



MEADOWBANK DIVISION

Monitoring Program Summary Report

May 2012

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 and sewage treatment plant discharge water quality.

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 May 2012 is summarized in Table 2.1 below. Freshwater usage for the month totals 93,567 m³. The consumption from the Freshwater Tank was 93,403 m³. The consumption of reclaim water in the mill was 224,223 m³.

Table2-1: Freshwater Usage (m3)

	February
Freshwater Storage Tank	93,403
Emulsion Plant	164
Water Truck	0
Total	93,567

2.2 SEWAGE TREATMENT PLANTS

Four water samples were taken at the effluents of the sewage treatment plants (STP) in through the month.

The Seprotech STP results are shown in Table 2.2.1 below; the LJ-Mix STP results are shown in Table 2.2.2 The results of the discharge show the system was working well.

Table 2.2.1: Seprotech Effluent Results

Date	Units	7-May-12	14-May-12	22-May-12	28-May-12
Ammonia	mg N/L	<0.05	<0.05	<0.05	<0.05
Ammonia-Ammonium	mg N/L	6.4	7.0	5.5	6.1
Total Kjeldahl Nitrogen	mg N/L	12	12	11	11
BOD-5	mg/L	11	10	9	9
COD	mg/L	61	49	49	58
Total Suspended Solids	mg/L	24	28	26	15
Nitrate	mg N/L	22.3	21.9	21.5	22.3
Nitrite	mg N/L	0.03	0.08	0.01	0.03
Total Phosphorus	mg/L	12.2	10.4	10	10.3
pH *	units	5.10	5.40	4.60	4.20
Fecal Coliform	UFC/100 mL	56	68	60	4
Total Coliform	UFC/100 mL	900	***	<100	<1,000

***: The great number of bacteria restrains distinction of total coliforms and atypical colony. Numbers of total coliforms may be misjudged; it is not mentioned.

Table 2.2.2: LJ-Mix Effluent Results

Date	Units	7-May-12	14-May-12	22-May-12	28-May-12
Ammonia	mg N/L	<0.05	<0.05	<0.05	<0.05
Ammonia-Ammonium	mg N/L	9.4	16.5	15.1	11.3
Total Kjeldahl Nitrogen	mg N/L	19	23	23	18
BOD-5	mg/L	10	22	21	15
COD	mg/L	70	96	65	70
Total Suspended Solids	mg/L	23	41	41	15
Nitrate	mg N/L	25.9	31.6	33.3	27.2
Nitrite	mg N/L	0.18	0.08	0.04	0.13
Total Phosphorus	mg/L	12.7	12.9	9	10.8
pH *	units	5.00	5.70	5.80	5.50
Fecal Coliform	UFC/100 mL	24	900	300	24
Total Coliform	UFC/100 mL	<1,000	3,000	1,800	300

2.3 ATTENUATION POND EFFLUENT

As of May 12, 2012 both water treatment plants were discharging effluent to the environment through the diffuser in Third Portage Lake.

Tree water samples were taken at the effluents of the water treatment plant (ST-9) through the month.

The Effluent results are shown in Table 2.3.1 below. On May 22, and May 29 2012 the aluminum concentration was 1.85 mg/L and 1.55 mg/L, respectively, exceeding the license limit of 1.5 mg/L as a maximum grab sample. The high value of aluminium came from the coagulant, used in the water treatment plant. An action is in place to optimize the addition of coagulant.

Table 2.3.1: ST-9 - Effluent Monitoring

Date	Max grab conc.	Units	May 15 2012 9:00	May 22 2012 9:30	May 29 2012 9:00	Monthly average	Max avg. conc.
Ammonia (NH3)	32	mg N/L	0.09	0.14	0.08	0.10	16
Chloride (Cl)	2000	mg/L	24.9	35.7	34.9	31.8	1000
Cyanide Total	1.0	mg/L	0.088	0.133	0.124	0.115	0.5
Nitrate	40	mg N/L	2.7	2.3	2.2	2.4	20
pH**	6-9.0		7.69	7.26	6.8	7.25	6-9.0
C10-C50	6	mg/L	< 0.1	< 0.1	< 0.1	0.1	3
TSS	30	mg/L	4	19	5	9	15
Turbidity**	15	NTU	2.98	4.57	3.24	3.60	15

aluminum (Al)	1.5	mg/L	1.01	1.85	1.55	1.47	1.5
arsenic (As)	0.60	mg/L	< 0.005	0.0036	< 0.0005	0.0030	0.30
cadmium (Cd)	0.004	mg/L	< 0.00002	0.00009	0.00003	0.00005	0.002
copper (Cu)	0.2	mg/L	0.0048	0.0038	0.0030	0.0039	0.1
mercury (Hg)	0.0008	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00001	0.0004
nickel (Ni)	0.4	mg/L	0.0144	0.0281	0.0228	0.0218	0.2
lead (Pb)	0.20	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	0.10
zinc (Zn)	0.8	mg/L	0.003	0.01	0.002	0.005	0.4
Dissolved aluminum (Al)	1.0	mg/L	0.01	< 0.01	0.02	0.01	1.0

** indicate the analysis was performed by the environmental department

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. Fourteen (14) spills occurred on site; four 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
2-May-12	Fuel	150L	Haul truck refueling station	Failed component	Contaminated soil taken to contaminated soil disposal	Yes
3-May-12	Fuel	20L	Haul truck refueling station	Unreported	Contaminated soil taken to Hazmat area	No
5-May-12	Fuel	10L	South pit view point	Human error	Contaminated soil taken to Hazmat area	No
13-May-12	coolant	40L	FGL/Sana Garage	Improper working procedure	Contaminated soil taken to Hazmat area	No

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14-May-12	hydraulic oil	40L	North pit	Human error	Contaminated soil taken to Hazmat area	No
15-May-12	oil	80L	FGL/Sana Garage	Human error	Contaminated soil taken to Hazmat area	No
16-May-12	oil	25L	Hazmat storage	Improper working procedure and storage	Contaminated soil taken to Hazmat area	No
18-May-12	sewage	24,750L	Outside Sewage treatment plant	Failed component	Sewage was vacuumed and contaminated soil was removed and both disposed to the TSF	Yes
18-May-12	diesel	400L	Behind mill, green tanks	Overflowed due to expansion of the fuel by the temperature	Contaminated soil taken to contaminated soil disposal	Yes
20-May-12	diesel	85L	Refueling Station	Unreported	Contaminated soil taken to contaminated soil disposal	No
24-May-12	hydraulic oil	70L	Bay goose pit	Hydraulic Hose broke	Contaminated soil taken to Hazmat area	No
24-May-12	coolant	20L	Truck shop inuksuk side	Failed component	Contaminated soil taken to Hazmat area	No
26-May-12	CIP pulp	500L	Mill	The identification of the valves were reverse	Vacuum the liquid and contaminated soil taken to TSF	Yes
26-May-12	oil	4L	Site service parking	Failed component	Contaminated soil taken to Hazmat area	No