



## MEADOWBANK GOLD PROJECT

# **Monitoring Program Summary Report**

**March 2009**

Type A Water License 2AM-MEA0815

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## **SECTION 1 • BACKGROUND**

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As required under Part I, Item 25 of Type A Water License 2AM-MEA0815, this report documents the water management, monitoring activity and analytical monitoring along the All Weather Private Access Road (AWPAR) and mine site for the month of March 2009.

It should be noted that the Meadowbank Project is just entering the construction phase and is not scheduled to commence operations until early 2010. Consequently many of the license specified reporting locations or requirements are associated with facilities that are not yet constructed and thus reporting cannot be fully initiated until these facilities are constructed and commissioned. The dewatering of the northwest arm of Second Portage Lake began March 17. During this phase of construction no other water has been pumped, discharged or transferred, rather all site contact runoff are contained and directed to the Stormwater Management Pond (Tear Drop Attenuation Pond). The monitoring points covered by this monthly report will expand as the facilities are constructed.

Additionally, for the NWB to review, Section 4 summarizes the AEM internal spill reporting for March.

## **SECTION 2 • WATER QUALITY MONITORING**

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In March, no monitoring or sampling was completed along the AWPAR or at the mine site due to ice conditions. No water was discharged around the mine site, rather all the water (ie Sewage Treatment Plant, construction pumping) was directed to the Storm Water Management Pond.

### **2.1 DEWATERING OF SECOND PORTAGE LAKE**

Dewatering of the northwest arm of Second Portage Lake started March 17<sup>th</sup>, 2009 with one pump in operation. The second and the third pumps were in service on the 20<sup>th</sup> and the 23<sup>rd</sup> of March respectively. To date, the amount of water pumped to Third Portage Lake is estimated at 719,712 m<sup>3</sup>.

Total Suspended Solids (TSS) and turbidity are monitored daily at the intake pump (ST-DD-1) and once per week at Third Portage Lake near the outlet. The results respect the maximum monthly mean effluent quality limits (15 mg/L for TSS and 15 NTU for turbidity). Table 2.1 lists the monitoring results through the end of March.

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Sample ID	Date jj/mm/aaaa	Time hh:mm	Turbidity result NTU	TSS result mg/L	pH	Al mg/L
Pre-dewatering 2nd Portage intake	3/14/2009	9:55	4.65	4	6.78	< 0.002
Pre-dewatering 2nd Portage intake	3/14/2009	9:55	2.56	4		
Pre-dewatering 3rd Portage Outlet	3/15/2009	14:00		6	6.72	< 0.002
Pre-dewatering 3rd Portage Outlet	3/15/2009	14:00	4.30	6		
Intake Unit 3	3/17/2009	15:00	2.43			
Outlet 3rd Portage on ice	3/17/2009	11:00	0.43			
Intake Unit 3	3/18/2009	9:00	2.61	< 1		
Intake Unit 3	3/18/2009	16:00	2.45			
Intake Unit 3	3/19/2009	9:45	2.43	< 1		
Intake Unit 3	3/19/2009	16:30	2.28			
Intake Unit 3	3/20/2009	9:00	2.26	< 1		
Intake Unit 2	3/20/2009	16:30	2.30			
Intake Unit 3	3/20/2009	16:30	2.29			
Intake Unit 2	3/21/2009	10:00	2.43	< 1		
Intake Unit 3	3/21/2009	10:00	2.28	< 1		
Intake Unit 2	3/21/2009	17:00	2.16			
Intake Unit 3	3/21/2009	17:00	2.37			
Intake Unit 2	3/22/2009					
Intake Unit 3	3/22/2009					
Intake Unit 2	3/23/2009	10:00	2.21	< 1		
Intake Unit 3	3/23/2009	10:00	2.32	< 1		
Outlet 3rd Portage on ice	3/23/2009	10:00	0.36			
Intake Unit 1	3/24/2009	10:00	3.61	< 1		
Intake Unit 2	3/24/2009	10:00	2.60	< 1		
Intake Unit 3	3/24/2009	10:00	2.34	< 1		
Outlet 3rd Portage on ice Dewatering outlet	3/24/2009	14:00	-0.99	< 1		
Intake Unit 1	3/24/2009	17:30	2.34			
Intake Unit 2	3/24/2009	17:30	2.98			
Intake Unit 3	3/24/2009	17:30	2.74			
Intake Unit 1	3/25/2009	10:15	3.18	< 1		
Intake Unit 2	3/25/2009	10:15	3.54	< 1		
Intake Unit 3	3/25/2009	10:15	3.45	< 1		
Intake Unit 1	3/25/2009	16:30	3.14			
Intake Unit 2	3/25/2009	16:30	3.59			
Intake Unit 3	3/25/2009	16:30	3.39			
Intake Unit 1	3/27/2009	12:00	3.04	< 1		
Intake Unit 2	3/27/2009	12:00	3.50	< 1		
Intake Unit 3	3/27/2009	12:00	3.45	< 1		
Intake Unit 1	3/27/2009	18:00	3.18			
Intake Unit 2	3/27/2009	18:00	3.53			
Intake Unit 3	3/27/2009	18:00	3.18			
Intake Unit 1	3/28/2009	9:30	3.25	< 1		
Intake Unit 2	3/28/2009	9:30	3.51	< 1		
Intake Unit 3	3/28/2009	9:30	3.24	< 1		
Intake Unit 1	3/28/2009	17:15	2.48			
Intake Unit 2	3/28/2009	17:15	2.60			
Intake Unit 3	3/28/2009	17:15	3.01			
Intake Unit 1	3/29/2009	10:00	5.16	< 1		
Intake Unit 2	3/29/2009	10:00	5.48	< 1		
Intake Unit 3	3/29/2009	10:00	5.12	< 1		
Intake Unit 1	3/29/2009	18:30	5.34			
Intake Unit 1 Nalgene bottle	3/29/2009	18:30	4.41			
Intake Unit 2	3/29/2009	18:30	5.57			
Intake Unit 2 Nalgene bottle	3/29/2009	18:30	4.33			
Intake Unit 3	3/29/2009	18:30	5.10			
Intake Unit 3 Nalgene bottle	3/29/2009	18:30	4.34			
Outlet 3rd Portage on ice	3/29/2009	17:00	2.09	5		
Intake Unit 1	3/30/2009	17:00	4.23	< 1		
Intake Unit 2	3/30/2009	17:00	3.79	< 1		
Intake Unit 3	3/30/2009	17:00	4.05	< 1		
Intake Unit 1	3/31/2009	10:30	5.81	3		
Intake Unit 1	3/31/2009	10:30	4.42			
Intake Unit 2	3/31/2009	10:30	5.32	2		
Intake Unit 2	3/31/2009	10:30	4.35			
Intake Unit 3	3/31/2009	10:30	5.20	2		
Intake Unit 3	3/31/2009	10:30	4.34			
Intake Unit 1	3/31/2009	17:30	5.27			
Intake Unit 1	3/31/2009	17:30	4.48			
Intake Unit 2	3/31/2009	17:30	5.52			
Intake Unit 2	3/31/2009	17:30	4.46			
Intake Unit 3	3/31/2009	17:30	5.41			
Intake Unit 3	3/31/2009	17:30	4.06			

**Table 2.1: Monitoring Results March 14 – 31 2009**

## SECTION 3 • WATER MANAGEMENT

### 3.1 WATER USAGE

Under Water License 2AM-MEA0815, the total water consumption limit for the Meadowbank Project is 700,000 m<sup>3</sup>/year or 58,333 m<sup>3</sup>/month for batch plant, domestic and milling water use. During March, the average number of people on site by day was 321. The total consumption of water for the batch plant and the mine site was 2,593 m<sup>3</sup> for the month, an average of 84 m<sup>3</sup> /day.

**Table 3.1: March 2009 Water Consumption**

	<b>Water Usage (m<sup>3</sup>)</b>
Batch Plant	845
Water Treatment Plant	1,748
<b>Total for the Site</b>	<b>2,593</b>

### 3.2 SEWAGE TREATMENT PLANT MONITORING

At the sewage treatment plant (STP), five samples were taken in March only for the Seprotech L333. The two Little John LJ100s are in recirculation mode. No sludge was removed from the STP.

**Table 3.2: March 2009 STP Seprotech L333 effluent results**

<b>Parameter</b>	<b>3/2/2009</b>	<b>3/9/2009</b>	<b>3/16/2009</b>	<b>3/23/2009</b>	<b>3/30/2009</b>
NH3-NH4(mg/L)	10.5	12.8	11.8	11.1	16
DBO-5 (mg/L)	5	5	9	7	3
COD (mg/L)	111	101	77	97	69
TSS (mg/L)	23	14	24	21	4
NO2-NO3 (mg N/L)	31.4		33.5	32.5	37.3
pH (mg/L)	4.9	4.6	3.94	4.64	4.39
P tot (mg P/L)	9.9	12.1	12.9	13.2	15.2
Fecal Coliform (UFC/ 100mL)	<2	0	0	0	0
Total Coliform (UFC /100mL)	160	60	50	20	100
Atypical Colony (UFC /100mL)	1620	1640	440	930	1 800

Not sampled

Requested but not been analysed by lab

## SECTION 4 • SPILL MANAGEMENT SUMMARY

During the construction phase as part of the global Environmental Management System, AEM is developing a system of tracking spills on-site. Table 4.1 summarizes the AEM Internal spill reports for March.

**Table 4.1: Summary of March 2009 AEM Internal Spill Reports**

AEM Internal #	Date of Spill	Hazardous Material (Fuel, Oil, etc.)	Quantity	Location	Cause of Spill	Clean-up Action Taken	Reported to GN Spill HotLine
03-2009-01	3/3/2009	Hydraulic oil	10 L	East Dike	Hose burst on a drill	Drilling ceased and the spill was contained.	No
03-2009-02	3/11/2009	Hydraulic oil	8 L	Entrance of the Tarmak	Hose burst	Contaminated snow was taken to the contaminated snow cell.	No
03-2009-03	3/14/2009	Oil	10 L	Waste management area	Engine connecting rod went through engine block	Absorbent sheets were applied. Contaminated snow was taken to the contaminated snow cell.	No
03-2009-04	03/16/2009	Prestone	8 L	AWPAR km 100	Incorrect Prestone product in the radiator caused crack and leakage	Absorbent sheets were applied. Contaminated snow was taken to the contaminated snow cell.	No
03-2009-05	03/23/2009	Oil	4 L	Container by new drill & Toromont Coverall	Oil drum was punctured drum while moving it to Coverall	The remainder of oil in the drum was drained into an empty drum using the crane on the service truck. Used spill pads to soak up spilled oil.	No
03-2009-06	03/13/2009	Oil	60 L	Blue coverall laydown	Fire in the engine compartment melted hoses	Spill contained with spill kit materials. Top soil was cleaned up immediately and sent to Quarry 22 with other contaminated soil. Further excavation was completed on April 13, with 48 m <sup>3</sup> contaminated soil sent to Quarry 22.	No
03-2009-07	03/19/2009	Hydraulic oil	20 L	Front of cold storage	Leak from the rotation motor for the drill	Contaminated material was taken to the hazardous materials storage area.	No