

# **Mount Polley Mining Corporation**

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# March 12, 2015

Ministry of Environment Mining Operations Environmental Protection 2080 Labieux Rd. Nanaimo, BC V9T 6J9

# WEEKLY POST-TSF BREACH REPORT – WEEK OF MARCH 4 – 10, 2015

# **Water Management**

Polley Lake Dewatering	Polley Lake water elevation = 922.22 m (March 12 <sup>th</sup> )  Water levels are currently within the typical range. Polley Lake is frozen and all pumping infrastructure was removed in late November. Elevation surveys are being taken weekly.
TSF Water Management	previous weekly reports for an overview map of the system.
	No breaches of TSF water management systems occurred this week.

# **Sediment and Erosion Control Measures**

Silt Curtain	The turbidity barrier (silt curtain) installed in Quesnel Lake near the outlet of the new Edney (Hazeltine) Creek channel, downstream from the Lower Hazeltine Creek sedimentation ponds, is in good condition.
General	Environmental monitors are monitoring creek sediment and erosion control and reclamation work in Upper, Middle, and Lower Hazeltine Creek.
	This week 3,918 tonnes of tailings were removed from Hazeltine Creek and returned to the TSF. 3,073 tonnes of till were excavated from the Hazeltine Creek channel area and stockpiled for future reclamation use. 28,480 tonnes of rock construction material was hauled to the Hazeltine Creek areas for use in reclamation work.
	Rock liner material is low sulphur rock from the Cariboo Pit and a sampling program is in place to verify the chemistry of the rock. A sampling program to verify chemistry of creek subgrade material after tailings have been removed is also in place. Screening of material for creation of fish habitat features at an on-site gravel pit commenced this week.

Upper Hazeltine Creek	Site preparation for the Polley Lake outlet structure was completed and construction contractors are on site and setting up their equipment. It is anticipated that construction will start next week. The water licence application was submitted on March 6 <sup>th</sup> to the Ministry of Forests Lands and Natural Resource Operations.  In Reach 2, construction of the flood plain and rocking in of the channel is ongoing and has been completed to within 100 metres of the Gavin Lake Road bridge.
Middle Hazeltine Creek	In Reach 3, upgrades to water management systems, including increasing pump capacity, were completed this week. Additional rocking in of access roads was completed.
Lower Hazeltine Creek	In Reach 4 channel construction downstream of the Ditch Road bridge, including creation of fish habitat features and placement of spawning gravel, was completed. Channel construction in the 50 metres upstream of the Ditch Road bridge is awaiting more favourable weather and runoff conditions.
	Recontouring and application of wood chip mulch and coarse woody debris for reclamation purposes has commenced. Capping of exposed glacial till deposits to reduce erosion is ongoing.

#### **TSF Construction**

# TSF Cons<u>truction</u>

The amendment to permit M-200 approving repair of the TSF breach to manage 2015 freshet was received from the Ministry of Mines on December 17<sup>th</sup>. An update on work being completed under this approval is as follows:

- Foundation preparation and material placement for Perimeter Embankment buttressing is ongoing.
- Upstream Fill material placement for the cut-off wall is ongoing.
- Compacted Rockfill material placement for the cut-off wall is ongoing.
- CSM (cutter soil mixing) Wall construction is ongoing.
- Foundation preparation and placement immediately downstream of the cut-off wall (Phase 2 footprint) is ongoing.

Project components that have been completed under this approval are:

- Bulk excavation of the North and South Abutments (the embankments to the north and south of the breach).
- Construction of seepage collection drains in the cut-off wall foundation footprint.
- Foundation preparation for the cut-off wall.
- Foundation Filter blanket material placement for the cut-off wall.
- Foundation Transition blanket material placement for the cut-off wall.
- Extension of the seepage collection drains through the Phase 1 footprint.
- Construction of a pad and laydown area for the CSM Contractor to erect infrastructure and mobilize equipment.
- Foundation preparation immediately downstream of the cut-off wall (Phase 1 footprint).
- SAA instrumentation installation.
- Mobilization of CSM Contractor infrastructure and equipment.
- North Abutment tie-in material placement to the 950m elevation.
- North Abutment accelerated construction fill placement in the Phase 1 footprint to the 950m elevation to facilitate commencement of the CSM Wall construction.
- Cut-off Wall Aggregate material placement for the cut-off wall.
- Transition material placement for the cut-off wall.
- Buttress placement immediately downstream of the cut-off wall (Phase 1 footprint).

# **Water Quality Monitoring Program**

Water Quality Monitoring Sites	<ul> <li>The water quality monitoring program currently consists of weekly samples at:</li> <li>QUR-1 (Quesnel River at the Quesnel River Research Centre)</li> <li>HAC-08 (Hazeltine Creek upstream of the sedimentation ponds)</li> <li>HAC-01b (Hazeltine Creek at the outlet of the sedimentation ponds)</li> <li>EDC-02 (Edney Creek downstream of the new confluence with Hazeltine Creek below the sedimentation ponds and just upstream of Quesnel Lake).</li> </ul>
	All scheduled sampling was completed this week, as well as supplemental sampling at EDC-01 (Edney Creek just upstream from the confluence with Hazeltine). Weekly monitoring of Quesnel Lake will commence next week to monitor spring turnover.
	Weekly sampling at site HAC-05 (Hazeltine Creek at the Gavin Lake Road) has been temporarily discontinued because active reclamation and erosion control works are ongoing in this section of the creek. Note that daily turbidity monitoring at this site is carried out by environmental monitors.
Continuous Monitoring	The monitoring program also includes a sonde (datalogger) that is deployed in the Quesnel River at monitoring site QUR-1. The sonde measures field parameters (turbidity, pH, specific conductance, dissolved oxygen, and temperature) every 15 minutes. A second sonde which measures the same parameters at the same frequency is deployed at the outlet of the Lower Hazeltine Creek sedimentation ponds.
Results	Figure 1 shows turbidity time series graphs for Lower Hazeltine Creek since commissioning of the sedimentation ponds on December 12 <sup>th</sup> . From February 15 <sup>th</sup> onward (after Edney Creek was diverted from the sedimentation ponds into its new channel, which converges with Hazeltine Creek downstream of the sedimentation ponds), data are shown for Hazeltine and Edney Creeks upstream and downstream of their confluence. Figure 1(a) includes the inflow to the sedimentation ponds for comparison and Figure 1(b) represents outflows only to allow use of a smaller axis scale and more clear representation of these turbidity values.
	Figure 2 shows a time series graph of turbidity at site QUR-1. Turbidity data are from laboratory analysis completed by ALS Environmental.

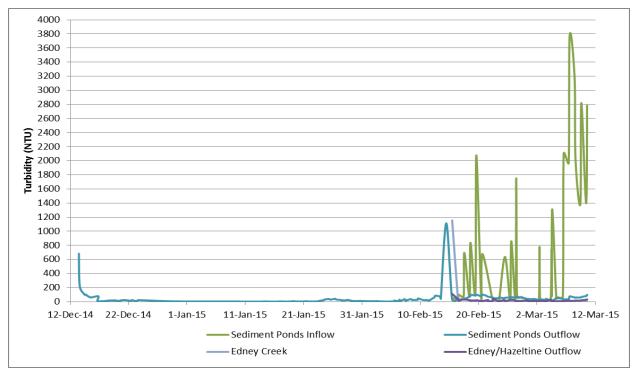


Figure 1(a). Turbidity time series graph for Hazeltine Creek upstream of the sedimentation ponds (February 15<sup>th</sup> – March 10<sup>th</sup>), downstream of the sedimentation ponds (December 12<sup>th</sup> – March 10<sup>th</sup>), for Edney Creek in its new channel (February 15<sup>th</sup> – March 10<sup>th</sup>), and the combined Edney/Hazeltine Creek outflow into Quesnel Lake (February 15<sup>th</sup> – March 10<sup>th</sup>)

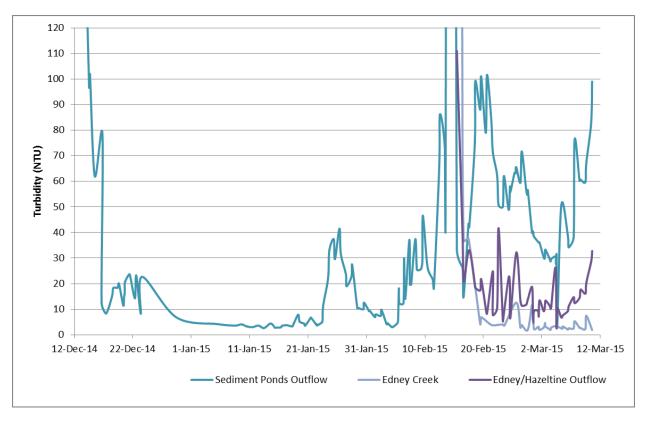


Figure 1(b). Turbidity time series graph for Hazeltine Creek downstream of the sedimentation ponds (December 12<sup>th</sup> – March 10<sup>th</sup>), for Edney Creek in its new channel (February 15<sup>th</sup> – March 10<sup>th</sup>), and the combined Edney/Hazeltine Creek outflow into Quesnel Lake (February 15<sup>th</sup> – 10<sup>th</sup>)

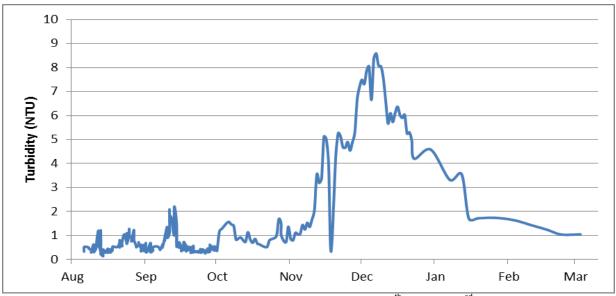


Figure 2. Turbidity time series at sample location QUR-1 (August 6<sup>th</sup> – March 3<sup>rd</sup>)

# **Publication of Environmental Monitoring Results & Remediation Updates**

Mount Polley will continue to present interpreted environmental monitoring results and updates on remediation work on the <u>Mount Polley Updates</u> page of the Imperial Metals website (www.imperialmetals.com). No updates were posted this week; however, reference to one recent post was missed in previous reports. The <u>TSF Breach Rehabilitation Strategy</u> was posted on February 20, 2015.

### **Government and Stakeholder Engagement**

- Weekly Ministry of Environment update meeting.
- Conversation with Ministry of Environment representatives regarding plans for dust suppression in the summer months.
- Tour of Hazeltine Creek was provided to First Nations representatives and their consultants.