



MEADOWBANK DIVISION

## **Monitoring Program Summary Report**

**January 2017**

Type A Water License 2AM-MEA1525

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## **SECTION 1 • BACKGROUND**

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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

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### 2.1 WATER USAGE

Fresh and reclaim water usage for January 2017 is summarized in Table 2-1 below.

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

Water Location	Source Lake	Jan	Total
Camp	Third Portage Lake	45,068	45,068
Mill (freshwater tank)	Third Portage Lake	3,623	3,623
Emulsion plant	No-name Lake	86	86
<b>Total Freshwater Usage (m<sup>3</sup>)</b>		<b>48,777</b>	<b>48,777</b>
<b>Reclaim Water Usage (m<sup>3</sup>)</b>	South Cell TSF	252,232	252,232

### 2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In January 2017, 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 2017 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 2017 Freshet. NP2-Winter water sampling through ice into NP-2 Lake has been done in January.

### 2.3 CENTRAL DIKE SEEPAGE

In January 2017, 447,165 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 January 2017, no water was pumped from the interception trench back to the mill as it is all frozen.

### 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 January, water was observed seeping on the eastern wall of the Vault Pit. It was not possible to assess flow. In January, no water was pumped out from Vault Pit to the Vault Attenuation Pond. 7,698m<sup>3</sup> of water was pumped from the Portage Pit North to the South Cell TSF. No water was pumped out from Portage Pit South to the South Cell TSF.

## 2.7 SEWAGE TREATMENT PLANT

One (1) effluent wastewater sample was collected at the onsite sewage treatment plant (STP) in January 2017.

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 twice a year during summer months.

**Table 2.7.1: Seprotech Effluent Results**

Parameters	Units	January 9, 2017
Ammonia (NH <sub>3</sub> )	mg N/L	0.53
Ammonia-Nitrogen (NH <sub>3</sub> -NH <sub>4</sub> )	mg N/L	34.8
Total Kjeldahl Nitrogen	mg N/L	80.5
BOD-5	mg/L	12
COD	mg/L	62
Total Suspended Solids	mg/L	19
Nitrate	mg N/L	6.55
Nitrite	mg N/L	0.65
pH*	Units	7.38
Fecal Coliform	UFC/100 mL	360
Total Coliform	UFC/100 mL	1,380,000

\*Parameter measured by STP operators

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

Parameters	Units	January 9, 2017
Ammonia (NH <sub>3</sub> )	mg N/L	<0.01
Ammonia-Nitrogen (NH <sub>3</sub> -NH <sub>4</sub> )	mg N/L	0.97
Total Kjeldahl Nitrogen	mg N/L	3.75
BOD-5	mg/L	28
COD	mg/L	47
Total Suspended Solids	mg/L	11
Nitrate	mg N/L	15.5
Nitrite	mg N/L	0.15
pH*	Units	6.32
Fecal Coliform	UFC/100 mL	48
Total Coliform	UFC/100 mL	14,000

\*Parameter measured by STP operators

## 2.8 VAULT ATTENUATION POND EFFLUENT

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

## 2.9 EAST DIKE SEEPAGE EFFLUENT

Discharge from the East Dike Seepage occurred for the entire month of January. A total of 12,848 m<sup>3</sup> of water was discharged into Second Portage Lake in January 2017.

Five (5) weekly effluent samples were collected at ST-8 in January 2017. TSS results did not exceed the maximum allowable grab sample concentration (30 mg/L) and maximum average concentration (15 mg/L) permitted by Water License, Part F, Item 6. TSS monitoring results for November 2016 are shown in Table 2.9.2 below.

**Table 2.9.2: January 2017 East Dike Seepage Results**

Parameters	Units	3-Jan-17	9-Jan-17	16-Jan-17	23-Jan-17	30-Jan-17	Maximum Average Concentration
Total Suspended Solids	mg/L	1	2	<1	2	3	5.6

Monthly regular sampling pursuant to the Water license was also conducted at this location. Results are shown in Table 2.9.3 below. There have been no exceedances of MMER or Water License criteria.

**Table 2.9.3: January 2017 Monthly Monitoring Results**

Parameters	Units	9-Jan-17
Aluminum	mg/L	0.064
Sulphate	mg/L	4.1
Arsenic	mg/L	0.0009
Copper	mg/L	0.0012
Nickel	mg/L	0.0006
Lead	mg/L	<0.0003
Zinc	mg/L	<0.001
Radium 226	mg/L	0.003
Total Cyanide	mg/L	0.005

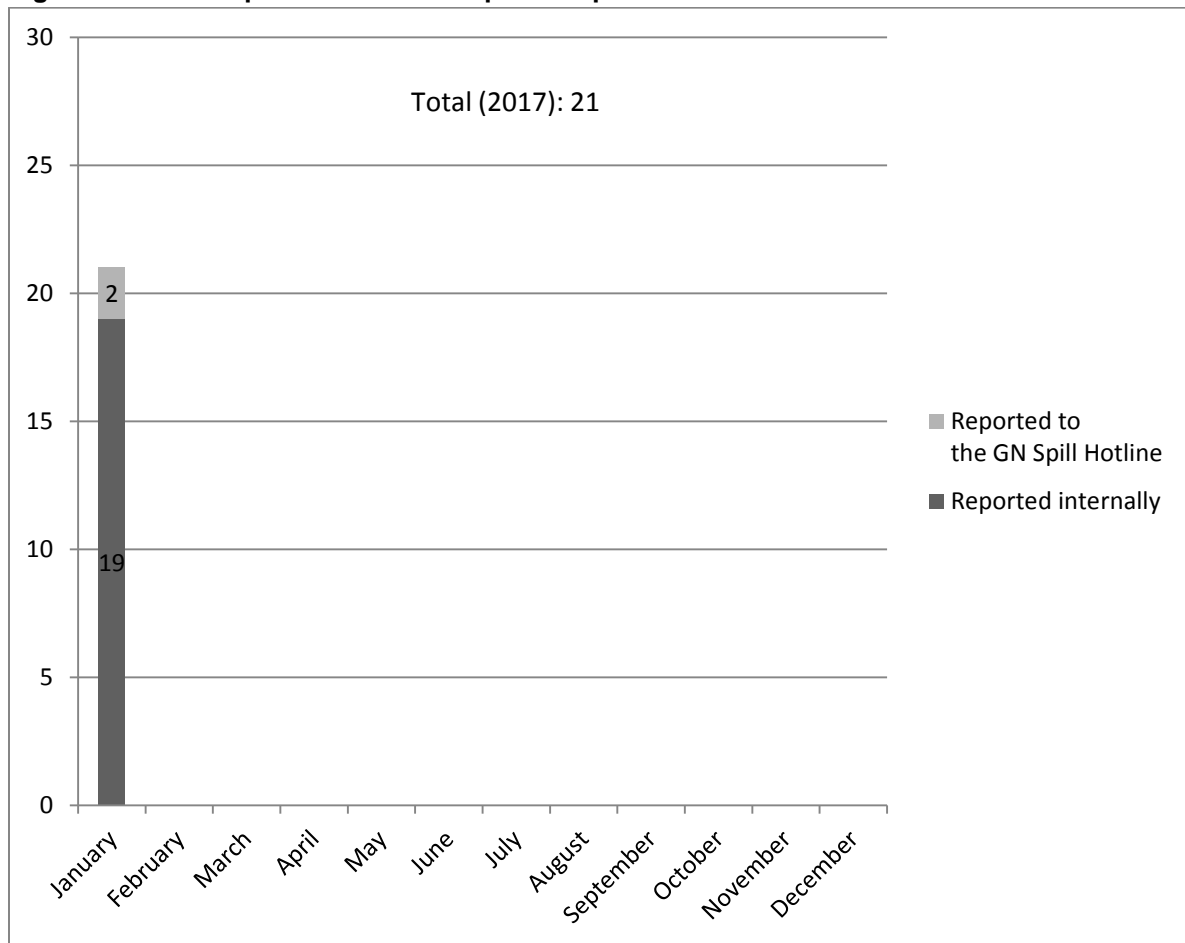
## 2.10 NON CONTACT WATER

No water sampling at ST-5 and ST-6 were completed in January due to frozen condition.

### SECTION 3 • SPILL MANAGEMENT

Figure 3.1 shows reported and non-reported spills for 2017 broken down per month and Table 3.1 summarizes Agnico spill reports for January 2017. All spills reported internally and to regulators 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 2017 Reported and Non-Reported Spills**



**Table 3.1: Summary of Agnico Eagle Internal Spill Reports, January 2017**

Date of Spill	Hazardous Material	Quantity	Units (L / Kg)	Location	Cause of spill	Clean-up action taken	Reported to Spill GN HotLine (Y/N)
January 1, 2017	Hydraulic Oil	85	L	Vault Pit	Broken hydraulic hose	Contaminated soil picked up and disposed of appropriately	No
January 2, 2017	Compressor Oil	25	L	Portage Pit	Broken O'ring	Spill was contained. Contaminated soil picked up and disposed of appropriately.	No
January 6, 2017	Hydraulic Oil	20	L	Vault Road	Broken steering hose	Contaminated soil picked up and disposed of appropriately	No
January 7, 2017	Power Steering Oil	15	L	Vault Road	Broken hydraulic hose	Spill was contained. Contaminated soil picked up and disposed of appropriately	No
January 9, 2017	Diesel Fuel	10	L	Portage Pit	Fuel breathe blocked	Contaminated soil picked up and disposed of appropriately	No
January 9, 2017	Coolant	40	L	Portage Pit	Broken coolant hose	Contaminated soil picked up and disposed of appropriately	No
January 9, 2017	Coolant	50	L	Vault Pit	Engine fan busted	Contaminated soil picked up and disposed of appropriately	No
January 10, 2017	Coolant	25	L	Maintenance Shop	Broken coolant hose	Contaminated soil picked up and disposed of appropriately	No
January 14, 2017	Hydraulic Oil	30	L	Vault Pit	Broken hydraulic hose	Contaminated soil picked up and disposed of appropriately	No
January 15, 2017	Engine Oil	5	L	Tear Drop Lake Road	Broken oil pan	Contaminated soil picked up and disposed of appropriately	No
January 15, 2017	Hydraulic Oil	30	L	Vault Waste Dump	Broken driving shaft	Contaminated soil picked up and disposed of appropriately	No
January 15, 2017	Hydraulic Oil	30	L	Portage Pit	Broken hydraulic hose	Contaminated soil picked up and disposed of appropriately	No
January 16, 2017	Hydraulic Oil	10	L	Portage Stockpile	Changed implement oil filter	Contaminated soil picked up and disposed of appropriately	No

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January 16, 2017	Coolant	50	L	Portage Pit	Broken flange on radiator	Spill was contained. Contaminated soil picked up and disposed of appropriately	No
January 18, 2017	Hydraulic Oil	30	L	Vault Camp	Broken O'ring	Spill was contained. Contaminated soil picked up and disposed of in the landfarm.	No
January 20, 2017	Power Steering Oil	10	L	Vault Camp	Broken steering hose	Contaminated soil picked up and disposed of in the landfarm.	No
January 26, 2017	Hydraulic Oil	15	L	Pushback Parking	Equipment failure	Spill was contained and contaminated soil picked up and disposed of in the landfarm.	No
January 27, 2017	Diesel Fuel	5	L	Pushback Parking	Fuel truck vent failure	Spill was contained and contaminated soil picked up and disposed of in the landfarm.	No
January 28, 2017	Coolant	50	L	Vault Pit	Broken heater hose	Contaminated soil picked up and disposed of appropriately	No
January 28, 2017	Hydraulic Oil	200	L	Vault Pit	Broken hydra	Spill was contained and contaminated soil picked up and disposed of in the landfarm	Yes
January 29, 2017	Hydraulic Oil	300	L	Vault Parking	Defective wiggig	Contaminated soil picked up and disposed of appropriately	Yes