



**Meliadine Gold Mine  
NWB 2AM-MEL1631  
January 2024 Monthly Report**

**Prepared for:**

Nunavut Water Board

**Prepared by:**

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## SECTION 1 • BACKGROUND

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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 January 2024.

## SECTION 2 • WATER MANAGEMENT

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### 2.1 WATER USAGE

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

**Table 2.1: Summary of the monthly water usage in 2024**

Usage	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024 Total
MEL-11 <sup>1</sup>	m <sup>3</sup>	46,859	-	-	-	-	-	-	-	-	-	-	-	46,859
Dust suppression <sup>2</sup>	m <sup>3</sup>	0	-	-	-	-	-	-	-	-	-	-	-	0
Dust suppression (CP1) <sup>3</sup>	m <sup>3</sup>	0	-	-	-	-	-	-	-	-	-	-	-	0

### 2.2 DEWATERING ACTIVITIES

No dewatering activities took place during the month.

### 2.3 WATER DISCHARGE

Table 2.3 details monthly water discharge, including:

- discharge from the EWTP to Meliadine Lake via the Final Discharge Point (MEL-14);
- discharge of treated saline effluent to Melvin Bay via the Final Discharge Point (MEL-26), and
- discharge from the Itivia fuel containment facility (MEL-25).

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<sup>1</sup> Camp, Mill, Dust suppression

<sup>2</sup> Water obtained along AWAR/Meliadine River

<sup>3</sup> Reclaim water obtained from CP1 and used for dust suppression on site

**Table 2.3: Summary of the monthly water discharge in 2024**

Location	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024 Total
MEL-14	m <sup>3</sup>	0	-	-	-	-	-	-	-	-	-	-	-	0
MEL-26	m <sup>3</sup>	0	-	-	-	-	-	-	-	-	-	-	-	0
MEL-25	m <sup>3</sup>	0	-	-	-	-	-	-	-	-	-	-	-	0

No discharge activities took place during the month.

## 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 during the month.

As per the approved Landfill (Stage 4) Berm Raise Design Report and Monitoring station MEL-24 description Modification, water accumulated inside the landfill is pumped towards Pond H13, which is the current location seepage from the landfill flows towards.

## 2.5 SEWAGE TREATMENT PLANT

Table 2.5 details monthly discharge from the Sewage Treatment Plant (STP), including the treated wastewater discharge to CP1 and sludge removed and disposed of in the WRSF.

**Table 2.5: Summary of the monthly disposal/discharge from the STP in 2024**

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024 Total
Wastewater Discharge (m <sup>3</sup> )		4,350	-	-	-	-	-	-	-	-	-	-	-	4,350
Sewage Sludge	Amount (m <sup>3</sup> )	100	-	-	-	-	-	-	-	-	-	-	-	100
	Disposal Location	WRSF3	-	-	-	-	-	-	-	-	-	-	-	-

## 2.6 MONITORING ANALYTICAL DATA

One (1) sample related to the Water Licence was taken during the month. The analytical results from this sampling event are presented in Appendix. No exceedances occurred in January 2024.

## SECTION 3 • MATERIAL MANAGEMENT

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### 3.1 LANDFILL / LANDFARM

Table 3.1 details quarterly Landfill and Landfarm survey results, as well as the amount of material placed in the Landfarm every month.

**Table 3.1: Summary of the monthly disposal in the Landfarm and quarterly survey volumes of Landfill and Landfarm**

Location	Unit	Q1			Q2			Q3			Q4			2024 Total
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Landfill (Survey)	m <sup>3</sup>	28,127			-			-			-			-
Landfarm (Survey)	m <sup>3</sup>	604 <sup>4</sup>			-			-			-			-
Landfarm <sup>5</sup>	m <sup>3</sup>	1.8	-	-	-	-	-	-	-	-	-	-	-	1.8

<sup>4</sup> Latest Landfarm survey was conducted in October 2023. Surveys of the Landfarm are generally not conducted during the winter months, as the presence of snow would not allow a representative survey of the soil quantity.

<sup>5</sup> Amount of contaminated solid material (soil) placed in the Landfarm or lined sorting area.

3.2 ORE, WASTE ROCK STORAGE FACILITY, TAILINGS

Table 3.2 details monthly material management, including processed ore, waste rock, and tailings.

Table 3.2: Summary of the monthly material management in 2024

Material (tonnes)		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Cumulative 2024
Processed Ore		190,946	-	-	-	-	-	-	-	-	-	-	-	190,946
Waste Rock	Removed from open pit mining	175,380	-	-	-	-	-	-	-	-	-	-	-	175,380
	Removed from underground mining	69,622	-	-	-	-	-	-	-	-	-	-	-	69,622
	Used as underground dry rockfill	49,823	-	-	-	-	-	-	-	-	-	-	-	49,823
Tailings	Send to TSF	144,379	-	-	-	-	-	-	-	-	-	-	-	144,379
	Used as paste underground backfill	46,567	-	-	-	-	-	-	-	-	-	-	-	46,567

## SECTION 4 SPILL MANAGEMENT

### 4.1 INTERNAL AND REPORTABLE SPILLS

Spills reported internally are listed in the table 4.1 and were managed according to Agnico Eagle'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. Eight (8) reportable spills occurred during the month (Refer to the gray shading in Table 4.1).

**Table 4.1: Summary of Agnico Eagle's Spill Reports in January 2024**

Date and time of occurrence	Contaminant	Estimated quantity	Unit	Exact location of incident	Description of incident	Describe immediate corrective actions
Tuesday, January 02, 2024 8:30:00 AM	Sewage	150	L	By the Crusher	An estimated 150 L of sewage was spilled onto the ground by the crusher water transfer outlets. A Kivalliq Contractors Group (KCG) employee filled the crusher lavatory's freshwater tank using a water truck. While the KCG employee was refilling the water tank using the water tank inlet, sewage started to come out of the sewage tank outlet and spilled onto the industrial pad.	The employee immediately stopped the water truck pump to prevent further spillage. Subsequently, the Energy & Infrastructure (E&I) personnel excavated the area to recover the sewage impacted material and transported the material to Landfarm A as per the Spill Contingency Plan.

Thursday, January 04, 2024 11:00:00 AM	Hydraulic Oil	15	L	TIR01C- 10045MS 10	A spill occurred on the PC1250 excavator during mucking operation at Tiri 1. The spill was the result of an improperly tightened hose fitting after a preventive maintenance.	The excavator was stopped, and absorbent pads were placed and were disposed of in oily solid bin at KCG maintenance garage. The supervisor was notified by the excavator operator. The fitting was tightened, and the equipment was returned to service.
Sunday, January 07, 2024 6:30:00 AM	Sewage	100	L	Wing 12	An estimated 100 L of sewage was spilled onto the industrial pad at the Wing 12 lift station. A paper towel was flushed down a toilet in Wing 12, causing the primary sewage transfer pump to fail and the holding tank to overflow, resulting in the spill. Additionally, the secondary sewage transfer pump failed to initiate due to an electrical issue.	An Energy and Infrastructure maintenance employee arrived at the scene and manually initiated the secondary transfer pump to stop the spill. Subsequently, the paper towel discovered to have disabled the primary transfer pump was removed, and the pump was reinstated. A vacuum truck was dispatched to pump out the sewage that accumulated in the lift station secondary containment. The spilled material was excavated with a backhoe, and the recovered material was transferred to Landfarm A as per the Spill Contingency Plan.
Wednesday , January 10, 2024 2:00:00 PM	Sewage	1	m <sup>3</sup>	Explo Camp	An estimated 1m <sup>3</sup> of sewage was spilled onto the ground at a lift station between the exploration camp sewage holding tank and an accommodation wing. The spill was	The Energy and Infrastructure (E&I) Maintenance supervisor immediately turned on the lift station to stop the overflow and prevent further spillage. The employee requested



					<p>discovered when a sewage truck operator found the exploration camp sewage holding tank was empty. The employee notified their supervisor, who subsequently inspected the sewage system. During the inspection it was found that the lift station between the camp sewage holding tank and the accommodation wing was not activated during the temporary reopening of the exploration camp. As a result, this lift station did not convey sewage to the final holding tank and overflowed, resulting in an estimated 1m<sup>3</sup> sewage spill.</p>	<p>equipment for snow removal to gain access to the spill location. Upon inspection and review of infrastructure drawings it was determined that the spilled material had accumulated and frozen underneath the lift station infrastructure, leaving the spilled sewage inaccessible. The impacted area will continue to be monitored, and a berm or interceptor ditch will be installed to prevent migration from the area during spring melt. The intercepted runoff will be sampled, and the test results will be compared to the effluent quality limits listed in Water License 2BB-MEL1424 Part D: Item 11. The soil beneath the infrastructure will be remediated upon reclamation of the exploration camp.</p>
<p>Wednesday , January 10, 2024 6:00:00 PM</p>	Sewage	50	L	STP	<p>An estimated 50 L of sewage was spilled onto the industrial pad at the Sewage Treatment Plant (STP). During routine ice removal from the vents of the aerobic tanks at the STP, 50 L of sewage was released out of the vent at aerobic tank number two when an employee removed ice accumulation that</p>	<p>The Energy and Infrastructure Maintenance employees immediately reported the spill as it occurred. Subsequently, they hand excavated and used universal spill pads to recover the spilled material. The recovered material was brought to Landfarm A as per the Spill Contingency Plan,</p>

					had blocked the vent. As the aerobic tank is meant to ventilate gases produced by the breakdown process, the blocked vent allowed pressure to build within the tank. The release of pressure allowed sewage foam to escape from the vent when the vent was cleared of ice and the pressure was released.	and the contaminated spill pads were incinerated.
Saturday, January 13, 2024 10:00:00 AM	Sewage	15	L	STP	An estimated 15 L of sewage was spilled onto the industrial pad during maintenance work at the STP in response to the spill that occurred on January 10th. The aerobic tank was isolated from the STP to conduct inspection and maintenance work on the distribution line between the aerobic tank and the membrane filtration tank. The STP operator failed to shut down the blower in the aerobic tank while the maintenance was being conducted. The blower generated excessive foam, which escaped from the vent at the top of the tank, resulting in the spill.	The Energy and Infrastructure Maintenance employees immediately reported the spill as it occurred. Subsequently, they hand excavated and used universal spill pads to recover the spilled material. The recovered material was brought to Landfarm A as per the Spill Contingency Plan, and the contaminated spill pads were incinerated.

Sunday, January 14, 2024 5:30:00 AM	Sewage	5	L	Wing 6 lift station.	An estimated 5 L of sewage was spilled onto the industrial pad at the wing 6 lift station. The lift station float level switches were coated in brown paper towel preventing them from engaging the sewage transfer pump. This caused the lift station to overflow, resulting in the spill.	When the spill was discovered by an Energy and Infrastructure (E&I) Maintenance employee during their routine inspection, they manually restarted the lift station sewage transfer pump, stopping the spill. The float level switches were cleaned to prevent another spill from occurring. The sewage impacted area was hand excavated and the recovered material was brought to Landfarm A as per the Spill Contingency Plan.
Sunday, January 14, 2024 3:00:00 PM	Sewage	215	L	STP	An estimated 215 L of sewage was spilled onto the industrial pad at the STP. The STP experienced an upset resulting in the membrane filtration tank and aerobic tank releasing sewage. It was discovered that the issue within the STP causing the high spill frequency was due to elevated mixed liquor suspended solids (MLSS). The elevated MLSS created favorable conditions for the generation of foam within the aerobic tank, resulting in the release of sewage from the tank vent. Excessive foam was also generated in the membrane filtration tank resulting in a spill	The Energy and Infrastructure Maintenance employees immediately reported the spill as it occurred. Subsequently, they hand excavated and used universal spill pads to recover the spilled material. The recovered material was brought to Landfarm A as per the Spill Contingency Plan, and the contaminated spill pads were incinerated. The sewage that accumulated underneath the STP is inaccessible due to the STP infrastructure and the area will be remediated upon mine closure.

					inside the STP and migrated outside of and beneath the STP infrastructure.	
Monday, January 15, 2024 8:00:00 AM	Engine Oil	3	L	TIR01C-10040MS 01	A leak on a defective O-ring on a excavator resulted in a 3L spill of Engine Oil.	The machine was shut down. Absorbent pads were deployed to collect the spill. The defective o-ring was changed. Contaminated snow was disposed of into a tote of contaminants at the KCG Maintenance Garage.
Monday, January 15, 2024 1:45:00 PM	Hydraulic Oil	50	L	TSF Cell 1 east side	A hydraulic hose failed on a compactor, resulting in a 50L spill of hydraulic oil.	Machine was shut down. Absorbent pads were deployed to contain the spill. Contaminated snow was put in the Snow Cell.
Wednesday , January 17, 2024 2:00:00 PM	Hydraulic Oil	88	L	CP4 Road, Haul Road	A hydraulic hose failed on a haul truck resulting in a 88L spill of hydraulic oil.	The haul truck was shut down. Absorbent pads were deployed to contain the spill. Contaminated snow was put in the Snow Cell.
Wednesday , January 17, 2024 10:40:00 PM	Engine Oil	15	L	Tiri 1 Pit (Ring Road)	The oil filter cover of a pickup cracked open, resulting in an 15L spill of engine oil.	Absorbent pads were deployed to contain the spill. Contaminated snow and ice was put in the Snow Cell.

Monday, January 22, 2024 7:00:00 AM	Sewage	30	L	By the Crusher	An estimated 30 L of sewage was spilled onto the industrial pad at the crusher water transfer outlets. A Sarliaq employee filled the crusher lavatory's freshwater tank using a water truck. While he was refilling the water tank, sewage released out of the sewage tank outlet causing the spill.	In response, the employee immediately stopped the water truck pump to prevent further spillage. Subsequently, Energy and Infrastructure (E&I) personnel excavated the area and transported the contaminated material to Landfarm A as per the Spill Contingency Plan.
Sunday, January 28, 2024 7:00:00 AM	Coolant	0.5	L	MSB parking	Due to cold weather, the coolant hose failed on a pick-up truck, resulting in a 0.5L spill of coolant.	Absorbent pads were deployed to clean-up and contain the spill and disposed of in a Hazmat container.

## **Appendix – Monitoring Analytical Data**

MEL-14		1/8/2024
Parameter	Unit	
<b>WQ02- Conventional Parameters</b>		
pH	pH units	7.14
Turbidity	NTU	0.2
Conductivity	umhos/cm	120
Hardness, as CaCO <sub>3</sub>	mg/L	32.4
Total alkalinity, as CaCO <sub>3</sub>	mg/L	23
Carbonate, as CaCO <sub>3</sub>	mg/L	< 1.0
Bicarbonate, as CaCO <sub>3</sub>	mg/L	23
TDS	mg/L	55
TDS, calculated	mg/L	54
TSS	mg/L	< 1
Total organic carbon	mg/L	3.3
Dissolved organic carbon	mg/L	3.1
<b>WQ03- Major Ions</b>		
Chloride	mg/L	14
Cyanide	mg/L	< 0.00050
Cyanide (free)	mg/L	< 0.0020
Cyanide (WAD)	mg/L	< 0.00050
Silica	mg/L	0.61
Sulfate	mg/L	6.2
<b>WQ04- Nutrients and Chlorophyll a</b>		
Ammonia Nitrogen (as N)	mg/L	< 0.050
Nitrate (as N)	mg/L	< 0.10
Nitrite (as N)	mg/L	< 0.010
Total Kjeldahl nitrogen	mg/L	0.20
Total phosphorus	mg/L	< 0.020
Orthophosphate (P)	mg/L	< 0.010
<b>WQ06- Total Metals</b>		
Aluminum	mg/L	< 0.0030
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00060
Barium	mg/L	0.0104
Beryllium	mg/L	< 0.00010
Boron	mg/L	< 0.050
Cadmium	mg/L	< 0.000010
Chromium	mg/L	< 0.0010
Copper	mg/L	0.00078
Iron	mg/L	< 0.010

Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Manganese	mg/L	0.0032
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	0.0523
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
<b>WQ07- Dissolved Metals</b>		
Aluminum	mg/L	< 0.0030
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00058
Barium	mg/L	0.0102
Beryllium	mg/L	< 0.00010
Boron	mg/L	< 0.050
Cadmium	mg/L	< 0.000010
Calcium (Dissolved)	mg/L	9.98
Chromium	mg/L	< 0.0010
Copper	mg/L	0.00078
Iron	mg/L	< 0.0050
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Magnesium (Dissolved)	mg/L	1.73
Manganese	mg/L	< 0.0010
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Potassium (Dissolved)	mg/L	1.21
Selenium	mg/L	< 0.00010
Silver	mg/L	< 0.000020
Sodium (Dissolved)	mg/L	7.18
Strontium	mg/L	0.0515
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
<b>WQ10- Volatile Organics</b>		
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