



Meliadine Gold Project
NWB 2AM-MEL1631
November 2021 Monthly Report

Prepared for:

Nunavut Water Board

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SECTION 1 • BACKGROUND

As required under Part I, Item 9 of amended 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 November 2021.

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 November 2021

	Monthly Usage (m ³)
Camp, Mill (MEL-11)	37,440
Dust suppression	0
Total November	37,440
Year to date 2021	418,039

2.2 DEWATERING ACTIVITIES

No dewatering activities took place in November 2021.

2.3 MELIADINE DISCHARGE

Discharge from the EWTP into Meliadine Lake via the Final Discharge Point (MEL-14) started July 13th 2021 and ended October 16th 2021. No discharge to Meliadine Lake occurred in November 2021.

2.4 MELVIN BAY DISCHARGE

Discharge of treated saline effluent into Melvin Bay via the Final Discharge Point (MEL-26) started on August 12th 2021 and ended October 5th 2021. No discharge to Melvin Bay occurred in November 2021.

2.5 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 November 2021.

2.6 SEWAGE TREATMENT PLANT

In November 2021, 5,103 m³ of treated wastewater was discharged into CP1. The majority of the sludge is disposed of in the WRSF.

2.7 CONTAINMENTS

No discharge from the Itivia fuel containment facility (Station Mel-25) occurred in November 2021.

2.8 MONITORING ANALYTICAL DATA

In November 2021, 1 sample related to the Water Licence was taken. See below the analytical results from this sampling event. No exceedance occurred in November 2021.

MEL-11	Sample date	11/9/2021
Parameter	Unit	
WQ02- Conventional Parameters		
pH	pH units	7.43
Turbidity	NTU	0.3
Specific conductivity	umhos/cm	110
Hardness, as CaCO ₃ (T)	mg/L	30.4
Carbonate, as CaCO ₃	mg/L	< 1.0
Bicarbonate, as CaCO ₃	mg/L	20
TDS, calculated	mg/L	54
TDS (SM2540C)	mg/L	55
TSS	mg/L	< 1
Total organic carbon	mg/L	3.7
Dissolved organic carbon	mg/L	3.3
Total alkalinity, as CaCO ₃	mg/L	20
WQ03- Major Ions		
Calcium	mg/L	9.12
Chloride	mg/L	16
Cyanide	mg/L	< 0.0050
Cyanide (free)	mg/L	0.0027
Cyanide (WAD)	mg/L	< 0.0010
Magnesium	mg/L	1.74
Potassium	mg/L	1.06
Sodium	mg/L	7.24
Sulfate	mg/L	7.1
Silica	mg/L	0.24
WQ04- Nutrients and Chlorophyll a		
Ammonia Nitrogen	mg/L	< 0.050
Nitrate	mg/L	< 0.10
Nitrite	mg/L	< 0.010
Total Kjeldahl nitrogen	mg/L	0.21
Total phosphorus	mg/L	< 0.020
Orthophosphate (P)	mg/L	< 0.010
WQ06- Total Metals		
Aluminum	mg/L	0.0060
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00047
Barium	mg/L	0.0095
Beryllium	mg/L	< 0.00010

Boron	mg/L	< 0.050
Cadmium	mg/L	< 0.000010
Chromium	mg/L	< 0.0010
Copper	mg/L	0.00105
Iron	mg/L	0.026
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Manganese	mg/L	0.0031
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Selenium	mg/L	< 0.00010
Silver	mg/L	< 0.000020
Strontium	mg/L	0.0545
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
WQ07- Dissolved Metals		
Aluminum	mg/L	0.0031
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00042
Barium	mg/L	0.0088
Beryllium	mg/L	< 0.00010
Boron	mg/L	< 0.050
Cadmium	mg/L	< 0.000010
Chromium	mg/L	< 0.0010
Copper	mg/L	0.00090
Iron	mg/L	0.0078
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Manganese	mg/L	< 0.0010
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Selenium	mg/L	< 0.00010
Silver	mg/L	< 0.000020
Strontium	mg/L	0.0536
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
WQ10- 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

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 done August 10th, 2021 the landfill contained approximately 13,587.7 m³ of material.

In November 2021, approximately 2 m³ of contaminated soil was transferred to the Type A Landfarm as a result of spills cleanup.

3.2 ORE

Approximately 135,709 tonnes of ore were processed through the Mill in November 2021.

3.3 WASTE ROCK STORAGE FACILITY

In November 2021, a total of 43,084 tonnes of waste rock was removed in the mine development process. 15,443 tonnes were used as underground dry rockfill.

3.4 TAILINGS

96,958 dry tonnes of filtered tailings were sent to the Tailing Storage Facility in November 2021. 38,751 tonnes of tailings were used for paste underground backfill.

SECTION 4 SPILL MANAGEMENT

4.1 INTERNAL AND REPORTABLE SPILLS

Spills reported internally (13) are listed in the table 4.1 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 November 2021.

Table 4.1: Summary of Agnico's Spill Reports in November 2021

Date and time of occurrence	If material not listed in dropdown or more details, enter here	Estimated quantity	Exact location of incident	Description of incident	Describe immediate corrective actions
Tuesday, November 02, 2021 6:00:00 AM	Untreated Sewage	300 L	Main Camp, Wing 3	The spill occurred when a fitting pulled away from the pressurized piping. The piping transports sewage from the wing 3 lift station to the main camp sewage treatment facility. The fitting (Fernco) installed on the downstream side of the lift station pump was not the correct fitting for a pressurized service.	The lift station was shut down to stop the release. The topography of the area and the freezing conditions prevented the sewage from migrating off site, facilitating spill recovery. Mobile equipment was used to recover the spilled material which was placed in the waste rock storage facility (WRSF3). The fitting has since been replaced with the proper fitting for the service and an inspection of each lift station (wings 1-14) will be conducted to ensure all other fittings are replaced with the appropriate fittings for pressurized service.
Wednesday, November 03, 2021 12:30:00 AM	Diesel Fuel	30 L	E&I Ops Parking Lot	The spill was caused by a diesel fuel leak coming from the compartment that houses the 2 reels of a fuel truck.	Absorbent pads were deployed and disposed of according to procedure. The contaminated soil was removed with an excavator and brought to Landfarm A.

Wednesday, November 03, 2021 7:30:00 AM	Untreated Sewage	200 L	Main Camp, Wing P	An operator got distracted by an alarm at a sewage lift station and left the vacuum truck hose valve in the open position, causing content from the vacuum truck to seep out by gravity.	When the worker noticed that the content was seeping, the discharge was closed immediately eliminating the source of the spill. Due to sub-zero temperatures, the content froze on the ground and was collected and disposed of at the waste rock storage facility 3 (WRSF3).
Tuesday, November 16, 2021 3:00:00 AM	Cement Paste	25 m ³	Between TIRI01 Hauling Road and Paste Plant	An operator noticed a major drop in pressure in the cement paste line. When inspecting the surface line, a leak was observed around a connection flange. An estimated 25 m ³ of cement paste was released between the TIRI01 hauling road and the paste plant.	The paste plant was immediately shut down and an excavator was used to move the spilled cement paste into a rock truck. All material collected was brought to the TSF for proper disposal.
Friday, November 19, 2021 5:30:00 AM	Heat Recovery Water	3200 L	Power House Pump Room	A flowmeter rubber gasket failed, causing heat recovery water (containing 10% drewguard) from the heating network to spill inside the pump room.	It should be noted that the spill was contained inside the power house and did not reach the environment. The spilled water was recovered into totes for proper storage at the hazmat laydown. The gasket was replaced.
Saturday, November 20, 2021 4:30:00 AM	Engine Oil	8 L	MSB Shop Yard	The engine crankcase breather tube of a compressor froze over the night, which created pressure inside the engine. The crank shaft seal failed and engine oil leaked outside the compartment to the ground.	Absorbent pads were used and disposed of as hazmat.
Sunday, November 21, 2021 11:00:00 AM	Engine Oil	20 L	KCG Shop Yard	A water line passing underneath the engine oil pan of a parked drill was filled with water by mistake. With the cold weather, the water froze and expanded, which broke the oil pan and caused the engine oil leak.	Absorbent pads were used. A spill pan was also put in place to catch any remaining drippings. Contaminated material (soil, spill pads) was recovered and placed in a drum for disposal as hazmat.

Tuesday, November 23, 2021 9:00:00 AM	Heat Recovery Water	8 m ³	Arctic Corridor	An expansion joint on the heat recovery line in the Arctic corridor failed. Approximately 8 m ³ of heat recovery water was released inside the corridor and drained through the floor to the ground below.	The system was shut down and isolated. The spill was primarily contained to the pedestrian walkway. As a result of winter conditions, the volume released to the ground froze in place and was contained to the immediate area. Storage containers were removed from the area and a loader was used to clean up the frozen material. Waste material will be stored in totes for final disposal in the spring. The cause of the failed component is uncertain and is currently being investigated by an external consultant. The expansion joint was replaced, and the system inspected for further leaks.
Wednesday, November 24, 2021 5:00:00 AM	Untreated Sewage	40 L	Main Camp, Wing 6	An equipment (pump) issue at the Wing 6 lift station led to the overflow and spill of untreated sewage.	The area was cleaned with a vacuum truck. The recovered sewage was sent to another lift station for treatment at the Sewage Treatment Plant. The defective pumps were repaired.
Sunday, November 28, 2021 4:00:00 PM	Engine Oil	8 L	Drill SH-18 #3 M21- 3331	Mechanical issues were encountered on the hydraulic valve bank (o-ring failure) of a drill, causing engine oil to leak.	The drill was shut down. Absorbent pads were used to clean-up the spill and disposed of as hazmat.
Monday, November 29, 2021 8:00:00 AM	Engine Oil	2 L	Drill SH-31 #10	A spill pan installed at a diamond drill had not been properly inspected and overflowed with water, causing engine oil to migrate out of the containment area.	The contaminated water (which had turned to ice) and soil was recovered and placed into a drum for disposal as hazmat.

Tuesday, November 30, 2021 7:00:00 AM	STP Treated Water	200 L	Sewage Treatment Plant (STP)	During normal operations, a suction effect from a tee in the piping system triggered a false alarm and activated an interlock that stopped both discharge pumps on the treated water tank. The high limit of the tank also failed resulting in a continuous flow of water to the tank and an eventually overflow. This resulted in a spill of 200 liters of treated water to the ground.	The plant was shut down to stop the release to the ground outside the tank. The treated water released is normally directed to containment pond 1 (CP1). The majority of the spill migrated underneath the STP and is unable to be collected at this time. In the spring the spilled treated water will be captured and directed to CP1, the intended final location.
Tuesday, November 30, 2021 7:30:00 AM	Petroleum Products	75 L	Ore Pad 2	Equipment failure on a loader led to the release of approximately 75 L of petroleum products to the ground.	The equipment was stopped. Absorbent pads were deployed. Contaminated materials were recovered into Quatrex bags for disposal as hazmat.