Meliadine Gold Mine
NWB 2AM-MEL1631
November 2023 Monthly Report

Prepared for:
Nunavut Water Board

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

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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 2023.

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 the monthly water usage in November 2023

Usage	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2023 Total
MEL-11[1]	m^3	36,021	37,240	43,452	40,082	44,346	38,080	47,136	44,663	40,080	48,121	38,470	-	457,691
Dust suppression[2]	m^3	0	0	0	0	0	0	0	0	0	0	0	-	0
Dust suppression[3]	m^3	0	0	0	0	0	264	2,080	3,455	72	108	0	-	5,979

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).

[1] Camp, Mill, Dust suppression

[2] Water obtained along AWAR/Meliadine River

[3] Reclaim water obtained from CP1 or other Contact Water management facilities and used for dust suppression on site

Table 2.3: Summary of the monthly water discharge in November 2023

Location	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2023 Total
MEL-14	m^3	0	0	0	0	0	209,024	81,119	54,894	184,508	0	0	-	529,545
MEL-26	m^3	0	0	0	0	0	0	0	0	0	0	0	-	0
MEL-25	m^3	0	0	0	0	2,060	0	510	0	0	0	0	-	2,570

Discharge of treated effluent from the EWTP into Meliadine Lake via the Final Discharge Point (MEL-14) started on June 10th, 2023 and was completed on September 30th, 2023.

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 November 2023

		JAN	FEB	MAR	APR	MAY	JUN		JUL		AUG	SEP	OCT	NOV	DEC	2023 Total
Wastewater Discharge (m^3)		5,141	4,305	4,522	4,519	4,764	4,754		5,095		4,913	4,960	4967	4,557	-	47,940
Sewage Sludge[4]	Amount (m^3)	17	7	40.5	38	21	19	1	17	5	36	15	88	165	-	469.5
	Disposal Location	WRSF1	WRSF3	WRSF3	WRSF3	WRSF3	WRSF1	WRSF3	WRSF3	WRSF1	WRSF1	WRSF1	WRSF1	WRSF1	-	NA

2.6 MONITORING ANALYTICAL DATA

Two (2) samples related to the Water Licence were taken during the month. The analytical results are presented in Appendix.

[4] Sewage sludge volumes for the months of March, April and August have been revised in the October report after QA/QC of the data.

On November 5th, as due diligence, the Nunavut Spill Line was notified by Agnico Eagle of a potential Total Suspended Solids (TSS) exceedance in surface water runoff at the Itivia site on November 4th. Results of samples collected showed TSS concentrations below the allowable TSS criteria listed under Part D, Item 18 of the 2AM-MEL1631 Water Licence. Thus, the event was reported as due diligence and is not an exceedance under Part D Item 18 of the 2AM-MEL1631 Water Licence. Further information can be found in the spill follow-up report (Follow-up Report Spill #2023-462 – MEL-SR-1 Surface Water Runoff at the Meliadine Gold Mine, Itivia Site).

SECTION 3 • MATERIAL MANAGEMENT

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			2023 Total
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Landfill (Survey)	m^3	25,666			23,663			22,118			23,155			-
Landfarm (Survey)	m^3	-			143			272			604			-
Landfarm[5]	m^3	0.05	41.5	3	5.5	46.05	0.25	0.07	1.55	1	5.10	7	-	111.07

[5] 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 November 2023

Material (tonnes)		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Cumulative 2023
Processed Ore		155,514	150,876	171,369	149,029	172,955	137,629	166,668	153,272	147,832	180,840	163,803	-	1,749,787
Waste Rock	Removed from open pit mining	50,606	42,866	114,885	159,630	287,354	249,975	372,511	435,222	534,927	470,350	304,961	-	3,023,287
	Removed from underground mining	67,109	51,780	70,674	73,390	81,439	56,214	63,078	52,904	65,080	57,339	57,337	-	696,344
	Used as underground dry rockfill	51,834	48,024	35,017	18,200	44,224	42,578	29,540	27,102	44,190	39,315	25,282	-	405,306
Tailings	Send to TSF	133,227	121,499	132,300	110,473	125,285	112,728	124,335	117,102	110,412	146,175	150,201	-	1,382,866
	Used as paste underground backfill	22,287	29,377	39,069	38,556	45,670	24,901	42,333	39,041	37,420	34,665	13,602	-	366,921

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. Three (3) 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 November 2023

Date and time of occurrence	Contaminant	Estimated quantity	Unit	Exact location of incident	Description of incident	Describe immediate corrective actions
Thursday, November 02, 2023 12:00:00 AM	Hydraulic Oil	15	L	Dyno Yard	The operator was using a skidsteer and noticed hydraulic fluid leaking from the left track.	The engine was stopped and the operator called his supervisor. Absorbent pads were deployed to collect the spill.
Saturday, November 04, 2023 8:30:00 AM	Engine Oil	10	L	Drill 6SH-91	During normal operations, a hydraulic hose broke inside the drill. The spill was contained inside the drill and did not reach the environment.	Spill was collected with absorbent pads and disposed of in a hazmat bag.
Monday, November 06, 2023 6:30:00 AM	Sewage	50	L	Orbit Complex	An estimated 50 L of sewage was spilled onto the ground at the Orbit Garant holding tank. The facility was serviced but its valve was inadvertently left partially open, allowing for sewage to leak from the valve into the enclosure. No water bodies were impacted by this spill.	Upon detection of the spill, a member of the Energy & Infrastructure (E&I) department closed the valve stopping the leak. Following this, E&I personnel used a vacuum truck to remove free liquid within the secondary containment and the ground surface. E&I personnel then hand-excavated the area to recover the contaminated material. Snowfall occurred later in the morning; a

						loader was utilized to perform a final scraping in the affected area. The material collected was transported to Landfarm A as per the Spill Contingency Plan.
Saturday, November 11, 2023 6:00:00 AM	Sewage	50	L	Orbit dome	An estimated 50 L of sewage was spilled onto the ground by Orbit Garant holding tank. The Energy and Infrastructure (E&I) department discovered a leak resulting from a malfunctioning valve.	In response, a plumber was called to replace the malfunctioning valve and install a camlock cap as an additional precaution. Subsequently, E&I personnel hand-excavated the area to recover the contaminated material and transported the material to Landfarm A as per the Spill Contingency Plan.
Monday, November 13, 2023 10:20:00 AM	Coolant	92	L	Tiri 1 Phase 3	After leaving the excavator with a load, a coolant line failed. The truck traveled a short distance with a broken hose, leaving behind a trail of coolant.	The truck was stopped. Absorbent pads were deployed. Contaminated materials were collected and disposed of in a quatrex bag.
Saturday, November 18, 2023 1:00:00 PM	Diesel	20	L	Verti mill laydown	A fuel line on KCG generator failed resulting in a 20L spill of diesel.	Absorbent pads were deployed to collect the spill. Contaminated materials were collected in a quatrex bag.
Monday, November 27, 2023 1:00:00 PM	Heat Recovery Water	6	L	CCBM	An employee was walking past the boiler complex and noticed icicles formed underneath the boiler complex building. He went inside the complex and noticed that the system's air release was leaking air, along with heat recovery water containing diluted Drewgard 4109 corrosion inhibitor. This water overflowed from the pail installed in case of a water	Heating technician was called and the air release was closed to prevent future water from leaking out. Ice was removed, put in a pail and thawed inside a warm building. Afterwards, the water was put into the power plant sump, which was then transferred to hazmat totes to be shipped off site.

					release, and spilled outside by a small hole in the floor of the boiler complex.	
Monday, November 27, 2023 8:00:00 PM	Cyanide	0.14	Kg	Process Plant Reagents laydown (North of the Mill)	Operator was removing a bag of cyanide briquettes from the sea can with the Telehandler. While doing so, he punctured the right bottom corner of the cyanide bag with the fork of the Telehandler. Approx. 10 briquettes of cyanide spilled on the ground in front of the sea can.	Red tape was set-up to secure the area and the H&S and Environment departments were advised. The spill was cleaned per the cyanide spill procedure. Briquettes and contaminated snow were disposed of into the cyanide mixing hopper/mixing tank inside the Process Plant. All other materials (tarp, plastic bucket, PPE) were disposed of in the cyanide waste roll-off bin on the Northside of the Church building. The red tape was kept in place until daylight hours for a secondary inspection.
Wednesday, November 29, 2023 2:30:00 PM	Sewage	4	m^3	Wing 10	Approximately 4m3 of sewage was inadvertently released due to a damaged sewage distribution line between the accommodations and the Wing 10 lift station. Snow accumulation on line caused a crack due to direct stress on the line.	The leak was discovered by Energy & Infrastructure personnel during snow removal activities after a recent blizzard event. An equipment operator immediately notified their supervisor of the leak and personnel was sent to assess and conduct the necessary repairs. Once the snow was removed and area was made accessible, the damaged section of the line was replaced, and an additional support bracket was installed in this location. Subsequently, E&I personnel excavated the area with a backhoe to recover

						sewage impacted snow and transported the material to Landfarm A as per the Spill Contingency Plan.

Appendix – Monitoring Analytical Data

MEL-11		11/5/2023
Parameter	**Unit**	
WQ02- Conventional Parameters		
pH	**pH units**	7.78
Turbidity	**NTU**	0.2
Conductivity	**umhos/cm**	110
Hardness, as CaCO3	**mg/L**	28.1
Total alkalinity, as CaCO3	**mg/L**	27
Carbonate, as CaCO3	**mg/L**	< 1.0
Bicarbonate, as CaCO3	**mg/L**	27
TDS	**mg/L**	40
TDS, calculated	**mg/L**	56
TSS	**mg/L**	< 1
Total organic carbon	**mg/L**	3.2
Dissolved organic carbon	**mg/L**	3.5
WQ03- Major Ions		
Chloride	**mg/L**	15
Cyanide	**mg/L**	< 0.00050
Cyanide (free)	**mg/L**	0.0068
Cyanide (WAD)	**mg/L**	< 0.00050
Silica	**mg/L**	0.48
Sulfate	**mg/L**	5.3
WQ04- Nutrients and Chlorophyll a		
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**	0.24
Total phosphorus	**mg/L**	< 0.020
Orthophosphate (P)	**mg/L**	< 0.010
WQ06- Total Metals		
Aluminum	**mg/L**	< 0.0030
Antimony	**mg/L**	< 0.00050
Arsenic	**mg/L**	0.00050
Barium	**mg/L**	0.0090
Beryllium	**mg/L**	< 0.00010
Boron	**mg/L**	< 0.050
Cadmium	**mg/L**	< 0.000010
Chromium	**mg/L**	< 0.0010
Copper	**mg/L**	0.00077
Iron	**mg/L**	< 0.010
Lead	**mg/L**	< 0.00020
Lithium	**mg/L**	< 0.0020

Manganese	**mg/L**	0.0022
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**	0.0516
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**	< 0.0030
Antimony	**mg/L**	< 0.00050
Arsenic	**mg/L**	0.00049
Barium	**mg/L**	0.0085
Beryllium	**mg/L**	< 0.00010
Boron	**mg/L**	< 0.050
Cadmium	**mg/L**	< 0.000010
Calcium (Dissolved)	**mg/L**	9.70
Chromium	**mg/L**	< 0.0010
Copper	**mg/L**	0.00082
Iron	**mg/L**	0.0052
Lead	**mg/L**	< 0.00020
Lithium	**mg/L**	< 0.0020
Magnesium (Dissolved)	**mg/L**	1.69
Manganese	**mg/L**	< 0.0010
Mercury	**mg/L**	< 0.00001
Molybdenum	**mg/L**	< 0.0010
Nickel	**mg/L**	< 0.0010
Potassium (Dissolved)	**mg/L**	1.11
Selenium	**mg/L**	< 0.00010
Silver	**mg/L**	< 0.000020
Sodium (Dissolved)	**mg/L**	7.00
Strontium	**mg/L**	0.0510
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

MEL-SR1				11/5/2023
Parameter	**MEL-SR MAX GRAB (WSEEP/RO)**	**MEL-SR MAX MEAN (WSEEP/RO)**	**Unit**	
WQ02- Conventional Parameters				
pH			**pH units**	7.62
Turbidity			**NTU**	5.1
Hardness, as CaCO3			**mg/L**	1090
Total alkalinity, as CaCO3			**mg/L**	290
TDS			**mg/L**	3530
TDS, calculated			**mg/L**	3400
TSS	100	50	**mg/L**	14
WQ03- Major Ions				
Chloride			**mg/L**	1500
Cyanide			**mg/L**	0.00081
Fluoride			**mg/L**	0.17
Silica			**mg/L**	8.0
Sulfate			**mg/L**	460
WQ04- Nutrients and Chlorophyll a				
Ammonia Nitrogen (as N)			**mg/L**	3.8
Nitrate (as N)			**mg/L**	3.48
Nitrite (as N)			**mg/L**	0.081
Total phosphorus			**mg/L**	0.059
Orthophosphate (P)			**mg/L**	< 0.010
WQ05- General Organics				
Total oil and grease			**mg/L**	0.80
WQ06- Total Metals				
Aluminum			**mg/L**	0.126
Arsenic			**mg/L**	0.00935
Barium			**mg/L**	0.116

Cadmium			**mg/L**	0.000212
Chromium			**mg/L**	< 0.0020
Copper			**mg/L**	0.0051
Iron			**mg/L**	1.25
Lead			**mg/L**	< 0.00040
Lithium			**mg/L**	0.0246
Manganese			**mg/L**	1.30
Mercury			**mg/L**	< 0.00001
Molybdenum			**mg/L**	< 0.0020
Nickel			**mg/L**	0.164
Selenium			**mg/L**	< 0.00020
Silver			**mg/L**	< 0.000040
Thallium			**mg/L**	< 0.000020
Zinc			**mg/L**	0.013
WQ07- Dissolved Metals				
Calcium (Dissolved)			**mg/L**	292
Magnesium (Dissolved)			**mg/L**	135
Potassium (Dissolved)			**mg/L**	39.4
Sodium (Dissolved)			**mg/L**	785