INSPECTION REPORT: GREENS CREEK MINE

Tongass National Forest Minerals Group
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Date of Inspection: Thursday, June 8, 2017
Date of Report: Friday, July 7, 2017
USDA Forest Service Inspector: Richard Dudek

Ranger District: Admiralty National Monument, Juneau Ranger District
Weather Conditions: Partly cloudy. Temperature: mid 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 provided a Beaver floatplane to and a Cessna 185 floatplane from site.

Mitch Brooks (Environmental Engineer, Hecla Greens Creek Mining Company) accompanied Richard Dudek (Geologist, US Forest Service), Eddie Gazzetti (Hydrogeologist, US Forest Service), and Don MacDougall (Special Uses, US Forest Service).

The site inspection included the A and B access roads, 1350 adit, 920, Site 23, 7.4-mile B-road (Killer Creek Bridge), Waste Site E, 3.4–mile B-road (Falls Creek Bridge), 3.0-mile (Zinc Creek Bridge), Tailings Disposal Facility (TDF),Young Bay, Pit 7 (A-road), and the Sandpit (A-road).

ACTION ITEMS

- 3.2-mile B-road culvert: Sediment filters need to be installed.
- 3.4-mile B-road Bridge: Sand bags are still in the creek and need to be removed.

ACCESS ROADS A /B

Access roads are in adequate condition and comply with the HGCMC (Appendix 8 Road Operations and Maintenance Plan).

1350 ADIT

The pump for the 1350 area was in place for the summer months (Photo 1). Since the installation of the trench and pump, water quality testing results from FWMP site 13 show that zinc levels have decreased. The water collected in the 1350 trench/sump is pumped into the 1350 adit and then piped to Pond A. The water will be treated and discharge under the current APDES permit.

920 AREA
The flow for Greens Creek (Photo 2) was 88 cubic feet per second (cfs), and HGCMC Surface Operations are properly maintaining the 920 portal bridge (Photo 3).

The 920 warehouse area was tidy and in order (Photo 4).

The construction for the 920 area contact water drainage is completed (Photos 5-6). The improvements made will help minimize maintenance of the area. The contact water will be routed to Pond A, and then piped to Pond 7 for treatment and discharged under the current APDES permits.

SITE 23
HGCMC continues to place class 2/3 waste rock (Photo 7) at this site (Appendix 1; Section 3.1).

7.4-mile B-road Bridge (Killer Creek Bridge)
Surface Operations will be installing splashguards along the bridge (Photos 8-9) once the other B-road bridges are completed. The splashguards will help prevent sediments from accumulating on the rails and splash over from vehicle traffic on the bridges.

Some of the wear layer boards for the bridge need to be replaced (Photo 10), and the downhill side abutment of the bridge requires a more effective liner to prevent sediments from entering into the creek (Photo 11).

In 2018, HGCMC has plans to replace 3.4-mile B-road Bridge (Falls Creek Bridge). During the construction for the bridges, additional work will be done to improve BMP structures for sedimentation collection. In 2019, HGCMC plans to replace the 7.4-mile B-road Bridge (Killer Creek Bridge).

WASTE SITE E
The material stockpiled (Photo 12) at Waste site E is from the construction of the 920 area. The lined retention pond has an electric fence (Photo 13) around the perimeter to prevent wildlife from entering the pond. During the site visit, reddish color seepage was observed on the western side of the stockpile (Photo 14). HGCMC annually monitors Site E's downgradient water quality and reports in the Annual Inactive Reports and quarterly reports as part of the Integrated Waste Management Permit. Since the monitoring began in 2003, the pH remains neutral at Site E.

3.4-mile B-road Bridge (Falls Creek Bridge)
Surface Operations have installed splashguard along the rails of the bridge (Photo 15). Some of the bridge wear layer boards need to be replaced (Photo 15), and sedimentation is still occurring below the bridge (Photos 16).

In 2016, high flows washed out the sandbags below the bridge. The sandbags are still in the creek and need to be removed (Photo 17). HGCMC is working on a safety plan for personnel during removal of the sandbags.

3.0-mile B-road Bridge (Zinc Creek Bridge)
The new splashguards (Photo 18) attached to the rails for Zinc Creek Bridge.

The settling ponds and rock check dams for a culvert at 3.2-mile B-road require improvements (Photos 19-20). Turbid water was observed after the BMP structures and possibly entering into the forest

(Photos 21-22). Sediment filters should be installed to capture sediments that pass through the rock check dams.

The 3.1-mile B-road removable sediment screen needs to be cleaned out (Photo 23). Sediment accumulation has exceeded the maximum capacity for the screen (75%), and is no longer effectively containing sediments.

TDF AREA
The construction for Pond 10 is near completion (Photo 24).

A concrete surge flow (Photo 25) was constructed between Pond 7 and Pond 10 to allow water to flow from one to another in the event of a major storm occurs.

HGCMC continues to place tailings in the S3P1 southern end of the TDF area (Photo 26). Approximately 145.592 yd^3 of material has been placed in the S3P1 area (including 1175 yd^3 of process sand).

YOUNG BAY
This site was well kept and orderly.

PIT 7
There has been no recent activity at this location (Photo 27).

SAND PIT (A-ROAD)
HGCMC Surface Operations installed a pump to remove water inside the sand pit (28). The accumulation of water is from surface runoff and wet soils in the pit. The water is being pumped into the riprap channel, then into a culvert, and finally into the forest duff.

FOLLOW UP ITEM
3.2-mile B-road culvert
TDF area construction/operations

PHOTOS
(Images available upon request

Photo 1. Pump and trench located in the 1350 area.

Photo 2. Greens Creek (920 area).

Photo 3. 920 bridge.

Photo 4. 920 warehouse area.

Photo 5. 920 ore pad/warehouse improved contact water drainage (Image 1 of 2).

Photo 6. 920 area improved culvert for routing contact water to Pond A (Image 2 of 2).

Photo 7. Site 23 class 2/3 waste rock.

Photo 8. 7.4-mile B-road Bridge (Killer Creek Bridge).

Photo 9. Sediment build up on the rails for 7.4 mile B-road Bridge.

Photo 10. Boards for the wear layer need to be replaced (7.4-mile B-road Bridge).

Photo 11. The downhill side abutment (7.4-mile B-road Bridge).

Photo 12. Site E (B-road).

Photo 13. Site E's retention pond with an electric fence around the perimeter.

Photo 14. Reddish color seepage was observed on the west side of Site E's waste rock pile.

Photo 15. 3.4-mile B-road bridge (Falls Creek Bridge).

Photo 16. Sediment accumulation underneath the 3.4-mile B-road Bridge (Falls Creek Bridge).

Photo 17. Sandbags are still in Falls Creek.

Photo 18. 3.0-mile B-road Bridge (Zinc Creek Bridge).

Photo 19. 3.2-mile B-road culvert.

Photo 20. Sediment filters need to be installed.

Photo 5. Turbid water was observed beyond the rock check dams (Image 1 of 2).

Photo 6. Turbid water in the vegetation (image 2 of 2) (3.2-mile B-road culvert).

Photo 7. 3.1-mile B-road removable sediment screen.

Photo 8. TDF area Pond 10.

Photo 9. The concrete flow control structure was constructed between Ponds 7 and 10 (TDF area).

Photo 10. HGCMC continues to actively place tailings at the East Ridge and S3P1 area of the TDF.

Photo 11. Pit 7.

Photo 12. Sand Pit.

Thanks to HGCMC for a safe visit.
U.S. Forest Service Officer: /s/ Richard Dudek