



MEADOWBANK DIVISION

## **Monitoring Program Summary Report**

**March 2018**

Type A Water License 2AM-MEA1525

Table of Contents

SECTION 1 • BACKGROUND..... 3

SECTION 2 • WATER MANAGEMENT ..... 4

2.1 WATER USAGE .....4

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE .....4

2.3 CENTRAL DIKE SEEPAGE .....4

2.4 ASSAY ROAD SEEPAGE .....4

2.5 SEEPAGE AND RUNOFF FROM THE LANDFILL.....4

2.6 SEEPAGE AT PIT WALL AND PIT WALL FREEZE/THAW AND PERMAFROST AGGRADATION .....5

2.7 SEWAGE TREATMENT PLANT .....5

2.8 VAULT ATTENUATION POND EFFLUENT .....6

2.9 EAST DIKE SEEPAGE EFFLUENT.....6

2.10 NON CONTACT WATER.....7

SECTION 3 • SPILL MANAGEMENT ..... 8

## **SECTION 1 • BACKGROUND**

---

As required under Part I, Item 20 of Type A Water License 2AM-MEA1525, this report documents the water management and monitoring activities at the mine site for the month. This includes water usage, Vault Attenuation Pond discharge water quality, East Dike Seepage discharge water quality, RSF Seepage, Central Dike Seepage, Assay Road Seepage, and sewage treatment plant discharge water quality (which are directed to the onsite storm water management pond).

In addition, a summary of spills/actions for the month is reported.

## SECTION 2 • WATER MANAGEMENT

---

### 2.1 WATER USAGE

Fresh and reclaim water usage for March is summarized in Table 2-1 below.

**Table 2-1: Freshwater Usage (m<sup>3</sup>)**

Water Location	Source Lake	Jan	Feb	March	Total
Camp	Third Portage Lake	3,237	3,058	3,404	9,699
Mill (freshwater tank)	Third Portage Lake	51,594	165,733	92,668	309,995
Emulsion plant	No-name Lake	93.2	68	88	249
<b>Total Freshwater Usage (m<sup>3</sup>)</b>		<b>54,924</b>	<b>168,859</b>	<b>96,161</b>	<b>319,944</b>
<b>Reclaim Water Usage (m<sup>3</sup>)</b>	Tailings Pond	219,263	122,845	156,278	<b>498,386</b>

### 2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In March, no water was pumped back to the North Cell TSF from the ST-16 sump as it is frozen.

Inspections/Monitoring as per the Freshet Action Plan will resume in 2018 Freshet. As well, sampling at WEP1 (Station ST-30), WEP2 (Station ST-31), ST-16, NP2, and the downstream lakes required under the Freshet Action Plan will resume in 2018 Freshet.

NP2- Winter water sampling through ice into NP-2 Lake has been done in March.

### 2.3 CENTRAL DIKE SEEPAGE

In March, 206,319 m<sup>3</sup> of water was pumped from the ST-S-5 sump back into the South Cell TSF.

Sampling was conducted monthly at ST-S-5 and the South Cell TSF (ST-21) as per the requirements of the NWB water license.

Daily visual inspections were also completed by the Engineering Department.

### 2.4 ASSAY ROAD SEEPAGE

In March, no water was pumped back from the trench to the mill due to frozen conditions. Weekly inspections of the area were conducted this month.

### 2.5 SEEPAGE AND RUNOFF FROM THE LANDFILL

The landfill was inspected weekly and no seepage or runoff was observed.

## 2.6 SEEPAGE AT PIT WALL AND PIT WALL FREEZE/THAW AND PERMAFROST AGGRADATION

In March, no water was pumped out from Vault Pit to the Vault Attenuation Pond. No water was pumped out from Portage Pit North to the South Cell TSF. No water was pumped out from the Portage Pit South.

## 2.7 SEWAGE TREATMENT PLANT

One (1) effluent wastewater sample was collected at the onsite sewage treatment plant (STP) in March.

The Seprotech STP results are shown in Table 2.7.1 below; the LJ-Mix STP results are shown in Table 2.7.2. The effluent is discharged to the Stormwater Management pond which is pumped to the South Cell TSF during summer months. In February, no water has been discharged from the Stormwater Management pond to the South Cell TSF.

**Table 2.7.1: Seprotech Effluent Results**

Parameters	Units	March 6 <sup>th</sup> , 2018
Ammonia (NH <sub>3</sub> )	mg N/L	0.23
Ammonia-Nitrogen (NH <sub>3</sub> -NH <sub>4</sub> )	mg N/L	22.3
Total Kjeldahl Nitrogen	mg N/L	25.5
BOD-5	mg/L	8
COD	mg/L	80
Total Suspended Solids	mg/L	22
Nitrate	mg N/L	6.74
Nitrite	mg N/L	1.51
pH*	Units	7.1
Fecal Coliform	UFC/100 mL	160
Total Coliform	UFC/100 mL	<10 000

\*Parameter measured by STP operators

**Table 2.7.2: LJ-Mix Effluent Results**

Parameters	Units	March 6 <sup>th</sup> , 2018
Ammonia (NH <sub>3</sub> )	mg N/L	<0.01
Ammonia-Nitrogen (NH <sub>3</sub> -NH <sub>4</sub> )	mg N/L	0.84
Total Kjeldahl Nitrogen	mg N/L	5.33
BOD-5	mg/L	16
COD	mg/L	94
Total Suspended Solids	mg/L	25
Nitrate	mg N/L	19
Nitrite	mg N/L	0.16
pH*	Units	6.9
Fecal Coliform	UFC/100 mL	3 100
Total Coliform	UFC/100 mL	60 000

\*Parameter measured by STP operators

## 2.8 VAULT ATTENUATION POND EFFLUENT

No discharge occurred from the Vault Attenuation Pond into Wally Lake in March.

## 2.9 EAST DIKE SEEPAGE EFFLUENT

Discharge from the East Dike Seepage occurred for the entire month. A total of 18,592 m<sup>3</sup> was discharged into Second Portage Lake in March.

Four (4) weekly effluent samples were collected at ST-8 in March. TSS monitoring results are presented in Table 2.9.1.below. No exceedance in relation to the water license was recorded.

**Table 2.9.1: East Dike Seepage Results for TSS**

Parameters	Units	March. 5, 2018	March. 13, 2018	March. 19, 2018	March. 27, 2018	Maximum Average concentration
Total Suspended Solids	mg/L	3	6.6	5.3	0	3.73

Monthly regular sampling pursuant to the Water License was also conducted at this location. Results are shown in Table 2.9.2 below. There have been no exceedances of MMER for those criteria.

**Table 2.9.2 March 2018 Monthly Monitoring Results**

Parameters	Units	March 5, 2018
pH*		7.39
Aluminum	mg/L	0.058
Sulphate	mg/L	8.5
Arsenic	mg/L	<0.0005
Copper	mg/L	0.0013
Nickel	mg/L	<0.0005
Lead	mg/L	0.0008
Zinc	mg/L	0.002
Radium 226	mg/L	Reduced frequency
Total Cyanide	mg/L	0.002

\*Parameter measured by environmental technicians

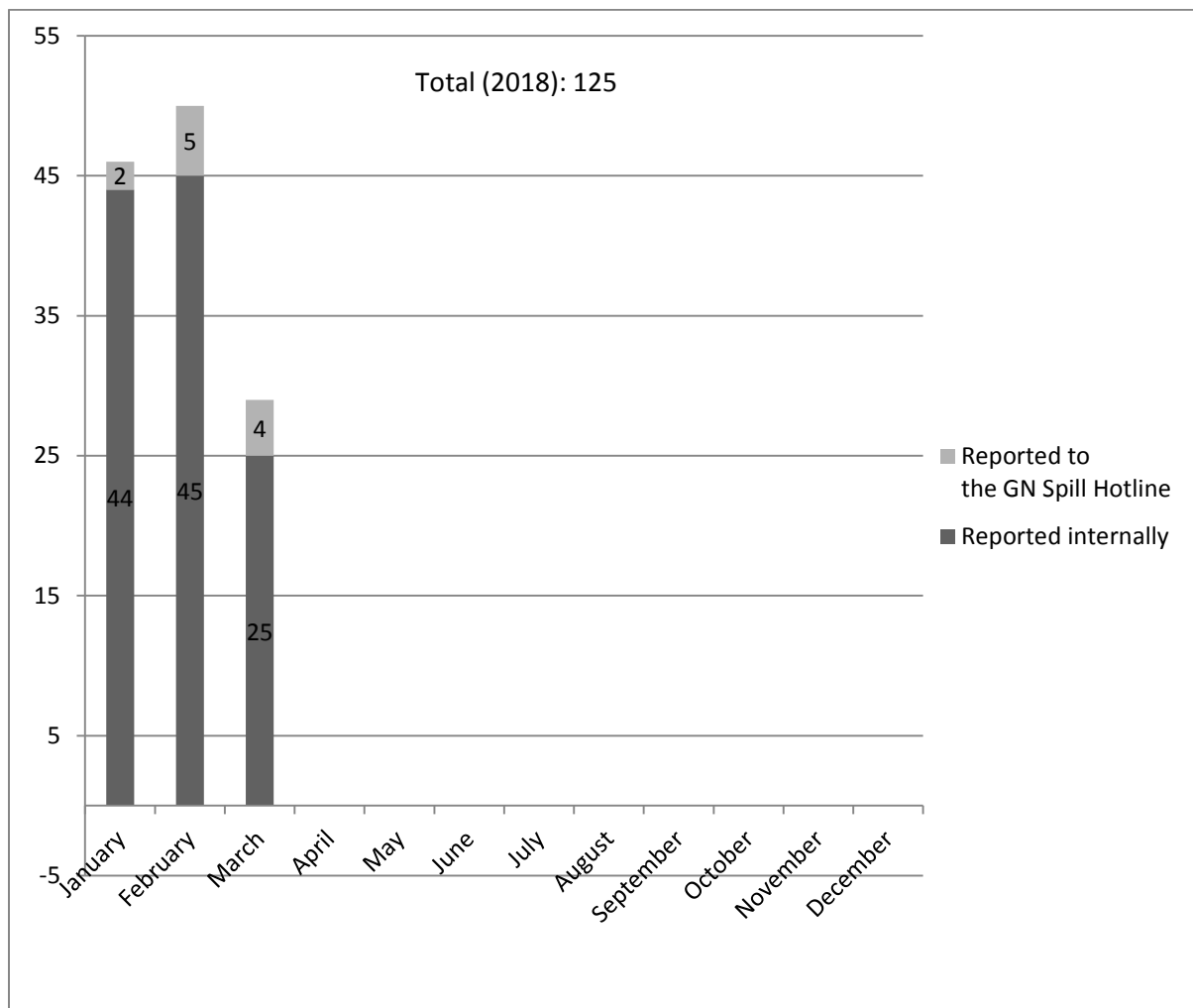
## **2.10 NON CONTACT WATER**

No water sampling was conducted at ST-5 and ST-6 in March due to frozen condition.

### SECTION 3 • SPILL MANAGEMENT

Figure 3.1 shows reported and non-reported spills for 2018 broken down per month and Table 3.1 summarizes Agnico Eagle spill reports for March. All spills reported internally (25) and to regulators (4) were managed appropriately on site according to Agnico's spill contingency plan. Spills were contained and cleaned, contaminated material was disposed to the appropriate area (landfarm, TSF if required), and the clean-up actions were monitored closely by the Environment Department. There was no off site impact to any watercourses.

**Figure 3.1 2018 Reported and Non-Reported Spills**



**Table 3.1: Summary of Agnico Eagle Internal Spill Reports, March 2018**

<b>2018 Reported Spills (Internal and Reported to Regulators)</b>						
<b>Date of Spill</b>	<b>Hazardous Material</b>	<b>Qty</b>	<b>Units (L/Kg)</b>	<b>Location</b>	<b>Cause of spill</b>	<b>Clean-up action taken</b>
1-Mar-18	Hydraulic oil	4	L	Mine Meadowbank	Worn out o-ring	Spill was contained and contaminated soil picked up and disposed of appropriately
2-Mar-18	Hydraulic oil	50	L	Mine Meadowbank	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
2-Mar-18	Coolant	25	L	Site Services Meadowbank	Coolant hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
3-Mar-18	Hydraulic oil	10	L	Construction - Amaruq	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
4-Mar-18	Hydraulic oil	50	L	Auxiliary Equipment Meadowbank	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
7-Mar-18	Hydraulic oil	45	L	Mine Meadowbank	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
7-Mar-18	Hydraulic oil	15	L	Mine Meadowbank	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
8-Mar-18	Diesel Fuel	1	L	Construction - Amaruq	Leak	Spill was contained and contaminated soil picked up and disposed of appropriately
10-Mar-18	Transmission fluid	25	L	Mine Meadowbank	Transmission hose leak	Spill was contained and contaminated soil picked up and disposed of appropriately
11-Mar-18	Hydraulic oil	3	L	Construction - Amaruq	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
12-Mar-18	Hydraulic oil	250	L	Mine Meadowbank	Broken "O" ring	Spill was contained and contaminated soil picked up and disposed of appropriately

Type A Water License 2AM-MEA1525  
Monitoring Program Summary Report

13-Mar-18	Hydraulic oil	40	L	Mine Meadowbank	Dipstick tube broke and engine oil overfilled	Spill was contained and contaminated soil picked up and disposed of appropriately
13-Mar-18	Hydraulic oil	45	L	Mine Meadowbank	Bucket cylinder hydraulic line failed	Spill was contained and contaminated soil picked up and disposed of appropriately
15-Mar-18	Coolant	3	L	Construction - Amaruq	Coolant hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
16-Mar-18	Hydraulic oil	200	L	Mine Meadowbank	A rock damaged the hydraulic pump	Spill was contained and contaminated soil picked up and disposed of appropriately
16-Mar-18	Coolant	45	L	Mine Meadowbank	Coolant hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
17-Mar-18	Hydraulic oil	150	L	Mine Meadowbank	Broken steel pipe on main boom cylinder	Spill was contained and contaminated soil picked up and disposed of appropriately
18-Mar-18	Hydraulic oil	3	L	Amaruq Road - Meadowbank	Hydraulic hose leak	Spill was contained and contaminated soil picked up and disposed of appropriately
19-Mar-18	Hydraulic oil	80	L	Mine Meadowbank	Broken valve	Spill was contained and contaminated soil picked up and disposed of appropriately
19-Mar-18	Hydraulic oil	30	L	Mine Meadowbank	Failed torque converter hose	Spill was contained and contaminated soil picked up and disposed of appropriately
21-Mar-18	Coolant	40	L	Meadowbank	Coolant hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
21-Mar-18	Coolant	30	L	Meadowbank	Failed seal on cooler tube	Spill was contained and contaminated soil picked up and disposed of appropriately
23-Mar-18	Hydraulic oil	80	L	Mine Meadowbank	Hydraulic hose failure	Spill was contained and contaminated soil picked up and disposed of appropriately
24-Mar-18	Hydraulic oil	80	L	Drill and Blast Mine Meadowbank	Broken O'ring	Spill was contained and contaminated soil picked up and disposed of appropriately

Type A Water License 2AM-MEA1525  
Monitoring Program Summary Report

26-Mar-18	Transmission oil	50	L	Maintenance Meadowbank	Broken cover on transmission filter base	Spill was contained and contaminated soil picked up and disposed of appropriately
27-Mar-18	Hydraulic oil	97	L	Open Pit Meadowbank	Leaking hose	Spill was contained and contaminated soil picked up and disposed of appropriately
27-Mar-18	Engine oil	45	L	Maintenance Meadowbank	Seal is leaking	Spill was contained and contaminated soil picked up and disposed of appropriately
30-Mar-18	Hydraulic oil	8	L	Open Pit Meadowbank	Frozen breather	Spill was contained and contaminated soil picked up and disposed of appropriately
31-Mar-18	Coolant	379	L	Mine Meadowbank	Radiator fan failure. Broken fan hit the radiator and punctured it.	Spill was contained and contaminated soil picked up and disposed of appropriately