AGNICO EAGLE
MELIADINE

Meliadine Gold Project
NWB 2AM-MEL1631
April, 2019 Monthly Report

Prepared for:
Nunavut Water Board

Prepared by:
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SECTION 1 • BACKGROUND

As required under Part I, Item 10 of Type A Water License 2AM-MEL1631, this report documents the water management and monitoring activities at the mine site, and provides a summary of spills/ actions for the month of April 2019.

SECTION 2 • WATER MANAGEMENT

2.1 WATER USAGE

Table 2.1 details monthly water usage approved under Water License 2AM-MEL1631:

Table 2.1: Summary of Agnico's monthly water usage in April 2019

	Monthly Usage (m^3)
Camp and Mill (MEL-11)	25,553
Construction – Batch Plant (MEL-26 – A8)	0
Dust suppression	0
Total April	25,553
Year to date 2019	55,961

2.2 DEWATERING ACTIVITIES

In April 2019 no dewatering activity occurred

2.3 CP1

Discharge from CP1 into Meliadine Lake via the Final Discharge Point (MEL-14) ended September 3rd 2018.

2.4 SEEPAGE AND RUNOFF FROM THE LANDFILL AND LANDFARM

The 2AM-MEL1631 landfill and landfarm were commissioned in November 2017. No seepage or runoff was observed in April 2019.

2.5 SEWAGE TREATMENT PLANT

In April 2019, 2,868m^3 of treated wastewater was discharged into CP1. 65m^3 of sludge was removed during the month. The majority of the sludge is disposed of in the Tailings Storage Facility as approved, the sludge can also be utilized as nutrient in the site landfarm or shipped to the south with Agnico Eagle's hazmat if needed.

2.6 CONTAINMENTS

No water was discharged from the Itivia fuel containment facility (Station Mel-25) in April.

2.7 MONITORING ANALYTICAL DATA

In April only station MEL-11 (water intake from Meliadine Lake) was sampled as all other stations are frozen. This station doesn't have quality limits. See below the analytical results from the monitoring

MEL-11	Sample Date	4/1/2019
Parameters	**Units**	
Field Measured		
pH	pH units	7
Conductivity	uS/cm	113.2
Temperature	°C	5.6
Conventional Parameters		
pH	pH units	7.27
Specific conductivity	umhos/cm	110
Dissolved Hardness	mg/L	29.7
Total Hardness	mg/L	27.2
Total suspended solids	mg/L	< 1
Total Dissolved Solids	mg/L	125
Total organic carbon	mg/L	3.0
Dissolved organic carbon	mg/L	3.1
Turbidity	NTU	< 0.1
Major Ions		
Alkalinity, Total as CaCO3	mg/L	25
Bicarbonate, as CaCO3	mg/L	25
Calcium	mg/L	9.25
Carbonate, as CaCO3	mg/L	< 1.0
Chloride	mg/L	14
Total Cyanide	mg/L	< 0.0050
Free Cyanide	mg/L	< 0.0025
Cyanide WAD	mg/L	< 0.0010
Magnesium	mg/L	1.61
Potassium	mg/L	1.25
Sodium	mg/L	6.40
Sulphate	mg/L	5.2
Silica	mg/L	0.49
Nutrients and Chlorophyll a		
Nitrate	mg/L	< 0.10
Nitrite	mg/L	< 0.010
Nitrate + nitrite	mg/L	< 0.10
Total ammonia	mg/L	< 0.050
Total Kjeldahl nitrogen	mg/L	0.21
Total phosphorus	mg/L	< 0.020
Orthophosphate	mg/L	< 0.010
Total Metals		
Aluminum	mg/L	< 0.0030

Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00029
Barium	mg/L	0.0118
Beryllium	mg/L	< 0.00010
Bismuth	mg/L	< 0.0010
Boron	mg/L	< 0.05
Cadmium	mg/L	< 0.000010
Calcium	mg/L	8.47
Chromium	mg/L	< 0.0010
Cobalt	mg/L	< 0.00020
Copper	mg/L	0.00077
Iron	mg/L	0.022
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Magnesium	mg/L	1.47
Manganese	mg/L	0.0032
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Potassium	mg/L	1.1
Selenium	mg/L	< 0.00010
Silicon	mg/L	0.255
Silver	mg/L	< 0.000020
Sodium	mg/L	5.95
Strontium	mg/L	0.0493
Sulphur	mg/L	< 3
Thallium	mg/L	< 0.000010
Tin	mg/L	< 0.0050
Titanium	mg/L	< 0.0050
Uranium	mg/L	< 0.00010
Vanadium	mg/L	< 0.0050
Zinc	mg/L	< 0.0050
Zirconium	mg/L	< 0.00010
Dissolved Metals		
Aluminum	mg/L	< 0.0030
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00029
Barium	mg/L	0.0121
Beryllium	mg/L	< 0.00010
Bismuth	mg/L	< 0.0010
Boron	mg/L	< 0.05
Cadmium	mg/L	< 0.000010
Chromium	mg/L	< 0.0010
Cobalt	mg/L	< 0.00020
Copper	mg/L	0.00074

Iron	mg/L	0.0114
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Manganese	mg/L	0.0013
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Selenium	mg/L	< 0.00010
Silicon	mg/L	0.237
Silver	mg/L	< 0.000020
Strontium	mg/L	0.0498
Sulphur	mg/L	< 3.0
Thallium	mg/L	< 0.000010
Tin	mg/L	< 0.0050
Titanium	mg/L	< 0.0050
Uranium	mg/L	< 0.00010
Vanadium	mg/L	< 0.0050
Zinc	mg/L	< 0.0050
Zirconium	mg/L	< 0.00010
Volatile Organics		
Benzene	mg/L	< 0.00020
Ethylbenzene	mg/L	< 0.00020
Toluene	mg/L	< 0.00020
Xylenes	mg/L	< 0.00040
m,p-Xylenes	mg/L	< 0.00040
o-Xylene	mg/L	< 0.00020
F1 (C6-C10)-BTEX	mg/L	< 0.025
F1 (C6-C10)	mg/L	< 0.025
F2 (C10-C16)	mg/L	< 0.1
F3 (C16-C34)	mg/L	< 0.2
F4 (C34-C50)	mg/L	< 0.2
Reached baseline at C50	mg/L	YES

< Indicates parameter was below laboratory equipment detection limit.
> Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.
Output generated by GalReport.

SECTION 3 • MATERIAL MANAGEMENT

3.1 LANDFILL / LANDFARM

The volume of material placed into the landfill is evaluated through periodic surveys. According to the most recent survey, the landfill contained approximately 16 400 m^3 of material.

In April 2019, approximately 5.5m^3 of contaminated soil was transferred to the Type A Landfarm as a result of one raw sewage spill and minor spills cleanup.

3.2 ORE

Approximately 86,131 tonnes of ore were processed through the Mill and 30,687 tonnes of ore was taken away from the stockpiles in April.

3.3 WASTE ROCK STORAGE FACILITY

In April, a total of 55,961 tonnes of waste rock was removed in the mine development process. 5,505 tonnes were used as underground dry rockfill. 12,365 tonnes of waste were stockpiled for progressive closure cover. The rest of the material was used in construction on site.

3.4 TAILINGS

80,192 dry tonnes of filtered tailings were sent to the Tailing Storage Facility in April 2019. 5,939 tonnes of tailings were used for paste underground backfill

SECTION 4 SPILL MANAGEMENT

4.1 INTERNAL AND REPORTABLE SPILLS

All spills reported internally (8) are listed in the table 4.1 below and were managed according to Agnico's spill contingency plan. Spills were contained and cleaned up, contaminated material was disposed of in an appropriate manner, and the clean-up actions were monitored closely by the Environment Department.

Five reportable spills occurred in April (highlighted in grey).

- On April 12th 2019, a slow leak of hydraulic oil was identified on a loader operating at an active drill site on Lake B7. Approximately 1 litre of hydraulic oil was spilled to the frozen lake surface
- On April 16th 2019, a valve on Orbit Drill 3 broke, releasing approximately 5 litres of oil to the ice on Lake B7.
- On April 24th, the discharge pipe leading from wing 10 to the equalization tank of the sewage treatment plant, disconnected at a glued PVC elbow. This resulted in approximately 10m3 of untreated sewage spilling onto the gravel pad approximately 15m south of the main entrance of the camp.
- On April 24th 2019, the rotation head of a drill broke causing oil to leak to the drill floor and flow into the cutting tub. The cutting tub overflowed releasing approximately 4 litres of oil to the ice beneath the rig on Lake B7.
- On April 24th 2019, approximately 0.5 litres of diesel was identified on the frozen surface of Lake B7. Diesel spilled to ground from a hose connected to the main fuel cache.

The spills were reported as per the obligations under the Nunavut Water Board License 2AM-MEL1631 Water Licence, part H, item 8 and the Government of Nunavut's, Environmental Protection Act, paragraph 5.1(a). The follow up reports were submitted in April.

Table 4.1: Summary of Agnico's Spill Reports in April 2019

Date and time of occurrence	material	Estimated quantity (l)	Exact location of incident	Description of incident	Describe immediate corrective actions
4/1/19	Diesel	75.00	West of main camp boiler room	During a snow removal project, the presence of fuel around the boiler room fuel tank was observed. The likely cause of this fuel is expansion due to rising temperatures causing the fuel to leak from the overflow	After notifying the environment team it was decided that the snow would be cleaned from the area around the tank with a backhoe, loaded directly into a loader, and transported to the snow cell, where the fuel will be separated in the summer months.
4/1/19	power steering fluid	5.00	Warehouse parking area	An employee noticed when he arrived at the warehouse parking that he was losing power steering fluid. The fluid leak from MSB parking to the Warehouse parking was observed when looking	Contamination was picked up and disposed properly

				through the windows of the Artic Corridor.	
4/2/19	oil	3.00	TSF west berm	When dozer operator backed up with is equipment he observedoil on ground.	He stopped right away and installed adsorbent sheets underneath his dozer.
4/12/19	Hydraulic Oil	1.00	drill #6 on lake B5	A seal from the hydraulic shaft is leaking.	The contaminated snow was picked up and they put the snow into a quatrex bag.
4/16/19	Fuel	20.00	Surface fueling station "gas boy"	Employee was filling the fuel reservoir on the fuel cassette and mishandled the nozzle causing an overflow.	Employee reached his supervisor, who then immediately dispatched the upper level supervisor to inspect the level of contamination.
4/16/19	oil	5.00	63° 2'21.33"N, 92°13'41.43"W	Body valve (control balance) broke down and started to leak oil beside the drillers door. Melted ice, allowed contaminants to enter Lake B7.	Repair the broken body valve - Placed absorbents
4/21/19	Hydraulic Oil	8.00	Main Camp	Leaking hose.	Absorbent pads were used to soak up oil. Contaminated soil was brought to the landfarm.
4/24/19		10 000	Main Camp STP EQ Tank	On April 24th, the discharge pipe leading from wing 10 to the equalization tank of the sewage treatment plant, disconnected at a glued PVC elbow. This resulted in approximately 10m3 of untreated sewage spilling onto the gravel pad, approximately 15m south of the main entrance of the camp. GPS coordinates of the location are 63o02'23''N 92o13'37''W. The nearest water body is located over 250m to the north.	Initially, an employee who was outside at the time noticed the water flowing and called the E&I supervisor over the radio. The power supply was disconnected and the valve leading from the equalizer tank was closed. Contaminated material was scraped up with a loader and brought to the License A Landfarm (approximately 5m3), and will later be spread over existing windrows to enhance the bio-remediation process. INAC was previously contacted to ensure that this was a suitable plan of action for disposing of the sewage-contaminated material. An investigation was completed and the cause of the spill was determined to be caused by a weakened PVC joint. This was likely caused by expansion and contraction due to temperature fluctuation. The PVC joint was reconnected, resealed and leak tested.

4/24/19	Diesel	0.50	63° 01'55"N, 92°14'37"W	A small amount of diesel was observed on the snow beside the drill pump shack bh-102 on Lake B7. The diesel leaked out of a hose connected to the main fuel cache.	The contaminated snow was scooped up with a shovel and placed in a 5-gallon pail. The contaminated snow was deposited in the snow cell.
4/24/19	Motor Oil	1.00	Drill 3	Blown hose under control panel - most of contaminant spilled within drill.	Absorbent sheets where put down and hose was replaced under control panel
4/27/19	Power Steering Fluid	0.05	MSB Parking Lot	During the preop inspection, an operator noticed a small amount of power steering fluid underneath the pickup truck dripping on the snow.	Reported to Maintenance; operator to clean up with absorbent pads.
4/28/19	Engine Oil 10W-30	2.00	MSB In front of Door 3	The mechanic did a pre-op of the vehicle before bringing the truck to the MSD and did not see any leaks. When he brought the haul truck to the MSB he had to wait by door three. While waiting for the door to open a bystander saw the leak under the truck. They brought the truck into the MSB to prevent further leakage outside.	They put absorbent pads on the spill area and disposed of them in the hazmat bin. They attempted to shovel the affected area; however, it had frozen and they were unable to. Jeff Pratt from site service was called to have one of the equipment operators come and scrape up the contaminated area.
4/28/19	Oil	3.00	Exploration Laydown	A used oil tote leaked onto the floor of a sea can. Some of the oil dripped out of the sea can onto the snow.	Absorbent pads were placed on the oil that had leaked onto the ground. Absorbent pads were also placed at front end of the sea can to ensure no more oil dripped onto the ground. The contaminated snow was removed with a shovel.