



MEADOWBANK DIVISION

Monitoring Program Summary Report
October 2017

Type A Water License 2AM-MEA1525

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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 October 2017 is summarized in Table 2-1 below.

Table 2-1: Freshwater Usage (m³)

Water Location	Source Lake	Jan	Feb	March	April	May	June	July
Camp	Third Portage Lake	3,623	3,144	3,444	3,490	3,692	3,697	3,818
Mill (freshwater tank)	Third Portage Lake	45,068	41,345	33,328	53,001	53,152	39,661	43,494
Emulsion plant	No-name Lake	86	97	97	96	101	100	129
Total Freshwater Usage (m³)		48,777	44,586	36,869	56,587	56,944	43,459	47,441
Reclaim Water Usage (m³)	Tailings Pond	252,232	232,324	247,396	227,667	246,007	247,131	251,549

Water Location	Source Lake	Aug	Sept	Oct	Nov	Dec	Total
Camp	Third Portage Lake	3,433	3,389	3,522			35,252
Mill (freshwater tank)	Third Portage Lake	38,174	34,107	30,883			412,213
Emulsion plant	No-name Lake	123	98	97.6			1,023
Total Freshwater Usage (m³)		41,730	37,594	34,503	0	0	448,488
Reclaim Water Usage (m³)	Tailings Pond	257,421	241,498	250,866			2,454,091

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In October, 347 m³ of water was pumped back to the North Cell TSF from the ST-16 sump. Of that amount, no water was transferred from the WEP1 and WEP2 sumps respectively to the ST-16 sump. Total year to date pumped from ST-16 sump is 50,553 m³.

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 will be done once the ice condition will permit safe sampling.

2.3 CENTRAL DIKE SEEPAGE

In October, 234,820 m³ of water was pumped from the ST-S-5 sump back into the South Cell TSF. Total year to date is 3,858,559m³. In October, Agnico also continued to pump a part of the Central Dike seepage water into Goose Pit. A total of 47,223 m³ of water was transferred in October for a total year to date of 332,177m³.

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 October, 549 m³ of water was pumped back from the trench to the mill. 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 October, 8, 130 m³ were pumped out from Vault Pit to the Vault Attenuation Pond. A total of 10,937 m³ 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 October.

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 October, no water has been discharged from the Stormwater Management pond to the South Cell TSF.

Table 2.7.1: Seprotech Effluent Results

Parameters	Units	October 3 rd , 2017
Ammonia (NH ₃)	mg N/L	1.44
Ammonia-Nitrogen (NH ₃ -NH ₄)	mg N/L	70.7
Total Kjeldahl Nitrogen	mg N/L	71.7
BOD-5	mg/L	10
COD	mg/L	103
Total Suspended Solids	mg/L	16
Nitrate	mg N/L	0.23
Nitrite	mg N/L	1.25
pH*	Units	7.7
Fecal Coliform	UFC/100 mL	90
Total Coliform	UFC/100 mL	3,000

*Parameter measured by STP operators

Table 2.7.2: LJ-Mix Effluent Results

Parameters	Units	October 3 rd , 2017
Ammonia (NH ₃)	mg N/L	0.08
Ammonia-Nitrogen (NH ₃ -NH ₄)	mg N/L	13.5
Total Kjeldahl Nitrogen	mg N/L	17
BOD-5	mg/L	12
COD	mg/L	83
Total Suspended Solids	mg/L	15
Nitrate	mg N/L	17.6
Nitrite	mg N/L	0.77
pH*	Units	7.3
Fecal Coliform	UFC/100 mL	1,500
Total Coliform	UFC/100 mL	12,000

*Parameter measured by STP operators

2.8 VAULT ATTENUATION POND EFFLUENT

Discharge from the Vault Attenuation Pond into Wally Lake was in operation from October 5th to October 9th. A total of 56,947m³ of water was discharged. Total year to date is 715,606m³.

No Actiflo Water Treatment Plant was necessary during the month as the TSS levels were below the effluent criteria stated in Part F, Item 4 of Water Licence 2AM-MEA1525. Two (2) weekly effluent samples were taken at ST-10 in October. Results are presented in Table 2.8.1. No exceedance in relation to the water license was recorded.

Table 2.8.1: October 2017 Vault attenuation pond effluent results

Date Parameters	Units	Maximum Grab Concentration	October 5 th , 2017	October 9 th , 2017	Maximum Average Concentration
pH*		6.0-9.0	7.34	7.80	6.0-9.0
TSS	mg/L	30	6	10	15
TDS	mg/L	1400	215	219	1400
Turbidity*	NTU	15	8.33	7.45	15
Aluminum	mg/L	3	0.2	0.169	1.5
Dissolved Aluminum	mg/L	2	< 0.006	0.154	1
Arsenic	mg/L	0.2	<0.0005	0.0022	0.1
Cadmium	mg/L	0.004	< 0.00002	< 0.00002	0.002
Copper	mg/L	0.2	0.0027	0.0033	0.1
Mercury	mg/L	0.008	0.00022	< 0.00001	0.004
Ammonia nitrogen	mg N/L	40	0.41	0.26	20
Nickel	mg/L	0.4	0.0068	0.0076	0.2
Nitrate	mg N/L	100	3.36	3.53	50
Lead	mg/L	0.2	<0.0003	<0.0003	0.1
Phosphorus	mg/L	3	0.03	0.04	1.5
Zinc	mg/L	0.4	0.015	0.001	0.2
Chloride	mg/L	1000	8.4	8.9	500

*Parameter measured by technician in the field

2.9 EAST DIKE SEEPAGE EFFLUENT

Discharge from the East Dike Seepage occurred from October 29th to October 31th. A total of 2,031 m³ was discharged into Second Portage Lake in October 2017. Total year to date is 69,092 m³.

One (1) weekly effluent sample was collected at ST-8 in October 2017. 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	October 29th 2017	Maximum Average concentration
Total Suspended Solids	mg/L	<1	<1

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 October 2017 Monthly Monitoring Results

Parameters	Units	October 30th, 2017
Aluminum	mg/L	0.027
Sulphate	mg/L	7.0
Arsenic	mg/L	0.0026
Copper	mg/L	<0.0005
Nickel	mg/L	0.0005
Lead	mg/L	<0.0003
Zinc	mg/L	0.002
Radium 226	mg/L	Result not received yet. Will be add in the November report.
Total Cyanide	mg/L	<0.001

2.10 NON CONTACT WATER

No water samplings were conducted at ST-5 and St-6 in October 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 September 2017. All spills reported internally (39) 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 2017 Reported and Non-Reported Spills

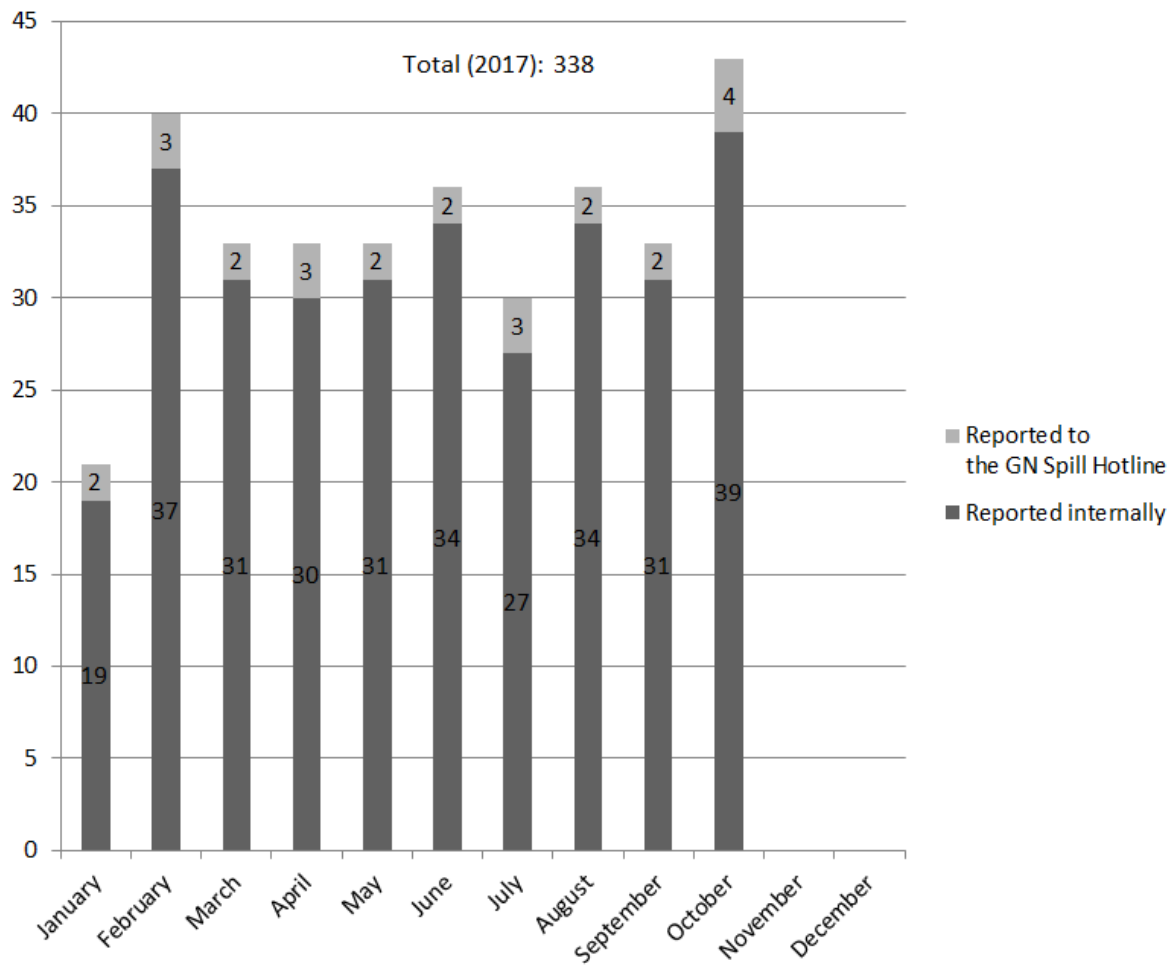


Table 3.1: Summary of Agnico Eagle Internal Spill Reports, October 2017

Spill Description							
Date of Spill	Hazardous Material	Qty	Units (L / Kg)	Location	Cause of spill	Clean-up action taken	Reported to Spill GN HotLine (Y/N)
October 2, 2017	Hydraulic oil	20	L	Portage pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 2, 2017	Hydraulic oil	60	L	Portage pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 2, 2017	Hydraulic oil	3	L	Vault pit parking	Broken hoist cylinder hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 2, 2017	Hydraulic oil	25	L	Vault pit parking	Hydraulic hose leak	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 3, 2017	Coolant	63	L	Phaser pit	Coolant leak due to broken rad	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 3, 2017	Hydraulic oil	20	L	Vault kitchen parking	Broken hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 3, 2017	Petroleum products	20	L	Vault kitchen parking	Broken hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 4, 2017	Diesel	20	L	Phaser and Vault intersection	Poor driving visibility and driver's misjudge	Spill was contained and contaminated soil picked up and disposed of appropriately.	N

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October 5, 2017	Hydraulic oil	165	L	Phaser pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	Y
October 5, 2017	Coolant	10	L	Portage pit	Broken coolant hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 5, 2017	Diesel fuel and Engine oil	20	L	Outside of maintenance shop	Overfilling	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 5, 2017	Engine oil	20	L	Outside of maintenance shop	Engine oil was escaping out of oil pan drain tube.	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 6, 2017	Hydraulic oil	40	L	Vault pit	O-Ring on Hammer hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 6, 2017	Diesel	24	L	Portage pit	Crack on fuel tank	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 6, 2017	Engine oil	5	L	Portage pit	Failure seal between the engine and a pump	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 7, 2017	Compressor Oil	16	L	Vault pit	busted hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 7, 2017	Diesel	50	L	Maintenance downline dome side	Fuel meter leaking	Spill was contained and contaminated soil picked up and disposed of appropriately.	N

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October 8, 2017	Petroleum products	60	L	Vault refuge parking	Unreported spill	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 8, 2017	Diesel	4	L	Portage pit	Split in the fuel tank	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 9, 2017	Hydraulic oil	90	L	Phaser pit	Hydraulic cap came off the tank	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 9, 2017	Fuel	150	L	Baker Lake Tank farm	Overfilling	Spill was contained and contaminated soil picked up and disposed of appropriately.	Y
October 10, 2017	Hydraulic oil	50	L	Vault pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 10, 2017	Hydraulic oil	200	L	Phaser pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	Y
October 10, 2017	Hydraulic oil	85	L	Vault pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 12, 2017	Hydraulic oil	20	L	South cell	Final drive Leaking	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 12, 2017	Coolant	60	L	Transit spud barge Baker Lake	Cracked tote inside a sea can and while lifting, some coolant spilled out	Spill was contained and contaminated soil picked up and disposed of appropriately.	N

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October 15, 2017	Hydraulic oil	10	L	Vault parking	Leaking hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 16, 2017	Diesel	25	L	Pushback parking	Overfilled tank	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 16, 2017	Hydraulic oil	20	L	Portage Pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 17, 2017	Hydraulic oil	67	L	Vault parking	Leaking hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 18, 2017	Hydraulic oil	78	L	Vault Pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 18, 2017	Engine Oil	62	L	Portage Rock Storage Facility	Engine failure	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 18, 2017	Hydraulic oil	20	L	Vault Rock Storage Facility	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 20, 2017	Hydraulic oil	15	L	Vault parking	Swing filter failure	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 25, 2017	Hydraulic oil	30	L	Vault Rock Storage Facility	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 27, 2017	Hydraulic oil	30	L	Pushback parking	Rubber seal on hydraulic hose of hoist cylinder failed	Spill was contained and contaminated soil picked up and disposed of appropriately.	N

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October 27, 2017	Engine oil	2	L	Heavy equipment parking	Leak	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 28, 2017	Diesel	100	L	Portage Pit	Fuel nozzle froze and stayed open while refueling	Spill was contained and contaminated soil picked up and disposed of appropriately.	Y
October 28, 2017	Hydraulic oil	60	L	Vault Pit	Quick attach hose failed	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 29, 2017	Hydraulic oil	60	L	Pushback parking	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 30, 2017	Hydraulic oil	75	L	Maintenance Shop	Oil storage tank failed	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 30, 2017	Hydraulic oil	80	L	Vault Pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N
October 30, 2017	Hydraulic oil	80	L	Vault Pit	Broken hydraulic hose	Spill was contained and contaminated soil picked up and disposed of appropriately.	N