



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: Thursday June 16, 2016
Date of Report: Monday July 11, 2016
USDA Forest Service Inspector: Richard Dudek

Ranger District: Admiralty National Monument
Weather Conditions: Sunny. Temperature: Mid 70's °F.

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 a Cessna 206 floatplane for transportation to and from the site.

Mitch Brooks (Environmental Engineer, Hecla Greens Creek Mining Company (HGCMC)) accompanied Dave Wilfong (Alaska Department of Natural Resources (ADNR)), Matthew Reece (Geologist, US Forest Service), and Richard Dudek (Geologist, US Forest Service).

This inspection included A/B access roads, Pit7, Sand Pit, 1350 area, 920 area, Falls Creek Bridge, Zinc Creek Bridge, Site 23, Tailings Disposal Facility (TDF), and the 0.9 mile marker B-road.

ACTION ITEMS

- **Falls Creek Bridge: Mitigations for sediment capture along and under Falls Creek Bridge.**
- **Falls Creek Bridge: Removal of sediments under the bridge.**
- **3.2 mile B-Road: BMP removable sediment bag needs cleaning.**

*****NOTE*** Due to the previous inspection report's submission within two days prior to the 6/16/16 inspection, not all action items listed from the 5/19/16 report were addressed. HGCMC is aware of these action items and will continue to work with the Forest Service to resolve these issues.**





A/B ACCESS ROADS

The access roads are in adequate condition and comply with Hecla Greens Creek's BMP plan for road maintenance (Appendix 8, Table 8.1). During the inspection, HGCMC's water truck was applying water to the access roads for dust control. Along sections of 4.1-4.7 and 7.9-8.2 B-road, HGCMC was experimenting with dust control polymers. HGCMC reported the polymer applied did not yield the results as anticipated to help reduce dust caused by wind and vehicle traffic. HGCMC stated further analysis and meteorological data is required in order to assess the effectiveness of the polymer. HGCMC is currently exploring different polymers to test for dust control. The USFS will have to re-approve the use of any polymers for the next dust control test. Currently, there is no set date as to when the next dust control study will take place.

PIT 7

Pit 7 is located at 1.9 mile on A-Road. Some material that is being excavated from the Sand Pit is being stockpiled at Pit 7. The amount of sand pit material that has been stockpiled at Pit 7 is 74,400 cubic yards with a total of approximately 120,000 cubic yards of material being stored there. (Photo 1-2). This site was tidy and in order.

SAND PIT

A portion of the excavated material from the Sand Pit (Photos 3-4) will be used for the TDF expansion. The site was active with contractors excavating material needed for the TDF. The material that will be excavated for the construction of Pond-10 and will be transported to the Sand Pit for storage, and potentially used as reclamation material.

1350 ADIT

The 1350 adit is inactive and currently serves as a ventilation system and secondary escape way for the underground mine. During the site inspection on 5/19/16, it was reported that the 1350 area was in need of slight improvements. After that report was submitted, HGCMC surface maintenance crews hydroseeded the exposed rock, and the sump (Photo 5) near the adit has been mucked.

Along the 1350 access road, six water bars have been re-constructed and are in good working order. There was a minor erosional feature near the 960 area (Photo 6) observed on a hill slope along the access road. Surface Operations are aware of this and will hydroseed the exposed the area.

HGCMC's Environmental Manager, Chris Wallace stated high levels of zinc have been reported at the FWMP Site 13, which is located near the 1350 east drainage. These zinc concentrations at Site 13 are in exceedance of the Alaskan Water Quality Standard (AWQS). The high levels of zinc may be a result from previous reclamation activities at the 1350 area. Since the reclamation activities have concluded, zinc concentrations has at times, been in exceedance. To gain a better understanding, HGCMC is going to collect water samples at the toe of the fill material east of the 1350 adit. HGCMC will also continue to monitor Site 13 for any changes in zinc concentrations over time. If zinc levels continue to remain high in the 1350 area, HGCMC has plans to install a sump system to capture surface water runoff from the nearby hill slope (Photo 7) and divert the water to the 1350 adit.

920 AREA

The 920 warehouse area was tidy and is properly maintained by HGCMC personnel (Photo 8). During the site visit, shipments of supplies were being staged for placement into the appropriate storage containers (Photo 9). The empty hydraulic container and totes (Photo 10) will be shipped off site. The rock check dam and sump across from DB-01 appear to be in good working order (Photo 11). The 920 Bridge





splashguards are effectively working to prevent sediments from entering into Greens Creek (Photo 12). Chris Wallace stated the repairs for the 920 broken concrete overlay (Photo 13) would begin in late June. HGCMC personnel will need to remove boulders and other debris (Photo 14) across from the broken concrete in order to re-route mine traffic during the repairs for the concrete overlay.

HGCMC is in the initial phase of beginning metal recycling at the mine site (Photo 15).

SITE 23

Site 23 is the location for Class 1, 2, and 3 waste rock stockpiles. Class 1 rock is stockpiled separately from Class 2 and 3 rock. The Class 1 rock (Argillite) is designated as acid neutralizing and is placed on the outer slopes of the tailings pile at the TDF (Photo 15). The Class 2 waste rock is designated as potentially being acid neutralizing or acid generating. Class 3 waste rock is designated as having acid generation potential. Both Class 2 and 3 waste rock will be co-disposed of with tailings at the TDF during mine closure. During the site inspection, HGCMC personnel were leveling an area for additional waste rock storage (Photo 16). This site was active and in order.

FALLS CREEK BRIDGE

Falls Creek Bridge is located at 3.4 mile B-road. In the 5/19/16 inspection report, sediments were identified accumulating around the bridge abutments (Photos 17-18) and permeating through the wood decking for the bridge. HGCMC Environmental and Surface Operations are developing a plan for the safest way for removing the sediments from under the bridge.

A nearby culvert that was covered in sediments, and listed as an action item from the 5/19/16 inspection report, has been mucked by HGCMC Surface personnel (Photo 19).

ZINC CREEK BRIDGE

The additional mitigation systems previously constructed in early 2016 are effectively working by eliminating turbid water from entering into the forest. The 3.2 mile B-road removable sediment screen appears to be full of sediments, and needs to be cleaned out (Photo 20). The rock check dams and sumps (Photos 21-22) are in good working order and the standpipe drain was discharging clean water into the forest (Photos 23-24). The hydroseeding has helped with establishing dense grasses needed for filtering sediments from surface water runoff.

TDF

The TDF expansion is progressing. Contractors have installed the liner for the TDF expansion, and were in the process of installing the service sand layer (Photos 25-26). The HGCMC's APDES Outfall 002 (Photos 28-29) pH for water discharge was 8.2. The permitted pH range for an APDES permit for effluent water is 6.5-9.0. The TDF water treatment plant was neat and orderly (Photo 30).

0.9-MILE B-ROAD

Approximately 28,000 cubic yards of material from the Sand Pit is stockpiled at this location (Photos 31-32). Due to additional capacity at Pit 7, less space was needed in this location than anticipated by HGCMC. A proposal is being developed to use this location as a lay down area to replace current laydowns within the tailings expansion area. This site is active and in order.

NOTE WORTHY ITEMS:

HGCMC has plans to conduct scaling at the 920 area and 2-mile road locations in the next couple of months.



Photos (Additional photos available upon request)



Photo 1. Pit 7 additional material stockpiled from the Sand Pit.



Photo 2. Pit 7 stockpiled excavated material from the Sand Pit.



Photo 3. Sand Pit excavation material used for the TDF expansion.



Photo 4. Sand Pit excavation material used for the TDF expansion.



Photo 5. 1350 adit sump is mucked when necessary.



Photo 6. 1350 access road erosion along the hill slope.



Photo 7. Possible location for a sump to divert water to the 1350 adit sump.



Photo 8. Storage containers are tidy and with secondary containment.



Photo 9. Shipment of hydraulic fluid tote staged for storage next to the containment curtain.



Photo 10. Empty containers will be shipped off site.



Photo 11. Rock check dam and sump across from BD-01.



Photo 12. 920 Bridge.



Photo 13. Dash line is the location of the broken 920 concrete overlay.



Photo 14. The rectangle is the location (920 area) that will be excavated in order reroute mine traffic.



Photo 15. HGCMC's proposed recycling area (re-muck area).



Photo 16. Site 23 Class 1 (Argillite) waste rock.



Photo 16. Bull dozer leveling an area for Class 1, 2, and 3 stockpiles.



Photo 17. Falls Creek Bridge.



Photo 18. Sediments depositing below the edge of the bridge abutments.



Photo 19. Nearby culvert has been mucked.



Photo 20. 3.2 mile B-road removable sediment bag.



Photo 21. Zinc Creek Bridge rock check dam.



Photo 22. Zinc Creek Bridge sump.



Photo 23. Zinc Creek Bridge standpipe.



Photo 24. Zinc Creek Bridge standpipe drain.



Photo 25. New liner installed for the TDF expansion.



Photo 26. Service sand layer being placed over the geotextile.



Photo 27. Class 1 rock is placed on the outer slopes at the TDF.



Photo 28. APDES Outfall 002 Control pH.



Photo 29. APDES Outfall 002 Monitor pH.



Photo 30. TDF water treatment plant.



Photo 31. 0.9 mile B-road.



Photo 32. 0.9 mile B-road. The material stockpiled here is base material for the new lay down.



Photo 33. 1.0 mile B-road realignment.

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