

INSPECTION REPORT: GREENS CREEK MINE

Tongass National Forest Minerals Group
8510 Mendenhall Loop Rd
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Date of Inspection: Monday January 25, 2021
Date of Report: 02/08/2021
USDA Forest Service Inspector: Casey Loofbourrow

Ranger District: Admiralty National Monument, Juneau Ranger District
Weather Conditions: Sunny. Temperature: Mid 20'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

A de Havilland DH3 Otter operated by Ward Air was used to access the mine.

To comply with COVID-19 protocols, FS personnel did not enter any buildings and maintained a 6-foot social distance buffer with Hecla Greens Creek Mining Company (HGCMC) personnel.

Cameron Sell (Environmental Engineer, HGCMC) and Jeff Swanson (Surface Operations General Foreman, HGCMC) accompanied Casey Loofbourrow (Geologist, USFS), Richard Dudek (Geologist, USFS), and William Dryer (Hydrologist, USFS).

The site inspection included: The B access road, the 920 area, 7.4 mile B-road Bridge (Killer Creek Bridge), MSE Wall 5.4 mile B-road, 3.4 mile B-road Bridge (Falls Creek Bridge), 3.0 mile B-road Bridge (Zinc Creek Bridge), and the Tailings Disposal Facility (TDF).

ACTION ITEMS

- **Verify cleanup of small spill visible in 920 parking area (photo 8).**

NOTEWORTHY ITEMS

- **Impacts from an early November ice storm include downed transmission/fiber optic lines (Photo 13) and numerous downed trees (Photos 14-16). Surface Operations is working to re-hang fiber optic lines and may need to remove additional hazard trees.**

- **Impacts from the early December rain event include a landslide that occurred below 7.5 mile B-road (photos 9-12), a landslide that crossed the B-road at 3.7 mile (Photos 17-18), and erosion throughout the B-road ditch that exposed water pipes (Photos 19-20). Surface operations is planning to cover the pipes. Mitigations may be required to ensure the safety and continued operation of the B-road at the 7.5 mile landslide.**

920 AREA

The recorded flow rate for Greens Creek (Photos 1-3) was 13 cubic feet per second (cfs). The 920-area water withdrawal rate from Greens Creek was approximately 1.5-cfs.

The 920 Bridge's splash guards are working as designed to prevent sediment splash over the bridge from vehicular traffic.

Degrit basin DB01 was operating (Photo 4).

Good housekeeping practices were observed at the 920 warehouse (Appendix 5 BMP Plan page 39). All petroleum/chemicals observed were properly stored within appropriate secondary containment (Photos 5-6). Ore was being placed on ore pad adjacent to the mill (Photo 7). A powder absorbent used to clean an apparent fluid spill was observed in parking area (Photo 8)

POND C

Not inspected due to snow cover and below freezing temperatures.

STORM IMPACTS

Impacts from an early November ice storm, as well as an early December rain event, were present at several locations along the B-road. These include a landslide below 7.5 mile B-road (Photos 9-12), downed cables and fiber optic lines (Photo 13), numerous downed trees (Photos 14-16), a landslide that crossed 3.7 mile B-road (photos 17-18), and erosion throughout the B-road ditch that exposed water pipes (Photos 19-20). HGCMC plans to re-hang cables and cover the exposed pipes. They are also discussing possible mitigations measures for the B-road at the 7.5 mile landslide such as road realignment, and may need to remove additional hazard trees that could obstruct the road.

5.4 B-ROAD MSE WALL

The mechanically stabilized earth (MSE) wall is functioning as intended. Data collected from the surveying instruments, and inclinometers are analyzed by HGCMC Engineering to monitor soil creeping and slope stability. No recent movement was reported by HGCMC staff.

7.4-MILE B-ROAD BRIDGE (KILLER CREEK BRIDGE)

The bridge's splashguards are functioning as designed preventing sediment splash-over from vehicular traffic (Photo 21).

3.4-MILE B-ROAD BRIDGE (FALLS CREEK BRIDGE)

The bridge's splashguards are working as intended by preventing sediment splash-over from traffic (Photo 22).

ROAD CONDITIONS

The B-road was in adequate condition. The adjacent ditch experienced erosion during the December storm and exposed pipes that will be covered at a later date by Surface Operations (see above section “Storm Impacts”). A-road was not travelled on during this inspection.

3.0-MILE B-ROAD BRIDGE (ZINC CREEK BRIDGE)

The bridge’s splashguards are functioning as designed, preventing sediment splash over from vehicular traffic (Photo 23). The uphill side abutment BMPs are frozen and not currently receiving surface water (Photo 24).

TAILINGS DISPOSAL FACILITY (TDF) AREA

During the inspection, atmospheric conditions were consistent with previous dusting events from the tailings facility. Dust screens were present at the toe of the active placement area (Photo 25).

At the time of the inspection, Pond 7 (Photo 26) was collecting contact water, and Pond 10 (Photo 27) was collecting direct precipitation.

The TDF water treatment plant was receiving approximately 1,300-gpm of influent water and was treating/discharging 900-gpm.

Surface Operations continue to deposit tailings in the S3P1 expansion area (Photo 28).

FOLLOW UP ITEMS

**Monitor status of repairs to B-road ditch erosion, 7.5 mile landslide, and downed cables.
Ensure small spill site at 920 parking area is properly mitigated by the following inspection.**

PHOTOS (Image files available upon request)



Photo 1. Greens Creek at the 920 weir looking upstream.

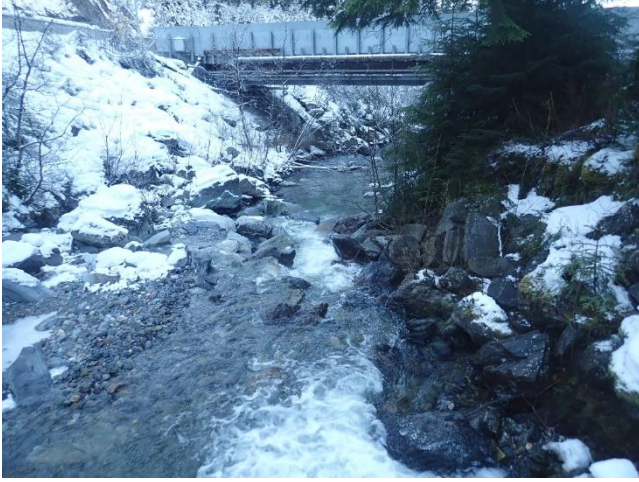


Photo 2. Greens Creek at the 920 weir looking downstream at Greens Creek bridge.



Photo 3. The 920 Greens Creek weir.



Photo 4. Degrit basin DB01.



Photo 5. 920 warehouse storage container with appropriate secondary containment.



Photo 6. 920 warehouse storage container.



Photo 1. 920 ore pad and mill exterior.



Photo 8. Red sawdust that appears to have been used to clean up small spill at 920 parking area.



Photo 9. Crown (upper edge) of 7.5 mile landslide.



Photo 10. B-road adjacent to 7.5 mile landslide.



Photo 11. Photo provided by HGCMC on December 9, 2020. 7.5 mile landslide below B-road.



Photo 12. Photo provided by HGCMC on December 9, 2020. 7.5 mile landslide, B-road, and Greens Creek.



Photo 13. Cables on the ground adjacent to the B-road due to storm impacts.



Photo 14. Area of snapped and uprooted trees near 4.7 mile B-road from November ice storm.



Photo 15. Area of snapped and uprooted trees near 4.7 mile B-road from November ice storm.



Photo 16. Area of snapped and uprooted trees near 4.7 mile B-road from November ice storm.



Photo 17. Site of 3.7 mile B-road landslide from December storm.

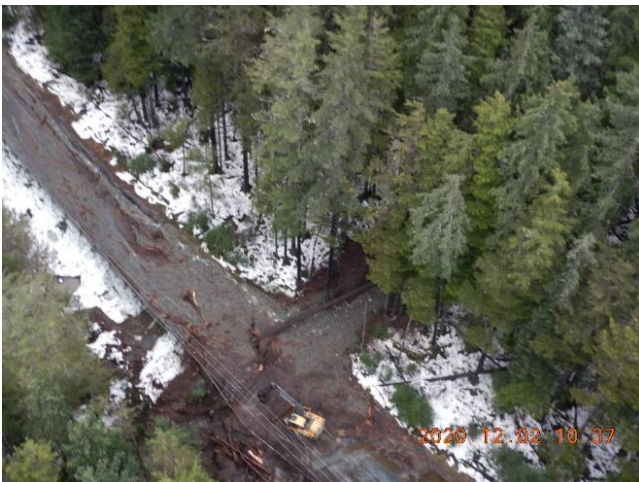


Photo 18. Photo provided by HGCMC showing 3.7 mile B-road landslide being cleared on December 2, 2020.



Photo 19. Pipes exposed in B-road ditch due to December storm erosion.



Photo 20. Pipes exposed in B-road ditch due to December storm erosion.



Photo 21. 7.4 Mile B Road Bridge (Killer Creek Bridge).



Photo 22. The 3.4 Mile B-road Bridge (Falls Creek Bridge).



Photo 23. The 3.0 mile B-road bridge (Zinc Creek bridge).



Photo 24. 3.0 mile B-road uphill abutment BMP's.



Photo 25. Tailings being placed in S3P1 area with fugitive dust control screens in place.



Photo 26. Pond 7 receiving mine site contact water.



Photo 27. Pond 10 with snow and meltwater.



Photo 28. TDF S3P1 area. Personnel were actively placing tailings during the inspection.

Thanks to HGCMC for a safe visit.

U.S. Forest Service Officer: /s/ Casey Loofbourrow