



INSPECTION REPORT: KENSINGTON GOLD MINE

Tongass National Forest Minerals Group
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Date of Inspection: Thursday August 4, 2016
Date of Report: Thursday August 18, 2016
USDA Forest Service Inspector: Richard Dudek

Ranger District: Juneau Ranger District
Weather Conditions: Cloudy Temperature: low 60'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 transportation (De Havilland Beaver Floatplane) to/from site.

Kevin Eppers (Environmental Manager, Coeur Alaska) accompanied David Wilfong (Alaska Department of Natural Resources (ADNR)), Matthew Reece (Minerals Program Manager, Forest Service), Edward Gazzetti (Hydrogeologist, Forest Service), and Richard Dudek (Geologist, Forest Service).

This inspection included Kensington Port, Fuel Depot, Access roads, Comet Development Pile, Comet water treatment plant, Sherman Creek Outfall, Ophir Creek, Reclamation test plots, Avalanche berm, Pit 4, and the TTF area.

ACTION ITEMS:

- **Comet water treatment plant: Improvements to stormwater diversion ditch near Pond-1.**
- **Sherman Creek Outfall: White material continues to be observed in Sherman Creek.**
- **Ophir Creek: Ophir Creek is migrating towards the Comet development pile.**
- **Ophir Creek: Silt fencing requires some re-routing near the northern end of the Comet development pile.**
- **Pit 4: Graphitic Phyllite (GP) stockpile liner requires immediate repairs on the bottom left section.**





NOTEWORTHY ITEMS:

The current advancement for the Jualin adit is approximately 3100 feet.

Surface drilling exploration has begun with a six total exploration drill holes for 2016 (2016 Surface Exploration CE) (Photo 1).

KENSINGTON PORT

The Kensington port was actively being worked on during this inspection. A diversion ditch was reconstructed with a liner, a culvert, and multiple sumps for capturing stormwater runoff from the road (Photos 2-3). The silt fence and sumps at the port need to be frequently maintained and monitored by Coeur Alaska's Surface operations.

FUEL DEPOT

Construction has begun for the approved Fuel Depot (Photo 4). Contractors have installed the liner and service sand layer for the fuel depot. The pipeline stands are in place from the Kensington port to the fuel depot (Photo 5). The fuel tanks for the fuel depot will be arriving in mid-August.

ACCESS ROADS

Potholes have formed in sections of Spur road near Pit 7 are in need of repair. The other access roads are in adequate condition and comply with Kensington's BMP plan (Table 4-4 page C-16).

COMET DEVELOPMENT PILE

In early 2016, Coeur Alaska began expanding the southwest section of the toe, and is currently adding waste rock (Photos 6). Coeur Alaska recently surveyed the southwest toe expansion and determined the estimated total amount of waste rock deposited is 1,140,000 tons.

COMET WATER TREATMENT PLANT

The Comet water treatment plant is currently treating 1100 gallons of water per minute. Pond-1 was active and receiving influent water (Photo 7) and Pond-2 was inactive during this inspection. It was documented on 5/18/2016 (Inspection report 143) that a diversion ditch near Pond-1 was washed out. The diversion ditch still needs major improvements to facilitate better water conveyance (Photo 8). During the site visit, containers of liquid chemicals (Photo 9) used for the water treatment process were being placed in storage containers with secondary containment (Photo 10). All chemicals and petroleum products were properly stored within appropriate secondary containment.

SHERMAN CREEK OUTFALL

The white material continues to be observed at this location (Photos 11-12), and has been observed and documented often at this location since September 2014. Coeur Alaska is currently bench testing different flocculants and coagulants for the white material settling out of solution prior to the water treatment process. Coeur Alaska continues to monitor for the white material at the downstream water sampling locations. Coeur Alaska has also placed clean rocks in the creek to monitor any white material adhering these rocks.

OPHIR CREEK

Ophir Creek is one of four principle tributaries of Sherman Creek and it flows adjacent to the Comet development pile. Silt fencing and a waste rock berm are in place to prevent sediments and rockslides from entering into the creek (Photos 13-14). A short section of silt fencing has been undermined by the creek and is no longer functional, requiring some re-routing or replacement (Photo 15). The migrating





creek should be frequently monitored to ensure stability of the toe of the development pile, and mitigated if necessary.

RECLAMATION TEST PLOTS

The three waste rock reclamation test plots (Photo 16) were developed as a quantitative approach to growth potential for native plant species. The same seed mixture was applied to all three plots, the difference being the soil amendments for each plot. The three plots did show grass was germinating, however further review is required by plant specialists to evaluate the success.

AVALANCHE BERM

Directly above the Jualin mill site, Coeur Alaska has begun constructing an avalanche berm road to dissipate the energy from a possible avalanche (Photo 17). The Jualin adit waste rock is being used for constructing the berms. Culverts were installed for water conveyance due to the berms crossing an ephemeral stream.

PIT 4

There are two tears observed at the bottom left section of a liner that covers the foundation berm for a GP stockpile (Photo 18). These repairs need to be completed in a timely manner to ensure the tears do not migrate towards the GP material. The construction of the structural steel for the Pug plant (Photo 19) is almost completed. The Pug plant is scheduled to come online in late August. The Pug plant will mix the GP material with cement and Diorite then transport the mixed cement underground for backfilling the stopes.

The X-ray sorter (Photo 20) located at Pit 4 is for reclaiming mineralized pebble rock. Since the commissioning of the x-ray sorter, approximately 5000 tons of pebble rock has been reclaimed and sent back to the Jualin mill for processing. The X-ray sorter was inactive during this site inspection.

TTF AREA

The water level for the TTF was 693.6 feet. An area of shallow water was identified within the TTF (Photo 21). This may indicate sections of the TTF may not be under nine feet of water. The nine feet of water cover is the minimum water cover within the TTF for all stages of development (Coeur Alaska's Plan of Operations (page 70)).

At the northern section of the TTF, acid rock drainage (ARD) (Photo 22) is pumped to a series of holding tanks. The ARD is transferred from the second holding tank to the seep plant for water treatment. The treated water is discharged into an infiltration gallery near the TTF. The sludge waste collected during the water treatment process is used as backfill for the underground stopes.

The TTF water treatment plant is currently treating approximately 900 gallons of water per minute. The storage containers for chemicals and petroleum products were properly stored with secondary containment (Photo 23).

PHOTOS (Additional photos available upon request).





Photo 1. Surface drilling pad.



Photo 2. Kensington port lined sump installed.



Photo 3. Located at the Kensington port a culvert was installed for water conveyance.



Photo 4. Fuel depot location, showing geotextile, liner, and service sand layer installed.



Photo 5. Fuel depot pipeline stands.



Photo 6. Comet development pile South-West toe expansion.



Photo 7. Comet water treatment plant Pond-1.



Photo 8. Diversion ditch is in need of major improvements.



Photo 9. Liquid chemicals are being offloaded and placed into storage containers at the Comet water treatment plant.



Photo 10. Storage container with secondary containment.



Photo 11. Sherman Creek outfall.



Photo 12. White material is adhering to rocks throughout the outfall.



Photo 13. Silt fencing between Ophir Creek and the Comet Development pile.



Photo 14. Image of the Comet development pile from Ophir Creek.



Photo 15. Silt fencing undermined by Ophir Creek near the toe of the Comet development pile.



Photo 16. The three reclamation test plots.



Photo 17. Berms are currently being constructed to dissipate the energy from a possible avalanche.



Photo 18. Tears in a liner for a GP stockpile.



Photo 19. Pug plant will be used for mixing GP material with cement and Diorite rock.



Photo 20. X-ray sorter.



Photo 21. TTF. Buoys to the right in the image is where the high spot was observed.



Photo 22. Northern TTF ARD catchment.



Photo 23. TTF storage containers.

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