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Ministry of Environment
Mining Operations Environmental Protection
2080 Labieux Rd.
Nanaimo, BC
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WEEKLY UPDATE REPORT – SEPTEMBER 23RD – 29TH, 2015

Government, First Nations and Stakeholder Engagement

Publications and Website Updates	Mount Polley will continue to present interpreted environmental monitoring results and updates on remediation work on the Mount Polley Updates page of the Imperial Metals website (www.imperialmetals.com). • Last week's update report to the BC Ministry of Environment (MoE) was posted this week. • The Photo Gallery was updated this week.
Engagement Activities and Communications with Regulators	Activities relating to government, First Nations, and stakeholder communication and engagement this week included: • The weekly MoE update call on September 23rd. • A First Nations Implementation Council Meeting on September 23rd. • A tour of fish rehabilitation work in Edney Creek with local high school students on September 23rd. • Participation in the Horsefly Salmon Festival on September 26th – 27th (engaged with over 80 community members).

Rehabilitation Work

Silt Curtain	The turbidity barrier (silt curtain) installed in Quesnel Lake near the outlet of the constructed Edney Creek channel is in good condition. MPMC is making arrangements with a contractor to have the turbidity barrier removed for winter, following cleaning out of the Hazeltine Creek sedimentation ponds (which will require diversion of Hazeltine Creek into Edney Creek).
Monitoring	MPMC staff members conduct environmental monitoring when work in the Hazeltine Creek riparian zone is occurring.
Hazeltine Creek Rehabilitation	Hazeltine Creek rehabilitation work carried out this week included: • Removal of tailings adjacent to Hazeltine Creek on the east side of the floodplain in Reaches 1 and 2 (between Polley Lake and the Gavin Lake Forest Service Road bridge) continued. This work includes mixing of the ground surface and creation of natural features, • Falling of trees in preparation for replacement of the Gavin Lake and Horsefly-Likely Forest Service Road bridges. Planning carried out this week included: • Engineering preparations for replacing the Gavin Lake and Horsefly-Likely Forest Service Road bridges. • Preparations for the fall re-vegetation program in Hazeltine Creek reclamation areas. • Bids on a contract for the first phase of dead tree removal in areas adjacent to Hazeltine Creek have been received and are being evaluated.

Water Management

Polley Lake	Polley Lake water elevation = 922.20m (September 29th) The Polley Lake weir valve remained open this week to allow approximately 0.01 m^3/s of outflow from Polley Lake into Hazeltine Creek.
Water Management	No changes to the site water management system occurred this week. No releases of water to the environment occurred this week. Please refer to the May 28th, 2015 weekly report for an overview map of the TSF water management system.
Springer Pit	The total volume of tailings deposited in the Springer Pit as of September 29th is 573,382 tonnes (415,494 m^3 including water retained in tailings). Water Elevations (September 29th): • Springer Pit = 1020.31m (+0.12m from last week) • Groundwater well GW12-2a = 1013.52m (+0.06m from last week) • Groundwater well GW12-2b = 1013.67m (+0.08m from last week) • Groundwater well GW15-1a = 1020.87m (+0.37m from last week) • Groundwater well GW15-1b = 1020.80m (+0.45m from last week) • Groundwater well GW15-2a = 1022.15m (+0.18m from last week) • Groundwater well GW15-2b = 1022.53m (+0.20m from last week) A map of the groundwater well locations is included as Figure 1 of the July 23rd weekly report. Note that the suffix "a" indicates the deep well in the pair, and the suffix "b" indicates the shallow well in the pair. Monthly water quality results for parameters of interest from the Springer Pit supernatant and adjacent groundwater wells will be included in this report as they become available. The Springer Pit groundwater wells were not monitored as scheduled in August due to equipment issues; a new pump system was ordered and arrived on site September 1st. Purging and sampling of wells was carried out from September 2nd to 9th. Results from groundwater wells GW12-2a/b, were presented in last week's report. Results from GW15-1a/b and GW15-2a/b are presented in Tables 1 and 2, respectively, along with results from the previous sample to provide context. September sampling of the wells commenced this week.
Discharge System	Work related to installation of infrastructure for the proposed short-term water discharge plan was carried out this week including: • Armouring of the West Ditch to reduce entrainment of suspended solids in water that will be routed to the water treatment plant (WTP) continued. • Ongoing work on the pad for the WTP, including constructing berms and working on a new access road. • Fusing of the discharge pipelines at the Quesnel Lake shoreline was completed. • Construction of a loading ramp and construction of two anchors for lifting the outflow pipes into the lake (above the Quesnel Lake high water mark).

Table 1. GW15-1a and GW15-1b water chemistry results (July – September, 2015)

	GW15-1A		GW15-1B	
Date Sampled	**23-Jul-2015**	**9-Sep-2015**	**23-Jul-2015**	**9-Sep-2015**
Physical Tests				
Conductivity (µS/cm)	299	322	520	559
Hardness (as CaCO3) (mg/L)	24.8		231	
pH - in situ (pH)	9.95	8.17	7.75	7.72
Anions and Nutrients				
Nitrate (as N) (mg/L)	<0.0050	<0.0050	1.19	1.09
Sulfate (SO4) (mg/L)	64.8	71.4	114	118
Dissolved Metals				
Aluminum (Al)-Dissolved (mg/L)	0.0062	0.0037	<0.0030	<0.0030
Arsenic (As)-Dissolved (mg/L)	0.00485	0.00586	0.00131	0.00164
Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	0.0000061	0.0000054	<0.0000050
Copper (Cu)-Dissolved (mg/L)	0.00109	0.00085	0.00063	<0.00050
Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum (Mo)-Dissolved (mg/L)	0.0281	0.0221	0.00535	0.00548
Selenium (Se)-Dissolved (mg/L)	0.000997	0.000400	0.0172	0.0150

Table 2. GW15-2a and GW15-2b water chemistry results (July – September, 2015)

	GW15-2A		GW15-2B	
Date Sampled	**27-Jul-2015**	**9-Sep-2015**	**27-Jul-2015**	**9-Sep-2015**
Physical Tests				
Conductivity (µS/cm)	261	214	344	333
Hardness (as CaCO3) (mg/L)	71.8		134	
pH - in situ (pH)	8.95	8.09	8.05	8.15
Anions and Nutrients				
Nitrate (as N) (mg/L)	<0.0050	<0.0050	0.02	0.14
Sulfate (SO4) (mg/L)	48.9	39.7	73	68
Dissolved Metals				
Aluminum (Al)-Dissolved (mg/L)	0.0047	0.0035	0.0038	0.0035
Arsenic (As)-Dissolved (mg/L)	0.00299	0.00325	0.00269	0.00261
Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Copper (Cu)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050
Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030	<0.030
Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum (Mo)-Dissolved (mg/L)	0.0359	0.0402	0.04090	0.04240
Selenium (Se)-Dissolved (mg/L)	0.000171	0.000088	0.0001	0.0001

Environmental Monitoring Program

Water Quality Monitoring Program

The current water quality monitoring program is outlined in the table below. All scheduled sampling was completed in the month of September.

Area	Monitoring Type	Frequency	Stations
Polley Lake	Samples	Monthly	P1, P2
	Profiles	Bi-monthly	P1, P2
Hazeltine Creek	Samples	Weekly	HAC-01c
		Monthly	HAC-05, HAC-08, HAC-10
Edney Creek	Samples	Monthly	EDC-01
Quesnel Lake	Profiles	Weekly	QUL-54a, QUL-55a, QUL-56a
	Profiles	Bi-monthly	QUL-21a, QUL-18, QUL-66a, QUL-2a, QUL-79
	Profiles	Monthly	QUL-40a, QUL-120a
	Samples	Weekly	QUL-55
	Samples	Monthly	QUL-2a, QUL-18, QUL-40a, QUL-120a
Quesnel River	Samples	Bi-monthly	QUR-1
	Field Parameters	Continuous	QUR-1

Please refer to previous weekly reports, such as the May 7th, 2015 report, for a map of these sampling locations.

Water Quality Monitoring Results

Figure 1 is a time series graph of field turbidity readings in lower Hazeltine Creek upstream of the sedimentation ponds and downstream of the ponds, at the outflow into Quesnel Lake. The graph shows data since construction and armouring of the new Hazeltine Creek channel was completed in mid-May.

Figure 2 shows a turbidity and temperature profile from this week at site QUL-55a, a shallow site near the mouth of the new outflow channel from the lower Hazeltine Creek sedimentation pond to Quesnel Lake.

Figure 3 shows a time series graph of turbidity readings at site QUR-1 in the upper Quesnel River. Turbidity data are from laboratory analysis completed by ALS Environmental. This chart will be updated every second week, as per the monitoring frequency of this station in the sampling program.

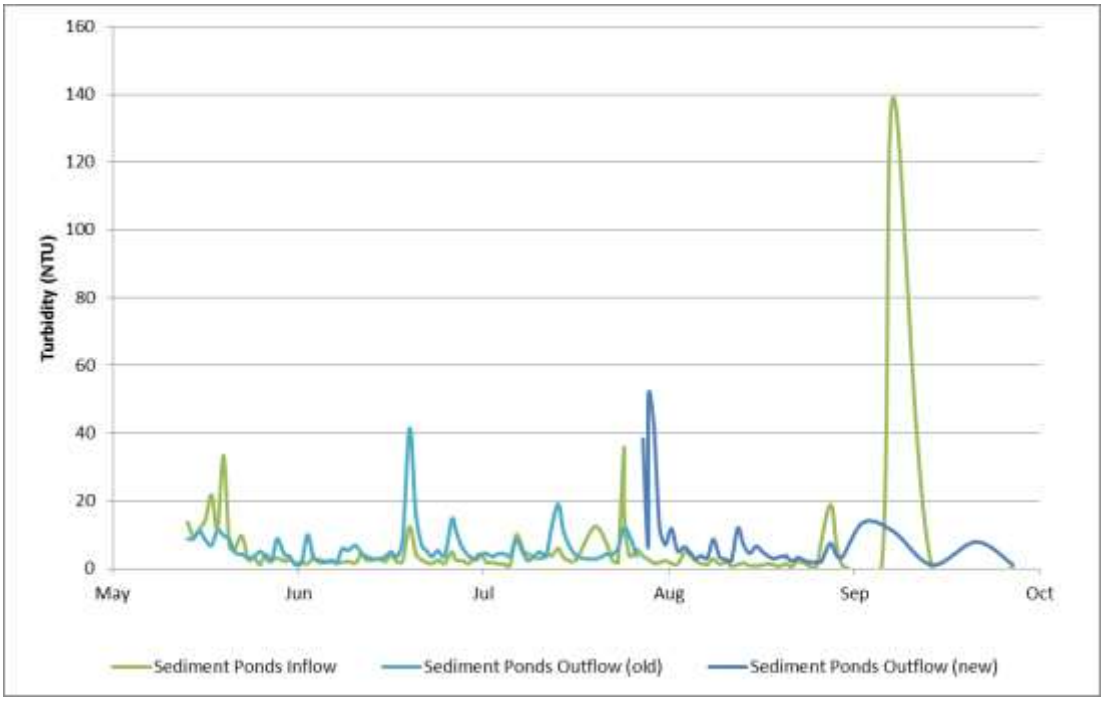

Figure 1. Time series graph for May 13th – September 28th showing turbidity levels at monitoring locations in lower Hazeltine Creek

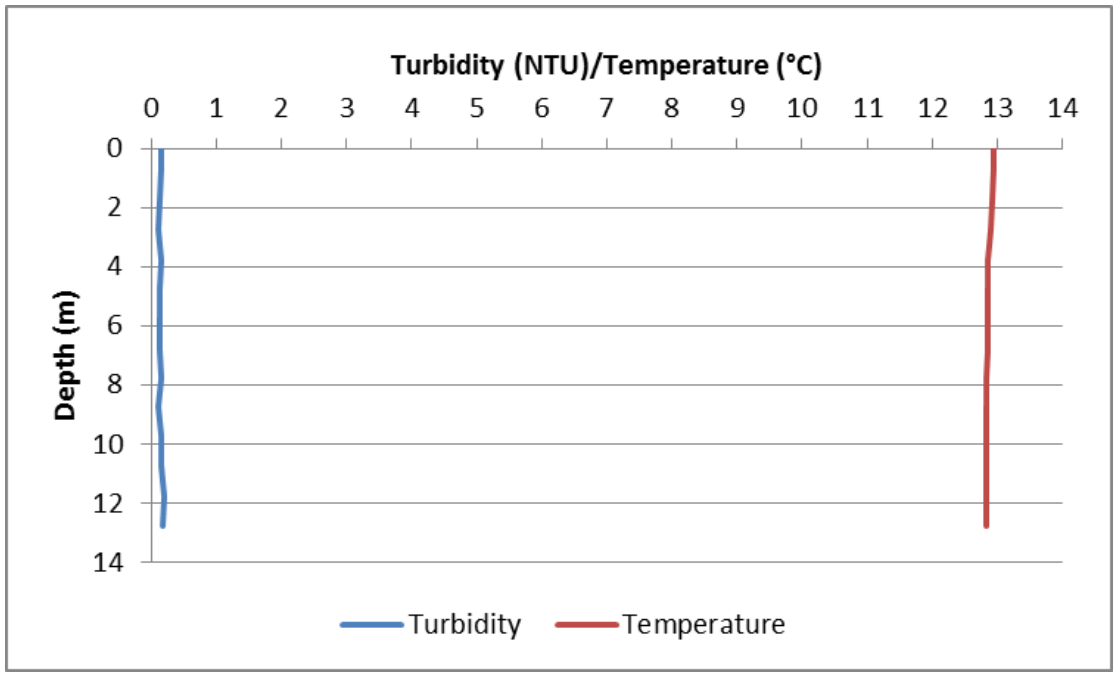

Figure 2. Turbidity and temperature profiles at station QUL-55a (shallow site at the mouth of the new outflow channel from the Hazeltine Creek lower sedimentation pond) on September 28th

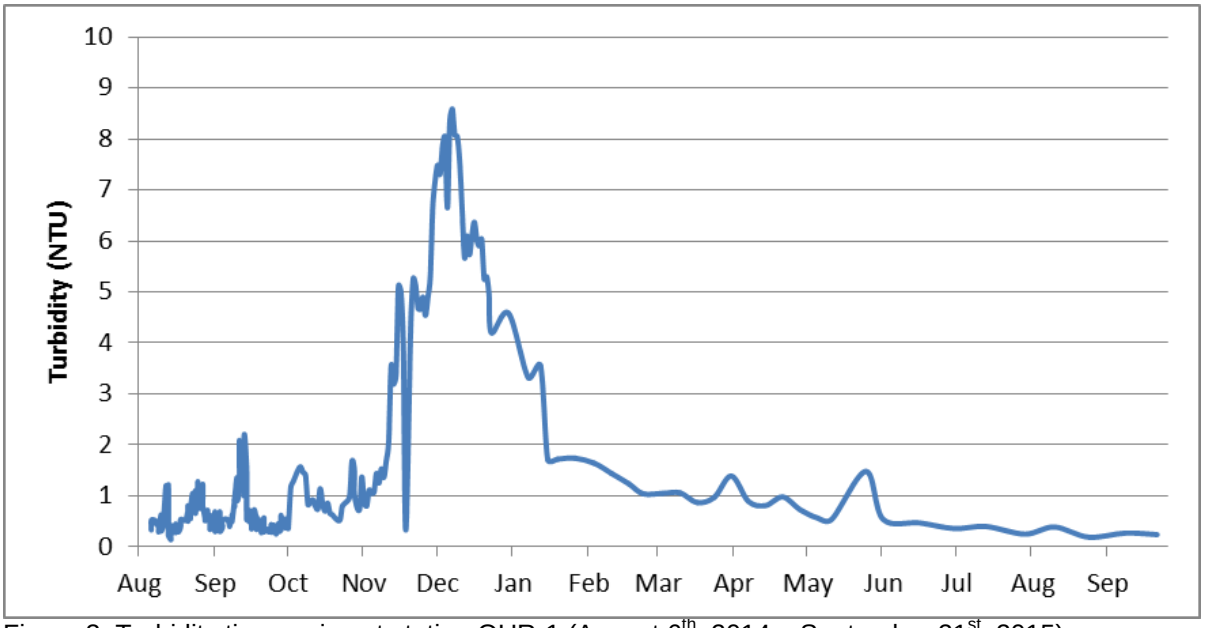

Figure 3. Turbidity time series at station QUR-1 (August 6th, 2014 – September 21st, 2015)