

INSPECTION REPORT: GREENS CREEK MINE

Tongass National Forest Minerals Group
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Date of Inspection: Wednesday, May 24, 2017
Date of Report: Friday, June 9, 2017
USDA Forest Service Inspector: Edward Gazzetti

Ranger District: Admiralty Island National Monument, Juneau Ranger District
Weather Conditions: Overcast. Temperature: 50's (°F).

Exploration in accordance with operating plan	Not Applicable
Timber removal following timber sale contract	Not Applicable
BMP for erosion control	Satisfactory
Water Quality BMP	Satisfactory
Public safety & fire prevention	Satisfactory
Reclamation work adequate and timely	Satisfactory
Roads maintenance adequate and current	Satisfactory
Tails placement in accordance with plan	Satisfactory
Waste Rock placement in compliance	Satisfactory
Company supervision of operation	Satisfactory
Operating in a clean and orderly manner	Satisfactory

Any conditions noted as UNSATISFACTORY will require follow up action by the Mine Inspector and a written memorandum to the operator, outlining the necessary work.

NEW REMARKS

Ward Air De Havilland Beaver provided transport to and from the mine.

Hecla Greens Creek Mining Company (HGCMC) representatives present during inspection: Dave Landes (Sr. Environmental Engineer), Brian Erickson (Surface Operations Manager), and Dale Butikofer (Sr. Civil Engineer). Gabe Hayden (Stage 3 Phase 1 Construction Manager contracted by HGCMC) was present during portions of the inspection.

Regulators present during inspection: Edward Gazzetti (US Forest Service), Charlie Cobb (Alaska Department of Natural Resources (ADNR)), David Schade (ADNR), and David Wilfong (ADNR).

Site inspection included several stops along A and B access roads with a primary focus on Pond 7 and Pond 10. The Tailings Disposal Facility (TDF), 1.4-mile A-Road Sand Pit (Sand Pit), Pond 23, and Ponds A-D were also inspected.

ACTION ITEMS

- HGCMC must comply with state of Alaska regulations and requirements.

GENERAL COMMENTS

HGCMC appears to be operating the Pond 7 Dam out-of-compliance with Certificate of Approval to Operate a Dam # FY2013-9-AK00307 (COA to Operate). Additionally, construction is occurring on Pond 7 without ADNR's approval to modify a dam. ADNR Dam Safety has issued a temporary COA to Operate, which will be valid until August 12, 2017, in order to allow HGCMC time to come into compliance.



Due to a water shortage within their reservoir, AEL&P has reduced the amount of power supplied to HGCMC by half. As a result, the mine is currently generating on-site power as needed.

Surface exploration activities expected to start mid-June.

A AND B ACCESS ROADS

A and B access roads are in good shape and are being maintained properly according to Appendix 8, Section 3, of the Plan of Operations. There are no obvious signs of gross erosion on either access road.

TAILINGS DISPOSAL FACILITY (TDF)

Tailings placement continues along the eastern edge of the Stage 3 Expansion Area (Photo 1). HGCMC crews place class 1 waste rock (low sulfur content) and organic material (i.e. peat) on inactive faces of the tailings facility to mitigate erosion and fugitive dust risk. Organic material for this project is sourced from a peat storage area located within the TDF.

POND 7

HGCMC temporarily lowered Pond 7's water level and storage capacity to an elevation of 128' above sea level (ASL) during excavation and construction along its southern barrier (Photo 2). The barrier abuts the north end of Pond 10, and was drilled, blasted, and excavated to install water pipelines and a flow control structure. Crews placed a liner between the ponds within a day of the start of construction to limit the risk of Pond 7 overflowing into an unlined area.

The flow control structure will house a series of pipes and flow meters, and will manage water entering the pond system from the mine property by directing it to either Pond 7 or Pond 10 (Photo 3). Upon completion of construction, a series of four 36" culverts will run adjacent to the flow control structure. These culverts will sit at an elevation of 137' ASL and will allow free flow of water between the two ponds. It is worth noting that while Pond 10 is fully lined, HGCMC does not currently have authorization to operate it.

POND 10

Unlike Pond 7's single-liner design, Pond 10 is lined with primary (upper) and secondary (lower) membranes, both made of 80mm HDPE. A drainage layer between the membranes has the ability to convey potential leakage to a small pipe housed in Wet Well 11 where a transducer monitors water levels and can notify HGCMC personnel if a leak exists (Photo 4). Perforated piping beneath the secondary membrane drains groundwater to Wet Well 11 to relieve pressure caused by upwelling.

A 24" intake pipe in Pond 10 has the ability to convey water to Wet Well 10 (Photo 5). From there, it can be pumped through pipelines that will tie into the Water Treatment Plant once Pond 10 construction is complete.



POND 23

Area is active and tidy (Photo 6). Water from Pond 23 is conveyed either to the Mill for recycling or to Pond 7 for eventual treatment and subsequent discharge into Hawk Inlet.

PONDS A-D

Pond A, B, C, and D, are active and tidy.

1.4-MILE A-ROAD SAND PIT

The Sand Pit area was partially filled with organic material (overburden) taken from Pond 10 during its construction in the fall of 2016. HGCMC overestimated the space they needed for overburden storage, resulting in a large volume of unused space within the pit. Since October 2016, water has been accumulating within the unused space (Photos 7-9) (See IR #'s 376 and 377). HGCMC believes the organic material placed in the pit has created a relatively impermeable layer and, as a result, slowed drainage. Since this inspection, HGCMC has used a pump to draw down the water impounded within the pit.

FOLLOW UP ITEMS

- Monitor Pond 7 and Pond 10 compliance.
- Monitor water level in Sand Pit.

PHOTOS

(More images available upon request)



Photo 1. Looking east towards Stage 3 Expansion Area.



Photo 2. Looking south towards the barrier dividing Pond 7 and Pond 10. Storage capacity of Pond 7 was temporarily limited during construction. Four culverts (elevation 137' ASL) will convey water between the ponds once construction is complete.



Photo 3. Once completed, this concrete flow control structure will monitor and distribute water conveyed from the mine property. Water from Pond 23 will eventually flow around the southern edge of the TDF and into this area, where it can be diverted to either Pond 7 or Pond 10. Four 36" culverts, located west (to the left) of this structure will connect the two ponds.



Photo 4. Wet Well 11. Transducer within small black pipe can monitor leakage between primary and secondary membranes. Groundwater from beneath secondary membrane drains into the main portion of Wet Well 11.



Photo 5. Looking south into Pond 10. A service layer of sand allows maintenance within the pond. Black intake pipe in the foreground can convey water to Wet Well 10 (located west of the pond).





Photo 6. Pond 23 collects water and can convey it either to the Mill for recycling or to Pond 7 for eventual treatment and subsequent discharge.



Photo 7. Sand Pit during September 2016 inspection. Note organic material covering entire pit floor and very little ponding at the surface. Photo faces south.



Photo 8. Sand Pit during October 2016 inspection. Note ponding in background. Photo faces north.



Photo 9. Sand Pit during May 2017 inspection. Water level appears similar to that in October 2016 (Photo 8), although compaction of organic material has occurred since then. Photo faces north. HGCMC has since dropped the water level through pumping.

Thanks to HGCMC for a safe visit.

U.S. Forest Service Officer: /s/ Edward Gazzetti

