



INSPECTION REPORT: GREENS CREEK MINE

Tongass National Forest Minerals Group
8510 Mendenhall Loop Rd
Juneau, AK 99801
(907) 789-6275 – office
(907) 586-8808 – fax

Date of Inspection: Friday November 18, 2016
Date of Report: Thursday December 1, 2016
USDA Forest Service Inspector: Richard Dudek

Ranger District: Admiralty National Monument
Weather Conditions: Sunny Temperature: mid 20's

Exploration in accordance with operating plan	Not Applicable
Timber removal following timber sale contract	Not Applicable
BMPs for erosion control	Satisfactory
Water Quality BMPs	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 transportation (Cessna 185) to and from the site.

Mitch Brooks (Environmental Engineer, Hecla Greens Creek Mining Company (HGCMC)) accompanied Richard Dudek (United States Forest Service (USFS)) and Kate Kanouse (Alaska Department of Fish and Game (ADF&G)).

This inspection included A/B access roads, 1350 area, 920 area, Site 23, 7.4 mile B-road Bridge, Fish Pass, Falls Creek Bridge, Zinc Creek Bridge, Tailings Disposal Facility (TDF), Pit 7, and the 1.4 mile A-Road Sand Pit.

ACTION ITEMS

- 7.4 mile B-road Bridge: Repair or replace liner on the downhill side abutment.
- 7.4 mile B-road Bridge: Remove sediment accumulation on the splashguard rails.
- Falls Creek Bridge: Sand bags washed out, some sand bags remain downstream of the bridge.
- Falls Creek Bridge: Remove sediment accumulation on the splashguard rails and underneath the bridge.
- Zinc Creek Bridge: White precipitate was observed in the abutment drain.

NOTE WORTHY ITEMS

In early 2017, HGCMC will be installing an autonomous dust-suppressing mist system at the TDF. HGCMC is currently using a number of dust mitigation control measures such as fixed wind fences, polymers, water, and minimizing the active placement areas.





ACCESS ROADS

Both A and B access roads were in good condition and comply with HGCMC's BMP plan for road maintenance (Appendix 8, Table 8).

1350 AREA

HGCMC Surface operations (Photo 1) are properly maintaining the 1350 adit. A pump for the 1350 caisson was removed to prevent ice damage during the winter (Photo 2).

920 AREA

The flow rate for Greens Creek (Photos 3-4) on 11/18/2016 was 32.4 cubic feet per second (cfs). The 920 Bridge (Photo 5) is being maintained by HGCMC Surface operations. The 920 warehouse storage containers (Photo 6) were tidy and all chemical and petroleum products were properly stored within secondary containment (Photo 7).

SITE 23

Site 23 is currently the only active location for waste rock storage. The Class-1 (Photo 8) waste rock is stockpiled separately from the Class-2 and 3 waste rock (Appendix 1 Integrated Monitoring Plan page 3-1). During the site visit, a bulldozer (Photo 9) was compacting Class-2 and Class-3 waste rock in the active lift area.

7.4 MILE B-ROAD BRIDGE (KILLER CREEK)

It was identified in previous inspections that a silt fence on the downhill side abutment (Photos 10) needs to be replaced in order to prevent sediments from flowing into Killer Creek. HGCMC is aware of this issue, and are currently investigating mitigation options. The liner underneath the bridge on the uphill side abutment (Photo 11) is in good working condition. HGCMC Surface operations continue to monitor sediment accumulation. Sediments are removed when accumulation is greater than 50 percent of the structure's design depth (2015 BMP Plan Appendix 5 page BMP 24-25).

FISH PASS

The reconstruction of the fish passage on Greens Creek (Photo 8) was a required mitigation included in 2013 TDF Expansion Final Environmental Impact Statement and Record of Decision. The construction included the installation of three concrete, steel-capped weirs (Photos 12-13). In 2012, the Alaska Department of Fish and Game (ADF&G) issued a fish permit (FH-11-1-0123) to HGCMC. This permit gives HGCMC the authorization to maintain the fish pass in perpetuity. Prior to the reconstruction of the fish pass, Bio-monitoring observed juvenile Coho 3 miles upstream of the fish pass. Yearly Bio-monitoring at Greens Creek will continue upstream to determine the success of fish passage.

FALLS CREEK BRIDGE

Sand bags were installed underneath the bridge (Photo 14) as a mitigation to prevent sediments from entering Falls Creek. During an inspection on 10/07/2016, it was documented the sand bags were washed out (Photo 15). HGCMC is currently investigating the safest method for removing the washed out sand bags. HGCMC will continue to monitor sediment accumulation underneath the bridge and remove the sediments when necessary. Surface Operations are maintaining a temporary barrier (Photo 16), on the downhill/streamside of the bridge. This barrier complies with the BMP recommendations for silt fencing (2015 BMP plan page BMP 12-13). Although a long-term solution is desired, this temporary barrier has shown to be effective.





ZINC CREEK BRIDGE

The 3.1 mile B-road removable sediment screen (Photo 17) should be frequently monitored to prevent turbid water runoff. The screen is replaced when sediment accumulation is 50 percent of the design structures depth (2015 BMP plan Appendix 5 page 24-25). HGCMC recently installed weed free straw wattles (Photo 18) near the standpipe drain. The straw wattles will help filter out sediments from the drainpipe prior to entering the forest. A small amount of a white precipitate was observed at the uphill/downstream abutment drainpipe (Photo 19). HGCMC Environmental Operations are currently investigating the cause of the precipitate.

TDF AREA/POND-10

The temporary liner was installed at Pond-10 to prevent erosion and any reworking of the site this spring. Due to recent high winds, sections of a temporary liner have been separated (Photo 20). HGCMC continues to deposit tailings in the expansion area (Photos 21-22). Construction for Pond-10 has stopped, and contractors have moved off site for the winter.

0.9 MILE B-ROAD

The bedrock that was blasted out during the construction of Pond-10 is stockpiled at this location (Photo 23). The rock was crushed and will be used as fill material on the southern sections of the outer TDF access roads.

PIT 7

HGCMC has contoured and placed mulch over the disturbed slopes (Photo 24).

SAND PIT

All overflow (Photo 25) and stormwater runoff (Photo 26) is being diverted into a riprap channel (Photo 27) to filter out the sediments. The water flows from the riprap channel (Photo 28) into a culvert, then into the forest duff.

Photos (Additional photos available upon request)





Photo 1. 1350 adit used for mine ventilation and as a secondary escape way.



Photo 2. 1350 caisson's pump was removed for the winter.



Photo 3. Greens Creek (920 area).



Photo 4. Greens Creek weir located at the 920 area.



Photo 5. 920 bridge and adit.



Photo 6. 920 warehouse area. All the storage containers were tidy.



Photo 7. 920 warehouse chemical storage container with secondary containment.



Photo 8. Site 23 Class-1 waste rock stockpile.



Photo 9. Class-2 and 3 waste rock stockpile.



Photo 10. 7.4 mile B-road Bridge (Killer Creek Bridge).



Photo 11. A liner is in place underneath the uphill side of the bridge.



Photo 12. Greens Creek Fish Pass.



Photo 13. Image shown is one of three weirs at the Fish Pass.



Photo 14. Image is from a previous inspection on 9/02/2016 at Falls Creek Bridge.



Photo 15. Sand bags underneath Falls Creek Bridge were washed out.



Photo 16. A temporary wooden barrier located on the downhill/downstream side of Falls Creek Bridge.



Photo 17. 3.1 mile B-road removable sediment screen.



Photo 18. Weed free straw wattles installed near the standpipe drain.



Photo 19. White precipitate observed in the Zinc Creek Bridge uphill abutment drain.



Photo 20. Sections of temporary liner covering Pond-10 have separated.



Photo 21. Tailings are being deposited in the TDF expansion area.



Photo 22. TDF expansion area.



Photo 23. 0.9 mile B-road stockpile area.



Photo 24. Pit 7 has been contoured and mulched.



Photo 25. Sand Pit.



Photo 26. A trench at the Sand Pit is used for conveying stormwater runoff.



Photo 27. Riprap channel at the Sand pit is primarily used for filtering out sediments from stormwater runoff.



Photo 28. Stormwater runoff is routed from the riprap channel to a culvert, then into the forest duff.

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