



MEADOWBANK DIVISION

Monitoring Program Summary Report

November 2011

Type A Water License 2AM-MEA0815

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SECTION 1 • BACKGROUND

As required under Part I, Item 25 of Type A Water License 2AM-MEA0815, this report documents the water management and monitoring activity at the mine site for the month. This activity includes: water usage, sewage treatment plant discharge water quality and dewatering monitoring.

Additionally, a summary of the AEM internal spill reporting for the month is included.

SECTION 2 • WATER MANAGEMENT

2.1 WATER USAGE

Freshwater usage for November 2011 is summarized in Table 2.1 below. Freshwater usage for the month totals 68,636 m³. The consumption of fresh water for mine and mill operations (including production drills, batch plant and dust control) was 65,049 m³ and the consumption of reclaim water in the mill was 134,345 m³.

Table 2-1: Freshwater Usage (m³)

	November
Camp	3,309
Mine & Mill Operations	65,049
Emulsion Plant	120
Water Truck	158
Total	68,636

2.2 SEWAGE TREATMENT PLANTS

Three water samples were taken at the effluents of the sewage treatment plants (STP) in November; due to bad weather, the weekly samples scheduled for the last week of the month were not collected.

The Seprotech STP results are shown in Table 2.2 below; the LJ-Mix STP results are shown in Table 2.3. The results of each discharge show the systems are working well.

Table 2-2: Seprotech Effluent Results

Date	Units	7-Nov-11	14-Nov-11	21-Nov-11
Ammonia-Ammonium	mg N/L	10.2	10.3	4.4
BOD-5	mg/L	6	5	2
COD	mg/L	52	44	66
Total Suspended Solids	mg/L	15	8	18
Total Kjeldahl Nitrogen	mg N/L	13	14	7
Nitrite	mg N/L	0.01	0.01	0.01
Nitrate	mg N/L	31.1	32.6	29.4
pH *	units	4.6	3.9	5.5
Total Phosphorus	mg/L	12.2	13.7	13.7
Fecal Coliform	UFC/100 mL	24	24	32
Total Coliform	UFC/100 mL	300	200	80

Table 2-3: LJ-Mix Effluent Results

Date	Units	7-Nov-11	14-Nov-11	21-Nov-11
Ammonia-Ammonium	mg N/L	16.4	16.7	42.3
BOD-5	mg/L	11	19	6
COD	mg/L	55	65	73
Total Suspended Solids	mg/L	23	15	24
Total Kjeldahl Nitrogen	mg N/L	22	21	43
Nitrite	mg N/L	1.9	0.32	5.3
Nitrate	mg N/L	33.2	34.8	13
pH *	units	6.2	5.6	7.1
Total Phosphorus	mg/L	12.7	14.1	13
Fecal Coliform	UFC/100 mL	68	24	148
Total Coliform	UFC/100 mL	200	30,000	500

2.3 DEWATERING OF BAY GOOSE IMPOUNDMENT AREA

Dewatering of the Bay Goose impoundment area continued to November 14, 2011; due to ice buildup, dewatering has been suspended until further notice.

The pH and Aluminum concentrations at the outlets of the TSS water treatment plants were as follows:

- pH 24 hour minimum/maximum: 6.81/7.00 units (Limit is 6-9 units)
- Al 24 hour maximum concentration: 0.447 mg/L (Limit is 3.0 mg/L)

Table 2.4 summarizes the dewatering monitoring results for pH and Aluminum for the month.

Table 2-4: Bay Goose Impoundment Area Dewatering Monitoring – pH and Al

Date	BG-Pump-1 / BG-WTP-1		BG-Pump-2 / BG-WTP-2		Both Pumps / WTP Outlets	
	pH	Total Al	pH	Total Al	pH 24-hour Mean	Al 24-hour Mean
	units	mg/L	units	mg/L	units	mg/L
2011-11-07	7.00	0.585	7.00	0.308	7.00	0.447
2011-11-14	6.96		6.65		6.81	

The turbidity and TSS concentrations at the outlets of the TSS water treatment plants were as follows:

- NTU 24 hour mean maximum concentration: 5.7 NTU (Maximum Limit is 30 NTU)
- TSS 24 hour mean maximum concentration: 6 mg/L (Maximum Limit is 22.5 mg/L)
- NTU 30 days mean maximum concentration: 4.9 NTU (Maximum Limit is 15 NTU)
- TSS 30 days mean maximum concentration: 4 mg/L (Maximum Limit is 15 mg/L)

Table 2.5 summarizes the dewatering monitoring results for turbidity and TSS for the month.

Table 2-5: Bay Goose Impoundment Area Dewatering Monitoring – TSS and Turbidity

Date	BG-WTP-1		BG-WTP-2		Both WTP Outlets			
	24-hour	Lab TSS	24-hour	Lab TSS	NTU 24-hour Mean	TSS 24-hour Mean	NTU 30-day Mean	TSS 30-day Mean
	NTU	mg/L	NTU	mg/L	NTU	mg/L	NTU	mg/L
2011-11-01	0.1	2	0.9	2	0.5	2	4.9	4
2011-11-02	0.2	4	0.4	3	0.3	4	4.6	4
2011-11-03	0.4	2	0.9	4	0.6	3	4.2	4
2011-11-04	0.7	4	0.3	4	0.5	4	3.9	3
2011-11-05	0.7	2	0.4	6	0.6	4	3.6	3
2011-11-06	0.2	2	0.1	2	0.1	2	3.3	3
2011-11-07	0.0	2	0.2	2	0.1	2	3.0	3
2011-11-08	2.0	1	2.2	2	2.1	2	2.8	3
2011-11-09	0.1	6	0.1	2	0.1	4	2.6	3
2011-11-10	0.0	2	0.2	3	0.1	3	2.3	3
2011-11-11	0.0	5	0.5	5	0.2	5	2.0	3
2011-11-12	1.4	1	0.2	< 1	0.8	1	1.8	3
2011-11-13	2.0	3	0.7	4	1.4	4	1.7	3
2011-11-14	10.5	6	1.0	5	5.7	6	1.7	3
2011-11-15	Dewatering Suspended							

SECTION 3 • SPILL MANAGEMENT

AEM has developed a system of tracking spills on-site. Table 3.1 summarizes the AEM internal spill reports for the month. Eight (8) spills occurred on site; one was reported to the GN spill hotline.

Table 3-1: Summary of AEM Internal Spill Reports

Date of Spill	Hazardous Material	Quantity	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2011-11-09	Used oil	625 L	Beneath Primary crusher	Fork of the zoom boom punctured tote	Placed absorbent pads on ground; contaminated snow/soil taken to Hazmat area	Y
2011-11-11	Tailings	18,000 L	Near Tear Drop Lake	Pig stuck in tailings pipe	Picked up the tailings and took it to the Tailings Pond	N
2011-11-14	Oil	80 L	Mid Portage Pit	Broken hose on the drill	Stopped the machine; contaminated soil taken to Hazmat area	N
2011-11-14	Oil	50 L	Old transit laydown	Broken hydraulic hose	Cleaned up with rags and scraped with BACO	N
2011-11-19	Tailings	60 L	Between powerhouse and secondary crusher	Pig stuck in tailings pipe	Pick up the tailings and took it to the dome	N
2011-11-25	Reclaim water and scaling	63 m ³	Tailings pipe air strip area	Pig stuck in tailings pipe	Picked up the tailings and took it to the Tailings Pond	N
2011-11-25	Reclaim water and scaling	90 m ³	Tailings pipe WTP area	Pig stuck in tailings pipe	Picked up the tailings and took it to the Tailings Pond	N
2011-11-27	Reclaim water and scaling	4 m ³	Tailings pipe elbow near the powerhouse	Too much pressure for the tailings pipe elbow	Picked up the tailings and took it to the Tailings Pond	N