



MEADOWBANK DIVISION

Monitoring Program Summary Report

September 2016

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 September 2016 is summarized in Table 2-1 below. Agnico Eagle made correction to freshwater volume (freshwater tank) from January 2016 to June 2016. An additional volume of 19,580 m³ was added. Table 2-1 below include these changes.

Table 2-1: Freshwater Usage (m³)

Water Location	Source	January	February	March	April	May	June	July
Camp	Third Portage Lake	3,181	3,061	3,418	3,297	3,478	3,235	3,441
Mill (freshwater tank)	Third Portage Lake	38,578	47,316	84,254	84,309	37,388	41,429	35,270
Emulsion plant	No-name Lake	135	125	119	138	147	54	116
Total Freshwater Usage (m³)		41,894	50,502	87,791	87,744	41,013	44,718	38,827
Reclaim Water Usage (m³)	South Cell TSF	261,513	207,769	204,407	200,883	268,825	231,995	273,558

Water Location	Source	August	September	Total 2016
Camp	Third Portage Lake	3,530	3,342	29,983
Mill (freshwater tank)	Third Portage Lake	33,516	27,030	429,090
Emulsion plant	No-name Lake	124	116	1,074
Total Freshwater Usage (m³)		37,170	30,488	460,147
Reclaim Water Usage (m³)	South Cell TSF	264,956	259,254	2,173,160

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In September 2016, 1,452 m³ of water was pumped back to the North Cell TSF from the ST-16 sump. Of that amount, 722 m³ and 102 m³ were transferred from the WEP1 and WEP2 sump respectively to the ST-16 sump. Total year to date pumped from ST-16 was 23,846 m³.

In September, Agnico Eagle completed inspections at the Portage and Vault RSFs, and NP-2 Lake as per the 2016 Freshet Action Plan. No major issues were observed. Open water sampling at WEP1 (Station ST-30), WEP2 (Station ST-31), ST-16, NP2, and the downstream lakes required under the Freshet Action Plan was completed in September.

2.3 CENTRAL DIKE SEEPAGE

In September 2016, 363,024 m³ of water was pumped from the ST-S-5 sump back into the South Cell TSF. Total year to date is 3,175,650 m³.

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 September 2016, 2,109 m³ of water was pumped from the interception trench back to the mill. The total for 2016 is 10,566 m³. 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 September, water was observed seeping on the eastern wall of the Vault Pit. It was not possible to assess flow. In September, 6,823 m³ of water was pumped out of Vault Pit to the Vault Attenuation Pond, 4,823 m³ of water were pumped out of Portage Pit South and 10,908 m³ of Portage Pit North 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 September 2016.

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.

Table 2.7.1: Seprotech Effluent Results

Parameters	Units	September 5, 2016
Ammonia (NH ₃)	mg N/L	0.07
Ammonia-Nitrogen (NH ₃ -NH ₄)	mg N/L	7.19
Total Kjeldahl Nitrogen	mg N/L	37.4
BOD-5	mg/L	10
COD	mg/L	51
Total Suspended Solids	mg/L	17
Nitrate	mg N/L	4.62
Nitrite	mg N/L	1.72
pH*	Units	6.70
Fecal Coliform	UFC/100 mL	55
Total Coliform	UFC/100 mL	2,000

*Parameter measured by STP operators

Table 2.7.2: LJ-Mix Effluent Results

Parameters	Units	September 5, 2016
Ammonia (NH ₃)	mg N/L	<0.01
Ammonia-Nitrogen (NH ₃ -NH ₄)	mg N/L	15.3
Total Kjeldahl Nitrogen	mg N/L	15.3
BOD-5	mg/L	5
COD	mg/L	48
Total Suspended Solids	mg/L	12
Nitrate	mg N/L	19.1
Nitrite	mg N/L	0.30
pH*	Units	5.10
Fecal Coliform	UFC/100 mL	22
Total Coliform	UFC/100 mL	<1000

*Parameter measured by STP operators

2.8 PHASER LAKE DEWATERING

Phaser Lake dewatering stated on August 26, 2016 and during the whole month of September. In September, a total of 315,330 m³ of water were transferred. Total year to date is 392,946 m³. Water was managed according to NWB water license 2AM-MEA1525 and is directed through the approved Vault Attenuation pond. During dewatering and operations, Agnico Eagle continue to meet approved license discharge limits of effluent from the Vault Attenuation Pond prior to discharge through Wally Lake diffuser. Discharging water during dewatering and operations follow Part F effluent discharge limits, monitoring and acute lethality testing (See section 2.9 below). The approved monitoring of Wally Lake receiving environment as part of the CREMP and MMER monitoring continue.

Phaser Lake Fishout started August 14, 2016 and was completed on September 26, 2016 with DFO approbation. 1357 fish were caught and 72% has been successfully transferred to Wally Lake.

2.9 VAULT ATTENUATION POND EFFLUENT

Discharge restarted September 1 from the Vault Attenuation pond and occurred during the whole month of September. A total of 408,963 m³ of water was discharged into Wally Lake in September 2016. Total year to date is 871,072 m³.

Five (5) weekly effluent samples were taken at ST-10 in September. 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.

Table 2.9.1: September 2016 Vault Discharge Results

Date Parameters	Units	Max. grab conc.	01-Sept- 16	05-Sept- 16	12-Sept- 16	20-Sept- 16	21-Sept- 16	Monthly Average	Max. avg. conc.
pH*		6.0-9.0	7.55	7.49	6.99	6.71	6.68	7.08	6.0-9.0
TSS	mg/L	30	4	4	3	14	11	8	15
TDS	mg/L	1400	NA	150	122	109	115	124	1400
Turbidity*	NTU	15	2.77	3.14	3.41	12.20	8.30	5.96	15
Aluminium	mg/L	3.0	NA	0.028	0.082	0.278	0.230	0.155	1.5
Dissolved Aluminium	mg/L	2.0	NA	<0.006	<0.006	<0.0006	<0.006	0.0076	1.0
Arsenic	mg/L	0.2	NA	<0.0005	<0.0005	<0.0005	<0.0005	0.00025	0.1
Cadmium	mg/L	0.004	NA	<0.00002	<0.00002	<0.00002	<0.00002	0.00001	0.002
Copper	mg/L	0.2	NA	0.0018	0.0022	0.0023	0.0020	0.00208	0.1
Mercury	mg/L	0.008	NA	<0.00001	<0.00001	<0.00001	<0.00001	0.000005	0.004
Ammonia nitrogen	mg N/L	40	NA	0.63	0.42	0.41	0.31	0.4425	20
Nickel	mg/L	0.4	NA	<0.0005	0.0226	0.0037	0.0039	0.00761	0.2
Nitrate	mg N/L	100	NA	3.61	2.50	1.85	1.53	2.372	50
Lead	mg/L	0.2	NA	<0.0003	0.0058	<0.0003	<0.0003	0.00156	0.1
Phosphorus	mg/L	3.0	NA	0.01	0.02	0.01	0.01	0.0125	1.5
Zinc	mg/L	0.4	NA	<0.001	<0.001	0.004	0.002	0.00175	0.2
Chloride	mg/L	1000	NA	6.8	5.0	6.6	5.3	5.925	500

*Parameter measured by Environment Technician on field

2.10 EAST DIKE SEEPAGE EFFLUENT

Discharge from the East Dike Seepage occurred for the entire month of September. A total of 16,020 m³ of water was discharged into Second Portage Lake in September 2016. Total year to date is 138,766 m³.

Four (4) weekly effluent samples were collected at ST-8 in September 2016. 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 August 2016 are shown in Table 2.9.2 below.

Table 2.9.2: September 2016 East Dike Seepage Results

Parameters	Units	5-Sept-16	12-Sept-16	20-Sept-16	28-Sept-16	Maximum Average Concentration
Total Suspended Solids	mg/L	3	<1	4	7	3.6

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: September 2016 Monthly Monitoring Results

Parameters	Units	28-Sept-16
Aluminum	mg/L	0.059
Sulphate	mg/L	21.1
Arsenic	mg/L	<0.0005
Copper	mg/L	0.0012
Nickel	mg/L	0.0024
Lead	mg/L	<0.0003
Zinc	mg/L	0.002
Radium 226	mg/L	0.004
Total Cyanide	mg/L	0.014

2.11 NON CONTACT WATER

In September, Agnico Eagle completed inspections at ST-5 and ST-6 as per the 2016 Freshet Action Plan and Water License. Portage Area East (ST-5) and West (ST-6) diversion ditches water quality results are shown in Tables 2.10.1 and 2.10.2, respectively. TSS results didn't exceed the maximum average concentration (15 mg/L) and maximum allowable grab sample concentration (30 mg/L) permitted by the Water License, Part F, Item 6.

Table 2.10.1: Portage Area East Diversion Ditch (ST-5) Results

Parameters	Units	5-Sept-16
Total Suspended Solids	mg/l	4

Table 2.10.2: Portage Area West Diversion Ditch (ST-6) Results

Parameters	Units	5-Sept-16
Total Suspended Solids	mg/l	4

SECTION 3 • SPILL MANAGEMENT

Figure 3.1 shows reported and non-reported spills for 2016 broken down per month and Table 3.1 summarizes AEM spill reports for September 2016. All spills reported internally and to regulators were managed appropriately on site according to AEM'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 2016 Reported and Non-Reported Spills

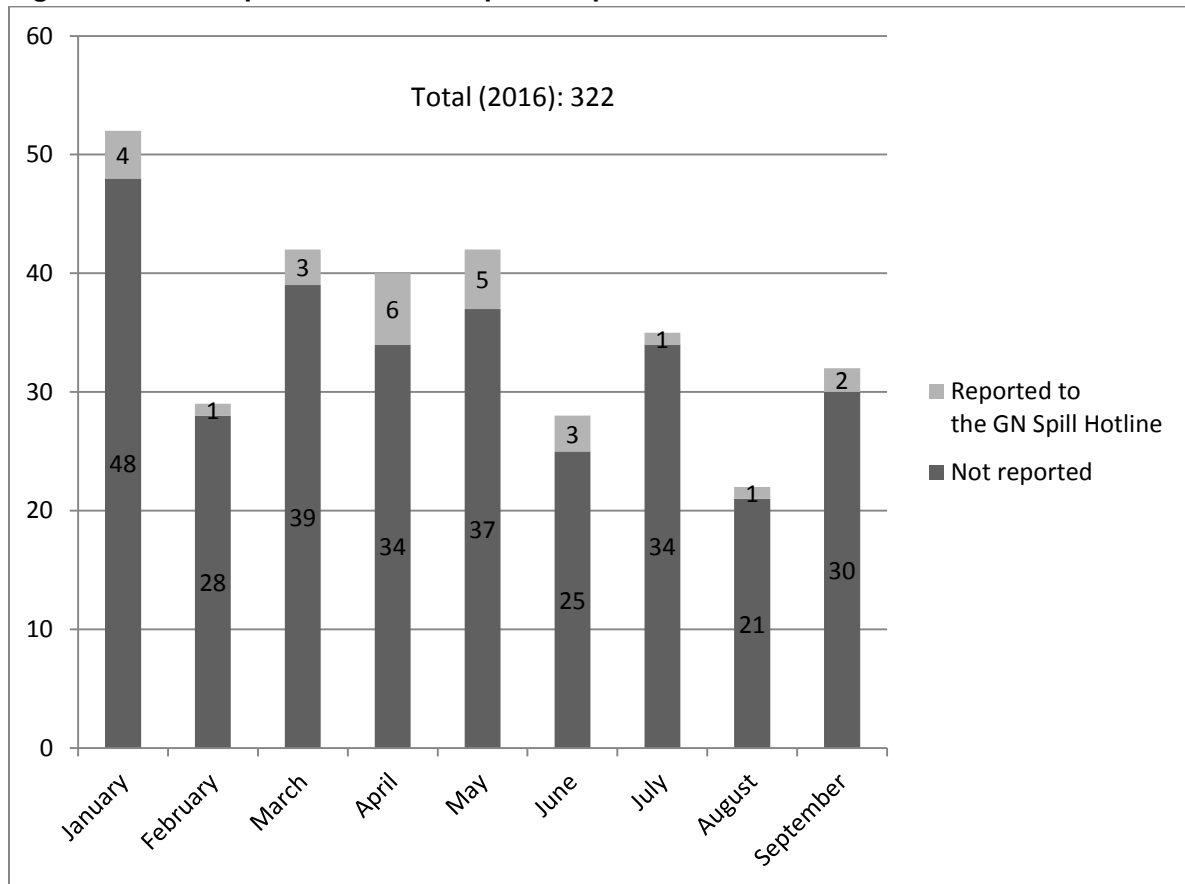


Table 3.1: Summary of Agnico Eagle Internal Spill Reports, September 2016

Date of Spill	Hazardous Material	Quantity (L/Kg)	Location	Cause of spill	Clean-up action taken	Reported to Spill GN HotLine
September 1, 2016	Hydraulic oil	80 L	Vault Pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 1, 2016	Jet A fuel	50 L	Baker Lake Jet-A tankfarm	Tank over-filling during refueling operations	Contaminated soil was picked up and disposed of at the landfarm	No
September 3, 2016	Coolant	50 L	Portage pit	Broken coolant line.	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 3, 2016	Hydraulic oil	25 L	Vault Pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 5, 2016	Hydraulic oil	50 L	Pushback parking	O'ring failure on hydraulic line	Contaminated soil was picked up and disposed of at the landfarm	No
September 6, 2016	Hydraulic oil	75 L	Pushback parking	Brake valve failure	Contaminated soil was picked up and disposed of at the landfarm	No
September 6, 2016	Diesel fuel	25 L	Vault ramp	Tank over-filling during refueling operations	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 7, 2016	Diesel fuel	5 L	MBK Tank Farm	Unknown	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 7, 2016	Hydraulic oil	30 L	Vault Pit	Cap hub failure	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 7, 2016	Hydraulic oil	70 L	Vault Pit	Broken hydraulic hose	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 8, 2016	Hydraulic oil	60 L	Vault Pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of adequately.	No
September 10, 2016	Hydraulic oil	25 L	Vault Pit	Broken hydraulic hose	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 10, 2016	Hydraulic oil	40 L	Vault Pit	Spill during maintenance	Contaminated material soil was picked up and	No

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				operations	disposed of in yellow contaminated soil roll off container.	
September 15, 2016	Hydraulic oil	75 L	Vault Pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 15, 2016	Coolant	20 L	Amaruq road entrance	Broken coolant line.	Contaminated soil was picked up and disposed of at the landfarm	No
September 16, 2016	Hydraulic oil	80 L	Vault parking	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 17, 2016	Hydraulic oil	30 L	Portage pit	O'ring failure	Contaminated soil was picked up and disposed of at the landfarm	No
September 19, 2016	Hydraulic oil	300 L	Portage pit	Hydraulic fan motor failure	Contaminated soil was picked up and disposed of at the landfarm	Yes
September 22, 2016	Hydraulic oil	25 L	Portage pit ramp	O'ring failure	Contaminated soil was picked up and disposed of at the landfarm	No
September 22, 2016	Hydraulic oil	35 L	Portage pit ramp	O'ring failure on hydraulic line	Contaminated soil was picked up and disposed of at the landfarm	No
September 22, 2016	Coolant	4 L	MBK Tank Farm	Broken coolant line.	Contaminated soil was picked up and disposed of at the landfarm	No
September 22, 2016	Hydraulic oil	120 L	Portage pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	Yes
September 23, 2016	Hydraulic oil	15 L	Portage pit	Broken hydraulic cylinder	Contaminated soil was picked up and disposed of adequately.	No
September 24, 2016	Coolant	16 L	Vault Camp Parking	Broken coolant line.	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 24, 2016	Coolant	25 L	MBK waste rock dump	Broken coolant line.	Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 24, 2016	Coolant	70 L	Vault Pit	Broken coolant line.	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
September 25, 2016	Diesel fuel	1 L	Site Service parking	Broken diesel line	Contaminated soil was picked up and disposed of at the landfarm	No
September 25, 2016	Hydraulic oil	23 L	Vault Pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 26, 2016	Hydraulic oil	40 L	Vault Dump	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 26, 2016	Hydraulic oil	20 L	MBK waste rock dump	O'ring failure on hydraulic line	Contaminated soil was picked up and disposed	No

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					of at the landfarm	
September 27, 2016	Hydraulic oil	25 L	Portage pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No
September 27, 2016	Hydraulic oil	25 L	Portage pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of at the landfarm	No