which will be compared to another small plot using only compost as an amendment to the soil.							
As noted in previous inspections, another concurrent reclamation project is along the downstream face of the West Embankment (21.7 acres, not observed on this trip). The early vegetation establishment looked good on the							

September 2024 inspection, with very few weeds observed. The different test plots in this area showed comparable growth and all areas will be monitored over the upcoming growing seasons. **If new methods are ultimately identified and proposed for completing final reclamation, the Reclamation Plan must be revised accordingly. If test plot areas fail to meet the requirements for comparable stability and utility to adjacent lands (82-4-336(9), MCA), then additional reclamation work would be required (i.e. alluvium or soil placement, any necessary amendments) in order to comply with the approved Reclamation Plan and to be eligible for bond release.**

Continental Pit and E East Layback

As documented in 2022 and 2023 inspections, MR observed areas of instability on the D East highwall in the Continental Pit during fall 2022. Revision MR22-002 allowed for additional disturbance and overburden removal to the east of the highwall (termed “E East”), to create a shallower slope on the rock face and limit future instability. Disturbance and overburden removal continues in the E East area (Photos 4, 5, and 6).

The updated blasting plan (revision MR23-003) states that no blasting would occur within 500 feet of the Interstate 15 right-of-way without prior approval from DEQ in consultation with the Montana Department of Transportation (MDT). Blasting has not yet occurred within a distance that requires additional coordination and approval from DEQ and MDT. Recent blasts have been utilizing modified hole sizes and explosive loads to reduce the potential for fly rock. **If blasting within this buffer distance may occur over the next year, DEQ recommends proactive communication and preparation for any additional mitigations or traffic control that may be needed.**

The progress of mining across the Continental Pit and the exposure of a pronounced area of supergene enrichment in the D East area were observed on the way to the TSF barge access road (Photos 6 and 7). Two drill rigs were also observed along the east side of the Continental Pit, presumably for reserve characterization and mine sequence planning (Photos 31 and 32). **DEQ recommends additional discussion about ongoing drilling and monitoring programs, in relation to the details provided in the Operations and Reclamation Plans and the Tailings Operation Maintenance and Surveillance (TOMS) Manual.**

TSF- Tailings Management and Reclamation

After passing by the ongoing construction of the “mega ramp” along the southeast side of the TSF, the tailings beach and pond were accessed along the barge access road (Photos 8 through 15). Grading and alluvium placement have occurred on the upstream faces of the embankments, in accordance with Engineer of Record (EOR) recommendations (Photos 12 and 13). The EOR conducted the annual facility inspection during the week of 9/23/2024 and no significant issues were observed. Preliminary recommendations were communicated to MR via email on 10/3/2024, which included: providing a timeline to reach the 5,700-ft elevation in the Horseshoe Bend (HSB) rock disposal site (RDS), and additional reporting for the usage and maintenance needs at the multiple tailings discharge locations. **The EOR’s report and recommendations, in addition to MR’s Corrective Action Plan in response, are due to be submitted to DEQ within 120 days of the inspection date.**

Construction of the embankment crests to a design elevation of 6,450 feet has occurred across the facility, with the exception of a small area along the North-South Embankment (Photo 12). The former low point in the northwest corner of the West Embankment has recently been raised to the design crest elevation (Photo 14). Having multiple tailings discharge points allows greater flexibility for selectively applying slurry in areas that might become dry and prone to blowing dust, and to control the sequential development of the beach and pond areas. The tailings beach is saturated in many places or covered in snow and ice, and tracks are visible from vehicles spraying magnesium chloride for dust control (Photos 10, 11, and 14). There was no blowing dust observed on this site inspection. In general, construction, monitoring, and maintenance are being conducted in accordance with the Design Document, TOMS Manual, and annual recommendations from the EOR.

The final stop around the TSF was the West Embankment Drain (WED) Extraction Pond and the North/Northwest Dumps (Photos 16 through 18). The lined pond has ample capacity to manage seepage and the pumping system is functioning well, with no major changes observed in flow rates or water quality in the past year of monitoring. **MR requested additional information from DEQ about the Granite Mountain Memorial Interpretative Area (GMMIA), which overlaps with portions of the Northwest Dumps and the Butte Priority Soils Operable Unit (BPSOU) boundary. DEQ will provide separate correspondence on this topic, related primarily to revision MR04-001 (later termed "Amendment 002") and the associated Environmental Assessment (EA) from 2004 for removing 109 acres from the permit area in this location.**

Horseshoe Bend (HSB), Seep 10, and Water Treatment

The next stop on the inspection was the HSB area overlook (Photos 19 and 20). DEQ approved Minor Amendment 011 in July 2022 for the construction of the HSB RDS at the southern toe of the TSF. The RDS design includes a foundation drainage layer and engineered rock drains to capture and convey seepage flows from underneath the RDS, through a conveyance channel, and then to the management and treatment systems required under the Butte Mine Flooding Operable Unit (BMFOU) remedy.




Since the last inspection, the construction of layered rock drains has concluded (Photos 19 and 24). The placement of non-ore rock into the RDS will likely commence in 2025 (see preliminary EOR recommendation above). In some areas, a cross section of the multi-layer drain was visible, in addition to seepage emanating from the contact of the rock drain and underlying ground surface (Photos 21 through 23).

The copper precipitation plant and bags of densified sludge stored south of the HSB Water Treatment Plant were observed prior to leaving the area (Photos 25 and 26). MR continues to coordinate with interested parties and potential funding sources to evaluate the potential recovery of rare earth elements (REE) or other critical minerals (CM) from the precipitated sludge produced by water treatment. See the DEQ inspection report from 9/28/2023 for additional details. **Potential funding for additional investigations and facilities is still pending, but DEQ recommends discussion in advance about the potential permit implications for REE and CM recovery and/or reprocessing systems. The operation, reclamation, and financial assurance for such systems should be considered with regard to overlapping BMFOU water treatment requirements.**

Other Topics

- As the season changes, the monitoring and mitigation program for migratory birds is underway at the Berkeley Pit (Photos 27 and 28).
- Plans continue to evolve for the disposal of material to be removed under Butte Priority Soils Operable Unit (BPSOU) activities. Potential repository locations are being evaluated by a siting committee, which include sub-aqueous disposal in the Berkeley Pit and a dry repository near Shields Avenue that would be removed from the mine permit boundary and transferred to Atlantic Richfield Co. (Photos 1, 29, and 30). **DEQ recommends further discussion with MR as these plans develop, to facilitate timely processing for any associated permit actions that may be required.**
- The next amendment application to raise the TSF embankments would require an updated Design Document and TOMS Manual, in addition to certification from the EOR and a review/conclusion report from the Independent Review Panel. These documents are in development and will be provided to the other parties as they're available. MR anticipates submitting the application to DEQ in late 2024 or early 2025. **A meeting has been scheduled for 12/5/2024 to provide an overview of the project and discuss aspects of the application.**

The inspection concluded around 12:30 PM, with a wrap-up of the concepts that were discussed during the inspection. There were no issues identified that need immediate attention, although DEQ anticipates additional discussion about the topics in bold.

Signature of Inspector(s):	 	Date:	11/15/2024 11/19/2024
Signature of Reviewer:		Date:	11/18/2024
Copy reports to:	Permittee (c/o Mark Thompson, Montana Resources); File 00030.3		

Attachments:

- Photo Log

Hard Rock OP Mining Section Inspection Photo Log

Permit: 00030 Montana Resources, LLC

Inspector(s): Garrett Smith and Shanna Law

Date: 11/08/2024



Photo #: 1

Location: -112.51402, 46.00747

Date, Time: 2024/11/08, 09:47:29

Description: The haul route and pipelines near the office, previously used for conveying Parrot Tailings for on-site disposal. Depending on the location determined for BPSOU waste, this route could potentially be used for conveying other off-site waste to the Berkeley Pit.



Photo #: 2

Location: -112.49677, 46.00709

Date, Time: 2024/11/08, 09:51:19

Description: This area near the guard shack (approx. 20 acres) is being reclaimed, with completed grading and soil placement in most areas.



Photo #: 3

Location: -112.49677, 46.00709

Date, Time: 2024/11/08, 09:51:27

Description: Reclamation area north east of the guard shack



Photo #: 4

Location: -112.46552, 46.01607

Date, Time: 2024/11/08, 10:02:35

Description: Mining continues in the E East layback of the Continental Pit



Photo #: 5

Location: -112.46559, 46.01616

Date, Time: 2024/11/08, 10:02:43

Description: Mining continues in the E East layback of the Continental Pit



Photo #: 6

Location: -112.46467, 46.01373

Date, Time: 2024/11/08, 10:09:33

Description: Mining continues in the E East layback of the Continental Pit (distance)



Photo #: 7

Location: -112.47213, 46.01205

Date, Time: 2024/11/08, 10:10:13

Description: Clear contact between leached and enriched zone, area of high wall movement in 2022 is on the left side



Photo #: 8

Location: -112.4896, 46.04828

Date, Time: 2024/11/08, 10:20:55

Description: View of the road cut and ramp established to the TSF pond barge and return water pipelines



Photo #: 9

Location: -112.4896, 46.04828

Date, Time: 2024/11/08, 10:21:03

Description: Pipeline and tailings beach (distant pond) on the North-South Embankment



Photo #: 10

Location: -112.4896, 46.04828

Date, Time: 2024/11/08, 10:21:11

Description: Tailings beach (distant pond) on the North-South Embankment, signs of recent activity by tracked vehicles applying dust suppressant



Photo #: 11

Location: -112.48961, 46.04828

Date, Time: 2024/11/08, 10:21:26

Description: Pipeline and tailings beach (distant embankment crest) on the North-South Embankment



Photo #: 12

Location: -112.48956, 46.04824

Date, Time: 2024/11/08, 10:22:03

Description: Looking along the North-South Embankment, from the vantage of a low point that has not yet been raised to an elevation of 6450 ft



Photo #: 13

Location: -112.48963, 46.04825

Date, Time: 2024/11/08, 10:22:33

Description: Pipeline and tailings beach on the North-South Embankment



Photo #: 14

Location: -112.48966, 46.04823

Date, Time: 2024/11/08, 10:24:08

Description: View across the TSF, the northwest corner of the West Embankment has been raised to an elevation of 6450 ft (bright/orange-tan lift)



Photo #: 15

Location: -112.49782, 46.03679

Date, Time: 2024/11/08, 10:38:06

Description: Much of the tailings beach appears saturated or covered in snow/ice, no blowing dust was observed on this trip



Photo #: 16

Location: -112.52, 46.0406

Date, Time: 2024/11/08, 10:44:35

Description: Extraction pond at the south end of the West Embankment Drain- plenty of capacity, the liner looks good, and no issues observed for operations/reported data



Photo #: 17

Location: -112.51995, 46.04055

Date, Time: 2024/11/08, 10:47:31

Description: Looking down at the Northwest Dumps from the WED Extraction Pond, a portion of this land was acquired from Atlantic Richfield Co. (potential expansion of embankment footprint)



Photo #: 18

Location: -112.51995, 46.04055

Date, Time: 2024/11/08, 10:47:42

Description: Looking down at the Northwest Dumps from the WED Extraction Pond, a portion of this land was acquired from Atlantic Richfield Co. (potential expansion of embankment footprint)



Photo #: 19

Location: -112.50974, 46.03309

Date, Time: 2024/11/08, 10:56:45

Description: Looking down at Horseshoe Bend area from Tailings Booster Station #3



Photo #: 20

Location: -112.50974, 46.03309

Date, Time: 2024/11/08, 10:56:55

Description: Looking down at Horseshoe Bend area and inactive leach pads, from Tailings Booster Station #3



Photo #: 21

Location: -112.50184, 46.02765

Date, Time: 2024/11/08, 11:09:21

Description: Seepage from one portion of exposed rock drain in the Horseshoe Bend area



Photo #: 22

Location: -112.50185, 46.02765

Date, Time: 2024/11/08, 11:09:28

Description: Seepage from one portion of exposed rock drain in the Horseshoe Bend area



Photo #: 23

Location: -112.50185, 46.02766

Date, Time: 2024/11/08, 11:09:37

Description: Seepage from one portion of exposed rock drain in the Horseshoe Bend area



Photo #: 24

Location: -112.50185, 46.02764

Date, Time: 2024/11/08, 11:10:03

Description: Looking at the east side of Horseshoe Bend, former pond areas have been backfilled with drainage blanket layer and rock drains.



Photo #: 25

Location: 46.021364, -112.499517

Date, Time: 2024/11/08, 11:14:54

Description: New copper precipitation plant, to the south of Horseshoe Bend



Photo #: 26

Location: -112.49707, 46.01955

Date, Time: 2024/11/08, 11:17:18

Description: Bags of densified sludge are still stored directly south of the Horseshoe Bend Water Treatment Plant



Photo #: 27

Location: -112.51305, 46.01131

Date, Time: 2024/11/08, 11:23:21

Description: View of Berkeley Pit from bird shack, migratory bird monitoring and mitigation program is underway for the season



Photo #: 28

Location: -112.51306, 46.01131

Date, Time: 2024/11/08, 11:23:31

Description: View of Berkeley Pit from bird shack, migratory bird monitoring and mitigation program is underway for the season



Photo #: 29

Location: -112.51282, 46.00867

Date, Time: 2024/11/08, 11:28:04

Description: The parcel between the MR office and the polishing plant may be used for a future repository, pending approval through BPSOU parties and a revision to the mine permit to remove these acres from the permit area.



Photo #: 30

Location: -112.51283, 46.00865

Date, Time: 2024/11/08, 11:28:12

Description: The parcel between the MR office and the polishing plant may be used for a future repository, pending approval through BPSOU parties and a revision to the mine permit to remove these acres from the permit area.



Photos #: 31 and 32

Location: -112.461096, 46.015085

Date, Time: 2024/11/08, 14:00

Description: View from the adjacent interstate- two drill rigs on the east side of the Continental Pit, within the disturbance area. Ongoing drilling programs provide information for mine sequence planning and reserve characterization.

