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October 3, 2013

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Re: August 2013 – Monthly Monitoring Report for Water Licence 2AM-DOH0713

This report is comprised of monitoring requirements as set out in Schedule J of water licence 2AM-DOH0713 and additional requirements from AANDC. Licence items include:

- Part D (Conditions Applying to Construction) Items 7 and 19;
- Part E (Conditions applying to Water Use) Item 1;
- Part G (Conditions Applying to Waste Management and Waste Management Plans) Items 3(e) and 3 (b), Item 21 (a) and 22 (e);
- Part J (Conditions Applying to General and Aquatic Effects Monitoring) Items 12 and 14.

Other monitoring requirements stipulated in the licence refer to facilities that have not been constructed. Doris Camp is currently operating in a care and maintenance phase with water management, drill exploration, and environmental compliance being the focus of current activities.

Part D: Conditions Applying to Construction

Item 7. Construction Monitoring

Construction activities did not take place this month.

Item 19. Surface Runoff Effluent Quality Limits

Turbidity checks were conducted daily during periods of melt (May and June) along areas that had been constructed in 2011-2012. In 2013, these checks were conducted near the diversion berm, the sumps, the north dam and the vent raise. No turbid runoff with the potential to reach a water body was noted. No checks were conducted in August as there as there was no longer any runoff at these locations.

Part E: Conditions Applying to Water Use

Item 1: Water Usage

There was no water usage from Doris Lake this month (Table 1). Water for camp use was withdrawn from Windy Lake as permitted by water licences 2BE-HOP1222 and 2AM-DOH0713. The volume of water extracted from Windy Lake and its water quality results are presented in the August 2013 2BE-HOP1222 monthly monitoring report.

Table 1: Water Usage from Doris North (m^3), August 2013

Parameters	Water Use
Water Source	Doris Lake
Geographical Coordinates	68°8'17.04" N, 106°36'52.68"W

Monthly Cumulative	0 m^3
Annual Cumulative	0 m^3
2AM-DOH0713 Permitted Water Volume (Total Annual)	480,000 m^3

Schedule J: Water Quality Monitoring at Water Intake

Monthly compliance samples were taken from monitoring station ST-7 (Doris Lake raw water) in accordance with the Schedule J requirements of the licence (Table 2).

Table 2: Monthly Compliance Sample Results for ST-7, August 2013

	Sample ID	**ST7-06AUG13**
	ALS ID	**L1343243-12**
	Sample Date/Time	**06-08-2013 9:10**
Parameter	**Unit**	**Results**
Conductivity (EC)	uS/cm	284
Hardness (as CaCO3)	mg/L	47.6
pH	pH	8.05
Total Suspended Solids	mg/L	<3.0
Ammonia, Total (as N)	mg/L	<0.050
Nitrate (as N)	mg/L	<0.050
Nitrite (as N)	mg/L	<0.050
Orthophosphate-Dissolved (as P)	mg/L	<0.0010
Phosphorus (P)-Total	mg/L	0.025
Cyanide, Total	mg/L	<0.0050
Cyanide, Free	mg/L	<0.0050
Aphanizomenon (Cyanophyceae)	cells/mL	25200
Total cyanobacterial cell count	cells/mL	44400
Limnothrix (Cyanophyceae)	cells/mL	7490
Planktolyngbya (Cyanophyceae)	cells/mL	8060
Pseudoanabaena (Cyanophyceae)	cells/mL	3650
Aluminum (Al)-Total	mg/L	0.0362
Antimony (Sb)-Total	mg/L	<0.00040
Arsenic (As)-Total	mg/L	<0.00040
Barium (Ba)-Total	mg/L	0.003
Beryllium (Be)-Total	mg/L	<0.0010
Boron (B)-Total	mg/L	<0.050
Cadmium (Cd)-Total	mg/L	<0.000010
Calcium (Ca)-Total	mg/L	9.98
Chromium (Cr)-Total	mg/L	<0.0010
Cobalt (Co)-Total	mg/L	<0.0020
Copper (Cu)-Total	mg/L	0.0013
Iron (Fe)-Total	mg/L	0.121
Lead (Pb)-Total	mg/L	<0.00010
Lithium (Li)-Total	mg/L	<0.010
Magnesium (Mg)-Total	mg/L	6.73
Manganese (Mn)-Total	mg/L	0.0282
Mercury (Hg)-Total	mg/L	<0.000020
Molybdenum (Mo)-Total	mg/L	<0.0050
Nickel (Ni)-Total	mg/L	<0.0020
Potassium (K)-Total	mg/L	2.14
Selenium (Se)-Total	mg/L	<0.00040
Silver (Ag)-Total	mg/L	<0.000020
Sodium (Na)-Total	mg/L	33.1

	Sample ID	**ST7-06AUG13**
	ALS ID	**L1343243-12**
	Sample Date/Time	**06-08-2013 9:10**
Parameter	**Unit**	**Results**
Thallium (Tl)-Total	mg/L	<0.00010
Tin (Sn)-Total	mg/L	<0.050
Titanium (Ti)-Total	mg/L	0.0013
Uranium (U)-Total	mg/L	<0.00010
Vanadium (V)-Total	mg/L	<0.0010
Zinc (Zn)-Total	mg/L	<0.0040
Calcium (Ca)-Dissolved	mg/L	8.55
Magnesium (Mg)-Dissolved	mg/L	6.37
Oil and Grease	mg/L	<1.0
Oil And Grease (Visible Sheen)		NO VISIBLE SHEEN
Microcystin	ug/L	<0.20

Part G: Conditions Applying to Waste Management and Waste Management Plans.

Item 1: Condition to Provide Notice of a Planned Discharge

On May 21, 2013 AANDC and the NWB were provided with a discharge notification for the discharge of ST4, ST5, ST6A, ST6B, and ST8.

Item 3(b): Conditions applying to sewage effluent quality

Monthly compliance samples were taken from monitoring station ST-8B (Sewage Treatment Plant Effluent) in accordance with the Schedule J requirements of the licence (Table 3).

Table 3: Monthly Compliance Sample Results for ST-8B, August 2013

		Sample ID	**ST8-06AUG13**	**Part G Item 3 (b)**	
		ALS ID	**L1343243-13**	**Maximum Average Concentration**	**Maximum Allowable Grab Sample Concentration**
		Sample Date/Time	**06-08-2013 8:47**		
Parameter	**Units**		**Results**		
pH	pH		7.13	6.5 - 9.0	9
Total Suspended Solids	mg/L		<3.0	100	100
Biochemical Oxygen Demand	mg/L		<2	80	80
Oil and Grease	mg/L		1.2	5	10
Oil And Grease (Visible Sheen)			No Visible Sheen	No Visible Sheen	No Visible Sheen
Fecal Coliform	CFU/ 100mL		<1	10,000	10,000

Sewage effluent discharge was sampled in August prior to entry into Glenn Lake (ST-9) and water quality results are presented in Table 4.

Table 4: Monthly Compliance Sample Results for ST-9, August 2013

	Sample ID	**ST9-06AUG13**
	ALS ID	**L1343243-14**
	Sample Date/Time	**06-08-2013 9:45**
Parameter	**Unit**	**Results**
BOD_5	mg/L	<2
TSS (mg/L)	mg/L	<3.0
Fecal Coliform	CFU/100mL	<1
pH (pH unit)	pH unit	7.7
Oil & Grease (Visible Sheen)		No Visible Sheen

	Sample ID	**ST9-06AUG13**
	ALS ID	**L1343243-14**
	Sample Date/Time	**06-08-2013 9:45**
Parameter	**Unit**	**Results**
Oil & Grease (mg/L)	mg/L	1.2

Item 3(e): Treated Sewage Effluent Release in cubic meters

This month, 277 m^3 of sewage effluent was discharged from the sewage treatment plant.

Item 21 (a) and Items 22 (c), (e): Sedimentation pond, land farm, and fuel containment sumps

As described in the 2012 Interim Water Management Plan, the Sedimentation Pond (ST-1) is being used as a collection pond for the water that accumulates in the Pollution Control Pond (ST-2), the two Underflow Sumps (STS1 and STS2), and occasionally from various berms and containments in the project area. The water in ST-1 is transferred to the Tailings Impoundment Area (TIA) when there is enough accumulated water for the pumps to operate effectively. At this time, no ST-1 water is being discharged to the tundra. Transfer of water from ST-1 to the TIA was initiated June 3, 2013 and the volume of water discharge to the TIA this month is presented in Table 5.

Table 5: Water in cubic meters (m^3) transferred from ST-1 to the TIA, August 2013

Parameters	**Water volume transferred from ST-1 to TIA (m^3)**
Monthly Cumulative	2287
Annual Cumulative	8325

The water quality results for ST-1 and ST-2 are shown in Table 6.

Table 6: Water Quality Data Summary for Monitoring Station ST-1 and ST-2, August 2013

	Sample ID	**ST1-05AUG13**	**ST2-05AUG13**
	ALS ID	**L1343243-1**	**L1343243-2**
	Sample Date/Time	**8/5/2013 1:45:00 PM**	**8/5/2013 2:07:00 PM**
Parameter	Units	Results	Results
Conductivity (EC)	uS/cm	6230	7700
Hardness (as CaCO3)	mg/L	1900	2510
pH	pH	7.91	7.84
Total Suspended Solids	mg/L	5	13
Ammonia, Total (as N)	mg/L	22.5	27.3
Nitrate (as N)	mg/L	91.9	122
Nitrite (as N)	mg/L	<0.50	<0.50
Sulfate (SO4)	mg/L	185	247
Cyanide, Total	mg/L	<0.0020	0.022
Cyanide, Free	mg/L	-	-
Aluminum (Al)-Total	mg/L	0.112	<0.060
Antimony (Sb)-Total	mg/L	<0.0010	<0.0020
Arsenic (As)-Total	mg/L	0.001	<0.0020
Barium (Ba)-Total	mg/L	0.11	0.0965
Beryllium (Be)-Total	mg/L	<0.0050	<0.010
Boron (B)-Total	mg/L	0.39	0.49
Cadmium (Cd)-Total	mg/L	0.00023	0.00032

Sample ID		ST1-05AUG13	ST2-05AUG13
ALS ID		L1343243-1	L1343243-2
Sample Date/Time		8/5/2013 1:45:00 PM	8/5/2013 2:07:00 PM
Calcium (Ca)-Total	mg/L	641	745
Chromium (Cr)-Total	mg/L	0.0064	<0.0020
Cobalt (Co)-Total	mg/L	0.0047	0.0058
Copper (Cu)-Total	mg/L	0.0089	0.0077
Iron (Fe)-Total	mg/L	0.67	<0.20
Lead (Pb)-Total	mg/L	<0.00050	<0.0010
Lithium (Li)-Total	mg/L	0.066	<0.10
Magnesium (Mg)-Total	mg/L	84.4	106
Manganese (Mn)-Total	mg/L	1.37	1.52
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020
Molybdenum (Mo)-Total	mg/L	0.0054	0.0081
Nickel (Ni)-Total	mg/L	0.0054	0.0066
Potassium (K)-Total	mg/L	29.3	35.4
Selenium (Se)-Total	mg/L	0.0036	0.0042
Silver (Ag)-Total	mg/L	<0.00010	<0.00020
Sodium (Na)-Total	mg/L	539	649
Thallium (Tl)-Total	mg/L	<0.00050	<0.0010
Tin (Sn)-Total	mg/L	<0.050	<0.050
Titanium (Ti)-Total	mg/L	0.0041	<0.0060
Uranium (U)-Total	mg/L	0.00161	0.00228
Vanadium (V)-Total	mg/L	<0.0010	<0.0020
Zinc (Zn)-Total	mg/L	0.133	<0.060
Calcium (Ca)-Dissolved	mg/L	621	823
Magnesium (Mg)-Dissolved	mg/L	84.1	110
Oil and Grease	mg/L	<1.0	<1.0
Oil And Grease (Visible Sheen)		NO VISIBLE SHEEN	NO VISIBLE SHEEN

No water was discharged from the landfarm (ST-4), the Doris tank farm (ST-5), or the Roberts Bay tank farms (ST-6A and ST-6B) this month.

Item 26, 27, 28 and Part J Item 8: Water Discharged from Tailing Impoundment Area

Discharge from the Tailing Impoundment Area began June 21, 2013. Prior to the initiation of the discharge, sampling at TL-1 (TIA at the pump), TL-2 (Doris Creek upstream), and TL-3 (Doris Creek downstream) was started June 4, 2013 and continued every two days after that for over two weeks. Following the start of discharge, sampling at TL-4 (TIA discharge end of pipe) was initiated, and sampling at TL-1, TL-2, TL-3 was continued every two days for two weeks then reduced to weekly. Samples at TL-10 (TIA deepest portion of lake) were taken August 19th, 2013 (see section Schedule J below for details).

Monthly water quality results for TL-1 are presented in Table 7, for TL-4 in Table 8, and for TL-2 and TL-3 in Table 11 at the end of this report.

Water collected from TL-4 was shown to be non-acutely toxic to trout or daphnia on August 13th, 2013.

Table 7: Water Quality Results for TL-1, July 2013

	Sample ID	TL1-05AUG13	TL1-12AUG13	TL1-19AUG13	TL1-19AUG13A	TL1-26AUG13
	ALS ID	L1343243-5	L1347018-1	L1350008-1	L1350008-8	L1354039-1
	Sample Date/Time	8/5/2013 5:53:00 PM	8/12/2013 6:07:00 PM	8/19/2013 9:35:00 AM	8/19/2013 9:45:00 AM	8/26/2013 9:00:00 AM
Parameter	Units	Results	Results	Results	Results	Results
Conductivity (EC)	uS/cm	205	212	231	227	221
Hardness (as CaCO3)	mg/L	52.2	52.1	55.9	56.4	53.3
pH	pH	7.86	7.8	7.65	7.67	7.76
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	132	139	147	144	124
Ammonia, Total (as N)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	mg/L	37.8	38.4	39.8	39.7	39.8
Nitrate (as N)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrite (as N)	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	<0.020	<0.020	0.02	<0.020	<0.020
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0093	0.007	0.0118	0.0099	0.0737
Antimony (Sb)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Arsenic (As)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Barium (Ba)-Total	mg/L	<0.0030	<0.0030	0.0038	<0.0030	0.0034
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	12	11.7	14	14.2	12.6
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Copper (Cu)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Iron (Fe)-Total	mg/L	0.167	0.298	0.342	0.341	0.185
Lead (Pb)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Lithium (Li)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
Magnesium (Mg)-Total	mg/L	5.58	5.94	6.2	6.37	5.76
Manganese (Mn)-Total	mg/L	0.0085	0.0262	0.0298	0.0297	0.008
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Molybdenum (Mo)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Potassium (K)-Total	mg/L	1.74	1.86	1.89	1.92	1.81
Selenium (Se)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	18.1	19.4	19.4	20.2	19.4
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Titanium (Ti)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0034

	Sample ID	TL1-05AUG13	TL1-12AUG13	TL1-19AUG13	TL1-19AUG13A	TL1-26AUG13
	ALS ID	L1343243-5	L1347018-1	L1350008-1	L1350008-8	L1354039-1
	Sample Date/Time	8/5/2013 5:53:00 PM	8/12/2013 6:07:00 PM	8/19/2013 9:35:00 AM	8/19/2013 9:45:00 AM	8/26/2013 9:00:00 AM
Uranium (U)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	<0.0040	<0.0040	<0.0040	0.0066	0.0053
Calcium (Ca)-Dissolved	mg/L	11.5	11.9	12.9	13.1	11.3
Magnesium (Mg)-Dissolved	mg/L	5.74	5.45	5.75	5.76	6.06
Biological Oxygen Demand (BOD5)			<2			
Dissolved Oxygen	mg/L			9.55		

Table 8: Water Quality Results for TL-4, August 2013

	Sample ID	TL4-05AUG13	TL4-13AUG13	TL4-19AUG13	TL4-27AUG13	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
	ALS ID	L1343243-8	L1347018-4	L1350008-4	L1354039-5		
	Sample Date/Time	8/5/2013 6:32:00 PM	8/13/2013 7:57:00 AM	8/19/2013 1:45:00 PM	8/27/2013 7:45:00 AM		
Parameter	**Units**	**Results**	**Results**	**Results**	**Results**		
Conductivity (EC)	uS/cm	205	217	224	225		
Hardness (as CaCO3)	mg/L	48.6	54.7	56.5	53.5		
pH	pH	7.72	7.62	7.63	7.76	6.0-9.5	6.0-9.5
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	15.00	30.00
Total Dissolved Solids	mg/L	125	138	135	123		
Ammonia, Total (as N)	mg/L	<0.050	<0.050	<0.050	<0.050	6	-
Chloride (Cl)	mg/L	37.6	38.8	40	40.2		
Nitrate (as N)	mg/L	<0.050	<0.050	<0.050	<0.050		
Nitrite (as N)	mg/L	<0.050	<0.050	<0.050	<0.050		
Orthophosphate-	mg/L	0.0083	<0.0010	<0.0010	<0.0010		
Phosphorus (P)-Total	mg/L	<0.020	<0.020	<0.020	<0.020		
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	1.00	2.00
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050		
Fecal Coliforms	CFU/100mL	-	1	-	-	10,000	10,000
Aluminum (Al)-Total	mg/L	0.0103	0.0081	0.009	0.0509		
Antimony (Sb)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040		
Arsenic (As)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	0.50	1.00
Barium (Ba)-Total	mg/L	<0.0030	0.0031	0.0031	0.004		
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010		
Boron (B)-Total	mg/L	<0.050	<0.050	<0.050	<0.050		
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	0.000057		
Calcium (Ca)-Total	mg/L	12.7	13	14.4	12.8		
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010		
Cobalt (Co)-Total	mg/L	<0.0020	<0.0020	<0.0020	<0.0020		
Copper (Cu)-Total	mg/L	<0.0010	<0.0010	<0.0010	0.0014	0.30	0.60
Iron (Fe)-Total	mg/L	0.193	0.474	0.386	0.179		
Lead (Pb)-Total	mg/L	<0.00010	<0.00010	<0.00010	0.00022	0.20	0.40

Sample ID		TL4-05AUG13	TL4-13AUG13	TL4-19AUG13	TL4-27AUG13	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
ALS ID		L1343243-8	L1347018-4	L1350008-4	L1354039-5		
Sample Date/Time		8/5/2013 6:32:00 PM	8/13/2013 7:57:00 AM	8/19/2013 1:45:00 PM	8/27/2013 7:45:00 AM		
Lithium (Li)-Total	mg/L	<0.010	<0.010	<0.010	<0.010		
Magnesium (Mg)-Total	mg/L	5.86	6.35	6.1	5.99		
Manganese (Mn)-Total	mg/L	0.0103	0.0375	0.0278	0.0098		
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020		
Molybdenum (Mo)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050		
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020	<0.0020	<0.0020		
Potassium (K)-Total	mg/L	1.85	1.99	1.89	1.81	0.50	1.00
Selenium (Se)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040		
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020		
Sodium (Na)-Total	mg/L	19.1	19.8	19.7	19.8		
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		
Tin (Sn)-Total	mg/L	<0.050	<0.050	<0.050	<0.050		
Titanium (Ti)-Total	mg/L	<0.0010	<0.0010	<0.0010	0.0019		
Uranium (U)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010		
Zinc (Zn)-Total	mg/L	<0.0040	<0.0040	<0.0040	0.0176	0.50	1.00
Calcium (Ca)-Dissolved	mg/L	10.3	12.4	13.2	11.5		
Magnesium (Mg)-	mg/L	5.53	5.75	5.72	6		
Radium 226	Bq/L	0.007	0.0031	<0.0041	0.0121	0.37	1.11
Acute Lethality - Daphnia			Non lethal				
Acute Lethality - Trout			Non lethal				
Dissolved Oxygen	mg/L		7.99				
Biological Oxygen Demand (BOD5)			<2			80	160

Item 30: Tailings Impoundment Area Discharge Volume

Dewatering of the Tailings Impoundment Area commenced on June 21, 2013. The daily discharge and maximum permitted discharge volumes for August are presented in Table 9.

Table 9: Daily Permitted and Actual Discharge Volumes for the TIA Dewatering Program, August 2013

Date	TL-2 Discharge Volume (m^3/day)	Max. Discharge Volume Allowed 10% of TL-2 (m^3/day)	Total Daily Vol. Discharged TL- 1 (m^3/day)	Total Daily Vol. Discharged TL- 4 (m^3/day)
Thursday, August 01, 2013	27,330	2,709	2,560.04	2,694.30
Friday, August 02, 2013	26,520	2,551	2,550.91	2,578.72
Saturday, August 03, 2013	24,780	2,480	2,366.22	2,254.00
Sunday, August 04, 2013	23,920	2,403	2,328.83	2,132.97
Monday, August 05, 2013	23,100	2,285	*2,332.95*	2,164.70
Tuesday, August 06, 2013	22,250	2,225	*2,313.05*	2,148.39
Wednesday, August 07, 2013	21,470	2,085	*2,209.31*	2,042.44
Thursday, August 08, 2013	20,730	2,011	*2,180.95*	1,986.62
Friday, August 09, 2013	19,370	1,956	*2,035.11*	1,859.80
Saturday, August 10, 2013	18,590	1,879	1,815.72	1,849.33
Sunday, August 11, 2013	17,860	1,799	1,792.60	*2,173.85*
Monday, August 12, 2013	17,600	1,737	1,657.45	*1,810.25*
Tuesday, August 13, 2013	17,040	1,652	1,641.70	1,634.70
Wednesday, August 14, 2013	16,500	1,590	1,583.95	1,535.96
Thursday, August 15, 2013	15,120	1,457	*1,515.33*	1,452.80
Friday, August 16, 2013	14,640	1,411	*1,622.60*	*1,428.36*
Saturday, August 17, 2013	14,160	1,343	*1,507.82*	*1,431.26*
Sunday, August 18, 2013	12,720	1,287	*1,372.04*	1,246.28
Monday, August 19, 2013	11,760	1,192	*1,332.22*	*1,476.19*
Tuesday, August 20, 2013	11,040	1,164	1,003.27	937.53
Wednesday, August 21, 2013	10,320	1,085	*1,102.29*	1,043.58
Thursday, August 22, 2013	11,140	1,057	1,005.64	966.62
Friday, August 23, 2013	10,610	991	*1,002.61*	987.42
Saturday, August 24, 2013	9,640	776	*908.55*	*911.21*
Sunday, August 25, 2013	9,200	756	*915.37*	*910.59*
Monday, August 26, 2013	8,780	747	676.77	*866.93*
Tuesday, August 27, 2013	8,390	732	687.11	*807.16*
Wednesday, August 28, 2013	8,020	749	695.07	*776.45*
Thursday, August 29, 2013	7,660	723	*730.51*	*739.82*
Friday, August 30, 2013	7,330	706	700.31	*710.23*
Saturday, August 31, 2013	7,020	707	677.51	680.52

Italicized values indicate meter readings recorded above discharge allowance. However, in most of these instances only one of the flowmeters indicated that discharge was higher than 10% of Doris Creek flow, and discharge was never more than 11% of Doris Creek flow on either meter.

Schedule J: Tailings Impoundment Area Water Quality (TL-10)

Water quality at station TL-10 is provided in Table 10.

Table 10: Water Quality Data Summary for Monitoring Station TL-10, July 2013

		Sample ID	TL10S-19AUG13	TL10M-19AUG13	TL10D-19AUG13
		ALS ID	L1350008-5	L1350008-6	L1350008-7
		Sample Date/Time	8/19/2013 10:00:00 AM	8/19/2013 10:00:00 AM	8/19/2013 10:00:00 AM
Parameter	**Units**		**Results**		
Dissolved Oxygen	mg/L		10.35	10.31	10.25
Conductivity (EC)	uS/cm		200	220	200
Hardness (as CaCO3)	mg/L		48.2	48.6	48.6
pH	pH		7.62	6.91	7.58

Sample ID		TL10S-19AUG13	TL10M-19AUG13	TL10D-19AUG13
ALS ID		L1350008-5	L1350008-6	L1350008-7
Sample Date/Time		8/19/2013 10:00:00 AM	8/19/2013 10:00:00 AM	8/19/2013 10:00:00 AM
Parameter	**Units**	**Results**		
Redox Potential	mV	140	164	141
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	117	134	114
Ammonia, Total (as N)	mg/L	<0.050	<0.050	<0.050
Chloride (Cl)	mg/L	37	37.1	37
Nitrate (as N)	mg/L	<0.050	<0.050	<0.050
Nitrite (as N)	mg/L	<0.050	<0.050	<0.050
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	<0.020	<0.020	<0.020
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0158	0.0138	0.0144
Antimony (Sb)-Total	mg/L	<0.00040	<0.00040	<0.00040
Arsenic (As)-Total	mg/L	<0.00040	<0.00040	<0.00040
Barium (Ba)-Total	mg/L	<0.0030	<0.0030	<0.0030
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.050	<0.050	<0.050
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	12	12	11.6
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.0020	<0.0020	<0.0020
Copper (Cu)-Total	mg/L	0.001	<0.0010	<0.0010
Iron (Fe)-Total	mg/L	0.099	0.1	0.099
Lead (Pb)-Total	mg/L	<0.00010	<0.00010	<0.00010
Lithium (Li)-Total	mg/L	<0.010	<0.010	<0.010
Magnesium (Mg)-Total	mg/L	5.73	5.82	5.73
Manganese (Mn)-Total	mg/L	0.0118	0.0122	0.0118
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020
Molybdenum (Mo)-Total	mg/L	<0.0050	<0.0050	<0.0050
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020	<0.0020
Potassium (K)-Total	mg/L	1.73	1.75	1.77
Selenium (Se)-Total	mg/L	<0.00040	<0.00040	<0.00040
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	18.6	18.7	18.6
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.050	<0.050	<0.050
Titanium (Ti)-Total	mg/L	<0.0010	<0.0010	<0.0010
Uranium (U)-Total	mg/L	<0.00010	<0.00010	<0.00010
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	<0.0040	<0.0040	<0.0040
Calcium (Ca)-Dissolved	mg/L	10.7	11	10.6
Magnesium (Mg)-Dissolved	mg/L	5.25	5.12	5.36

Part J: Conditions Applying to General and Aquatics Effects Monitoring

Item 12d: Tonnages of Waste Rock Stored on the Temporary Waste Rock Pad

Underground mining is no longer occurring. Waste rock has not been removed from the pile. The total volume of rock on the temporary waste rock pad is 182,716 tonnes, as per the December 2011 survey.

Item 12g: Tail Lake Ice Thickness

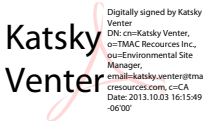
There was no ice was on Tail Lake this month

Environmental Incident Reporting

No incidents pertaining to this licence occurred during this month.

Should there be any questions regarding this monthly report, please contact Katsky Venter or Léa-Marie Bowes-Lyon, ESR Site Managers for TMAC Resources Inc. at (867) 988-0569 or Katsky.Venter@tmacresources.com or Lea-Marie.Bowes-Lyon@tmacresources.com.

Yours sincerely,



Katsky Venter
Environmental and Social Responsibility Site Manager
Hope Bay Project

Table 11: Water Quality Results for TL-2 and TL-3, August 2013

		Sample ID	TL2-05AUG13	TL2-12AUG13	TL2-19AUG13	TL2-26AUG13a	TL2-26AUG13b	TL3-05AUG13	TL3-13AUG13	TL3-19AUG13	TL3-26AUG13	**Maximum Concentration of Any Grab Sample from TL-2***
		ALS ID	L1343243-6	L1347018-2	L1350008-2	L1354039-2	L1354039-3	L1343243-7	L1347018-3	L1350008-3	L1354039-4	
		Sample Date/Time	8/5/2013 6:24:00 PM	8/12/2013 6:15:00 PM	8/19/2013 11:45:00 AM	8/26/2013 9:45:00 AM	8/26/2013 9:45:00 AM	8/5/2013 6:39:00 PM	8/13/2013 7:48:00 AM	8/19/2013 2:00:00 PM	8/26/2013 11:00:00 AM	
Paramter	Units											
Conductivity (EC)	uS/cm		281	282	286	290	293	273	277	280	296	
Hardness (as CaCO3)	mg/L		48.8	47.8	48.4	49.3	49	50.1	49	49.3	50.6	
pH	pH		7.75	7.61	7.51	7.68	7.67	7.71	7.6	7.55	7.68	6.0-9.0
Total Suspended Solids	mg/L		<3.0	<3.0	3	<3.0	<3.0	<3.0	6	<3.0	<3.0	15.00
Total Dissolved Solids	mg/L		172	170	162	156	154	171	160	157	165	
Ammonia, Total (as N)	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1.54**
Chloride (Cl)	mg/L		64.1	63.3	64.6	65.2	64	61.3	62.5	61.8	66	150
Nitrate (as N)	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	2.9
Nitrite (as N)	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.060
Orthophosphate-Dissolved (as P)	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus (P)-Total	mg/L		0.025	<0.020	<0.020	<0.020	0.023	0.026	0.021	0.021	<0.020	
Cyanide, Total	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.010
Cyanide, Free	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005
Aluminum (Al)-Total	mg/L		0.0369	0.0186	0.0306	0.05	0.0448	0.0499	0.0207	0.022	0.035	0.100
Antimony (Sb)-Total	mg/L		<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	
Arsenic (As)-Total	mg/L		<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.0050
Barium (Ba)-Total	mg/L		<0.0030	<0.0030	<0.0030	0.0033	0.0033	<0.0030	<0.0030	<0.0030	<0.0030	
Beryllium (Be)-Total	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Boron (B)-Total	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Cadmium (Cd)-Total	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000017
Calcium (Ca)-Total	mg/L		9.42	8.8	10.3	9.72	10	10.1	9.27	11.3	9.77	
Chromium (Cr)-Total	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Total	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Copper (Cu)-Total	mg/L		0.0015	0.0014	0.0014	0.0013	0.0013	0.0014	0.0013	0.0013	0.0013	0.002
Iron (Fe)-Total	mg/L		0.084	0.058	0.088	0.126	0.116	0.135	0.142	0.147	0.122	
Lead (Pb)-Total	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.001
Lithium (Li)-Total	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Magnesium (Mg)-Total	mg/L		6.63	6.49	6.62	6.31	6.4	6.68	6.56	6.72	6.63	
Manganese (Mn)-Total	mg/L		0.0181	0.0188	0.0266	0.0345	0.0335	0.023	0.0304	0.0258	0.0294	
Mercury (Hg)-Total	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000026
Molybdenum (Mo)-Total	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.073
Nickel (Ni)-Total	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.025
Potassium (K)-Total	mg/L		2.15	2.17	2.14	2.06	2.08	2.13	2.14	2.13	2.08	
Selenium (Se)-Total	mg/L		<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.0010
Silver (Ag)-Total	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.0001
Sodium (Na)-Total	mg/L		33	33.6	33.9	32.1	33.8	31.8	33.1	32.3	33.9	
Thallium (Tl)-Total	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0008
Tin (Sn)-Total	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Titanium (Ti)-Total	mg/L		0.0018	<0.0010	0.0013	0.0021	0.0016	0.0022	<0.0010	<0.0010	0.0016	
Uranium (U)-Total	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Vanadium (V)-Total	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	mg/L		<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.030
Calcium (Ca)-Dissolved	mg/L		9.09	9.16	9.28	8.91	8.78	9.44	9.6	9.88	9.4	
Magnesium (Mg)-Dissolved	mg/L		6.35	6.05	6.12	6.56	6.57	6.44	6.09	5.98	6.57	

		Sample ID	TL2-05AUG13	TL2-12AUG13	TL2-19AUG13	TL2-26AUG13a	TL2-26AUG13b	TL3-05AUG13	TL3-13AUG13	TL3-19AUG13	TL3-26AUG13	**Maximum Concentration of Any Grab Sample from TL-2***
		ALS ID	L1343243-6	L1347018-2	L1350008-2	L1354039-2	L1354039-3	L1343243-7	L1347018-3	L1350008-3	L1354039-4	
		Sample Date/Time	8/5/2013 6:24:00 PM	8/12/2013 6:15:00 PM	8/19/2013 11:45:00 AM	8/26/2013 9:45:00 AM	8/26/2013 9:45:00 AM	8/5/2013 6:39:00 PM	8/13/2013 7:48:00 AM	8/19/2013 2:00:00 PM	8/26/2013 11:00:00 AM	
Hexavalent Chromium	mg/L							<0.0010	<0.0010	<0.0010	<0.0010	0.0010
Oil and Grease	mg/L							<1.0	<1.0	1	<1.0	5
Oil And Grease (Visible Sheen)								No visible sheen	No visible sheen	No visible sheen	No visible sheen	

**As per Part G Item 28, during periods of discharge, water quality in Doris Creek at monitoring station TL-3 shall not exceed the greater of background water quality at the time of discharge as measured at monitoring station TL-2, or the criteria listed here.*

***at pH 7.5 and temperature of 20ºC*