AGNICO EAGLE
MELIADINE

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

Prepared for:
Nunavut Water Board

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

June 28th, 2019

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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 May 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 May 2019

	Monthly Usage (m^3)
Camp and Mill (MEL-11)	25,624
Construction – Batch Plant (MEL-26 – A8)	0
Dust suppression	0
Total May	25,624
Year to date 2019	81,603

2.2 DEWATERING ACTIVITIES

In May 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 May 2019.

2.5 SEWAGE TREATMENT PLANT

In May 2019, 3,077m^3 of treated wastewater was discharged into CP1. 72.5m^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 May.

2.7 MONITORING ANALYTICAL DATA

In May, five surface runoff were sampled and all analysis were below the limits. Five other samples related to the water Licence were also sampled in May. These samples don't have quality limit. See below the analytical results from these monitoring stations

Sample Date				5/20/2019	5/20/2019	5/27/2019	5/27/2019	5/27/2019
Location				MEL-SR1	MEL-SR7	MEL-SR11	MEL-SR1	MEL-SR7
Parameter	**MEL-SR MAX GRAB**	**MEL-SR MAX MEAN**	**Unit**					
WQTC01-Field Measured								
pH			pH units	7.51	7.52	7.9	7.96	7.9
Conductivity			uS/cm	349.2	334	533.9	398.6	421
Temperature			°C	0.17	0.23	0.84	0.3	0.12
Dissolved oxygen			mg/L	16.38	16.42	13.25	14.82	14.75
Dissolved oxygen			%	112.7	113.2	95	104.6	103.5
WQTC02-Conventional Parameters								
pH	6.0 - 9.5	6.0 - 9.5	pH units	7.71	7.71	7.88	7.88	7.91
Total suspended solids	100	50	mg/L	34	17	3	23	20
Turbidity			NTU	24	25	2.7	29	24
Total Dissolved Solids			mg/L	245	205	305	230	260
WQTC03-Major Ions								
Alkalinity, Total as CaCO3			mg/L	54	52	80	63	70
Hardness, Calcium Carbonate			mg/L	103	92.5	88.8	116	126
Chloride			mg/L	36	33	80	40	42
Cyanide			mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Fluoride			mg/L	< 0.10	< 0.10	0.15	< 0.10	< 0.10
Sulphate			mg/L	42	46	44	51	53
WQTC04-Nutrients and Chlorophyll a								
Nitrate			mg/L	0.29	0.33	1.67	0.21	0.11
Nitrite			mg/L	0.013	0.018	0.015	< 0.010	< 0.010
Nitrate + nitrite			mg/L	0.3	0.35	1.69	0.21	0.11
Total ammonia			mg/L	0.28	0.54	0.83	< 0.050	< 0.050
Total phosphorus			mg/L	0.064	0.049	0.075	0.051	0.042
Orthophosphate			mg/L	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

WQTC05-General Organics								
Total oil and grease			mg/L	< 0.50	< 0.50	1.6	1	1.4
WQTC06-Total Metals								
Aluminum			mg/L	0.741	0.375	0.25	0.72	0.474
Antimony			mg/L	< 0.00050	< 0.00050	0.00204	< 0.00050	< 0.00050
Arsenic			mg/L	0.00206	0.00136	0.00187	0.00187	0.00119
Barium			mg/L	0.0247	0.0198	0.0137	0.025	0.0263
Beryllium			mg/L	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
Bismuth			mg/L	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Boron			mg/L	< 0.05	< 0.05	0.066	< 0.05	< 0.05
Cadmium			mg/L	0.000027	0.000025	0.000033	0.000021	0.000018
Calcium			mg/L	32.6	29.2	23.8	36.8	41.1
Chromium			mg/L	0.0049	0.0027	0.0019	0.0048	0.0038
Cobalt			mg/L	0.00148	0.00091	0.00126	0.00137	0.00081
Copper			mg/L	0.00874	0.00751	0.00586	0.00613	0.00531
Iron			mg/L	1.27	0.669	0.415	1.22	0.765
Lead			mg/L	0.00068	0.00047	0.0003	0.00066	0.00042
Lithium			mg/L	0.0128	0.0054	0.0045	0.0071	0.0059
Magnesium			mg/L	5.23	4.77	7.13	5.79	5.82
Manganese			mg/L	0.116	0.0733	0.0828	0.0547	0.0277
Mercury			mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum			mg/L	0.0014	< 0.0010	0.0029	< 0.0010	< 0.0010
Nickel			mg/L	0.0057	0.0035	0.0041	0.0059	0.0041
Potassium			mg/L	6.33	5.73	5.97	5.31	5.69
Selenium			mg/L	0.00011	0.0001	0.00035	< 0.00010	< 0.00010
Silicon			mg/L	1.88	1.15	1.3	1.86	1.48
Silver			mg/L	< 0.000020	< 0.000020	< 0.000020	< 0.000020	< 0.000020
Sodium			mg/L	17.1	18.2	51.3	21.4	21.2
Strontium			mg/L	0.222	0.145	0.134	0.21	0.215
Sulphur			mg/L	15.9	15.7	14.2	17.5	18.4
Thallium			mg/L	0.000017	0.000013	0.00002	0.000013	< 0.000010
Tin			mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Titanium			mg/L	0.0299	0.0148	0.0113	0.0299	0.0178
Uranium			mg/L	0.0006	0.0005	0.00357	0.0006	0.00064
Vanadium			mg/L	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Zinc			mg/L	0.0143	0.0106	< 0.0050	0.0171	0.0068

Zirconium			mg/L	0.0003	0.00018	0.00012	0.00035	0.00018

MEL-SR LIMITS MAX GRAB
MEL-SR LIMITS MAX MEAN
< Indicates parameter was below laboratory equipment detection limit.
> Indicates parameter detected above equipment analytical range.
- Chemical not analyzed or criteria not defined.

MEL-11	**Sample Date**	5/6/2019
Parameters	**Units**	
WQTC01-Field Measured		
pH	pH units	6.98
Conductivity	uS/cm	130.2
Temperature	°C	6.1
Dissolved oxygen	mg/L	-
Dissolved oxygen	%	-
WQTC02-Conventional Parameters		
pH	pH units	7.44
Specific conductivity	umhos/cm	110
Dissolved Hardness	mgCaCO3/L	32.5
Total Hardness	mgCaCO3/L	31.5
Total suspended solids	mg/L	< 1
Total Dissolved Solids	mg/L	75
Total organic carbon	mg/L	2.9
Dissolved organic carbon	mg/L	2.9
Turbidity	NTU	< 0.1
WQTC03-Major Ions		
Alkalinity	mgCaCO3/L	24
Bicarbonate	mgCaCO3/L	24
Calcium	mg/L	10.3
Carbonate	mgCaCO3/L	< 1.0
Chloride	mg/L	15
Total Cyanide	mg/L	< 0.0050
Cyanide WAD	mg/L	< 0.0010
Free Cyanide	mg/L	< 0.0010
Magnesium	mg/L	1.66
Potassium	mg/L	1.28
Sodium	mg/L	6.70
Sulphate	mg/L	5.1
Silica	mg/L	0.56
WQTC04-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	0.19
Total phosphorus	mg/L	0.040
Orthophosphate	mg/L	< 0.010
WQTC06-Total Metals		
Aluminum	mg/L	0.0055
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00033
Barium	mg/L	0.0128
Beryllium	mg/L	< 0.00010
Bismuth	mg/L	< 0.0010
Boron	mg/L	< 0.05
Cadmium	mg/L	< 0.000010
Calcium	mg/L	9.92
Chromium	mg/L	< 0.0010
Cobalt	mg/L	< 0.00020
Copper	mg/L	0.00086
Iron	mg/L	0.029
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Magnesium	mg/L	1.64
Manganese	mg/L	0.0045
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Potassium	mg/L	1.3
Selenium	mg/L	< 0.00010
Silicon	mg/L	0.31
Silver	mg/L	< 0.000020
Sodium	mg/L	6.75
Strontium	mg/L	0.0528
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
WQTC07-Dissolved Metals		
Aluminum	mg/L	< 0.0030
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00030
Barium	mg/L	0.0123

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	0.00079
Iron	mg/L	0.0133
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Manganese	mg/L	0.0015
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Selenium	mg/L	< 0.00010
Silicon	mg/L	0.317
Silver	mg/L	< 0.000020
Strontium	mg/L	0.0529
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
WQTC08-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.

	Sample Date	22/05/2019	22/05/2019	29/05/2019	30/05/2019
	Location	MEL-20	MEL-21	MEL-20	MEL-22
Parameters	**Units**				
WQTC01-Field Measured					
pH	pH units	8.58	8.24	7.7	6.31
Conductivity	uS/cm	1423	1313	-	2227
Temperature	°C	3.5	4.49	4.28	0.87
Dissolved oxygen	%	101.6	101.9	79.1	109.2
WQTC02-Conventional Parameters					
pH	pH units	7.36	7.55	7.70	7.56
Hardness, as CaCO3	mg/L	-	-	-	477
Hardness, Calcium Carbonate	mg/L	139	184	142	462
Total suspended solids	mg/L	100	71	50	2
Total Dissolved Solids	mg/L	420	515	430	1280
Turbidity	NTU	190	77	130	5.0
WQTC03-Major Ions					
Calcium	mg/L	-	-	-	144
Chloride	mg/L	140	170	130	520
Cyanide	mg/L	0.0076	< 0.0050	0.0074	< 0.0050
Fluoride	mg/L	< 0.10	< 0.10	0.12	< 0.10
Magnesium	mg/L	-	-	-	28.6
Potassium	mg/L	-	-	-	12.3
Sodium	mg/L	-	-	-	185
Sulphate	mg/L	73	76	70	130
WQTC04-Nutrients and Chlorophyll a					
Alkalinity, Total as CaCO3	mg/L	55	67	62	42
Nitrate	mg/L	6.36	1.88	6.53	6.50
Nitrite	mg/L	0.114	0.059	0.123	0.093
Nitrate + nitrite	mg/L	6.48	1.94	6.65	6.59
Total ammonia	mg/L	4.5	1.4	4.7	7.2
Total phosphorus	mg/L	0.24	0.052	0.39	0.049
Orthophosphate	mg/L	0.072	< 0.010	0.067	< 0.010
WQTC06-Total Metals					
Aluminum	mg/L	2.83	1.1	1.1	0.134
Antimony	mg/L	-	-	-	< 0.00050
Arsenic	mg/L	0.236	0.0395	0.119	0.00513
Barium	mg/L	0.0497	0.0327	0.0365	0.0491
Beryllium	mg/L	-	-	-	< 0.00010
Bismuth	mg/L	-	-	-	< 0.0010
Boron	mg/L	-	-	-	0.105
Cadmium	mg/L	0.000036	0.000028	0.000023	0.000058
Calcium	mg/L	37.9	54	39.2	139
Chromium	mg/L	0.0071	0.0030	0.0030	< 0.0010

Cobalt	mg/L	-	-	-	0.00117
Copper	mg/L	0.0153	0.0109	0.00832	0.00312
Iron	mg/L	4.48	1.8	2.28	0.287
Lead	mg/L	0.0156	0.00294	0.00574	0.00086
Lithium	mg/L	-	-	-	0.0705
Magnesium	mg/L	10.7	11.9	10.7	27.6
Manganese	mg/L	0.197	0.109	0.198	0.17
Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Molybdenum	mg/L	0.0038	0.0080	0.0040	0.0012
Nickel	mg/L	0.0164	0.0132	0.0153	0.0066
Potassium	mg/L	9.31	11.3	8.65	11.8
Selenium	mg/L	0.00033	0.00023	0.00024	0.00012
Silicon	mg/L	-	-	-	1.12
Silver	mg/L	0.000031	0.000049	< 0.000020	0.000026
Sodium	mg/L	69.5	73.5	76.5	181
Strontium	mg/L	-	-	-	2.52
Sulphur	mg/L	29.7	26.2	24.4	48
Thallium	mg/L	-	-	-	0.000031
Tin	mg/L	-	-	-	< 0.0050
Titanium	mg/L	0.147	0.0504	0.0636	0.0051
Uranium	mg/L	-	-	-	0.00080
Vanadium	mg/L	-	-	-	< 0.0050
Zinc	mg/L	0.0115	0.0054	0.0061	0.0055
Zirconium	mg/L	-	-	-	0.00014
WQTC07-Dissolved Metals					
Aluminum	mg/L	-	-	-	0.0214
Antimony	mg/L	-	-	-	< 0.00050
Arsenic	mg/L	-	-	-	0.00373
Barium	mg/L	-	-	-	0.0516
Beryllium	mg/L	-	-	-	< 0.00010
Bismuth	mg/L	-	-	-	< 0.0010
Boron	mg/L	-	-	-	0.111
Cadmium	mg/L	-	-	-	0.000072
Chromium	mg/L	-	-	-	< 0.0010
Cobalt	mg/L	-	-	-	0.00036
Copper	mg/L	-	-	-	0.00285
Iron	mg/L	-	-	-	0.0336
Lead	mg/L	-	-	-	0.00024
Lithium	mg/L	-	-	-	0.0709
Manganese	mg/L	-	-	-	0.0736
Mercury	mg/L	-	-	-	< 0.000050
Molybdenum	mg/L	-	-	-	0.0013
Nickel	mg/L	-	-	-	0.0062
Selenium	mg/L	-	-	-	< 0.00010
Silicon	mg/L	-	-	-	0.951

Silver	mg/L	-	-	-	< 0.000020
Strontium	mg/L	-	-	-	2.57
Sulphur	mg/L	-	-	-	50.0
Thallium	mg/L	-	-	-	0.000033
Tin	mg/L	-	-	-	< 0.0050
Titanium	mg/L	-	-	-	< 0.0050
Uranium	mg/L	-	-	-	0.00087
Vanadium	mg/L	-	-	-	< 0.0050
Zinc	mg/L	-	-	-	0.0051
Zirconium	mg/L	-	-	-	0.00011

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- Chemical not analyzed or criteria not defined.

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 May 2019, approximately 3m^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 93,564 tonnes of ore were processed through the Mill and 12,485 tonnes of ore was taken away from the stockpiles in May.

3.3 WASTE ROCK STORAGE FACILITY

In May, a total of 47,055 tonnes of waste rock was removed in the mine development process. 1,807 tonnes were used as underground dry rockfill. No waste was stockpiled for progressive closure cover.

3.4 TAILINGS

81,733 dry tonnes of filtered tailings were sent to the Tailing Storage Facility in May 2019. 11,831 tonnes of tailings were used for paste underground backfill

SECTION 4 SPILL MANAGEMENT

4.1 INTERNAL AND REPORTABLE SPILLS

All spills reported internally (5) 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.

Three reportable spills occurred in May (highlighted in grey).

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 May 2019

Date and time of occurrence	material	Estimated quantity (l)	Exact location of incident	Description of incident	Describe immediate corrective actions

5/12/2019	Treated STP effluent	10000.00	Main Camp Lift Station	On May 12, 2019 a vacuum truck was unloading treated water at the MSB lift station, which had been removed and transferred from the exploration camp STP. A pump failure at the main camp lift station led to an overflow of the tank and a release of approximately 10m3 of treated water onto the ground underneath the camp and onto the gravel pad south of the camp. No water bodies were impacted by this release. The closest natural water body is approximately 275m away.	Operators noticed the overflow, and immediately stopped pumping from the truck. The environment department was contacted and a spill report was filled out. The root cause of that spill was a failure of one of the two pumps of the main lift station that makes the main breaker of the control panel trip. The treated water, which overflowed, had been transferred by truck from the exploration camp sewage treatment plant, was input to the main camp lift station. Lift stations are on a preventive maintenance schedule and are inspected at the beginning of each shift. The Energy & Infrastructure department will install a separate circuit for the alarm so it will function in the event of a power outage. The most recent water quality analysis for MEL-7 (STP treated effluent from exploration camp) at the time of the spill showed that all parameters met the criteria for discharge.
5/16/2019	Water oil glycol	84.00	Beside powerhouse	Tote was leaking for an unknown amount of time	Environment was contacted. Backhoes dug out the contaminated soil and stored it another tote that was labeled "Waste, Oily Solids". It was brought to the environment laydown along with the tote that had leaked.

5/16/2019	Treated STP effluent	8000.00	Main Camp Lift Station	During a daily inspection, water was noticed to be flowing from the main camp lift station. At this time, the treated wastewater from the exploration camp was being discharged into the lift station using a vacuum truck. The operator of the truck was notified immediately and pumping was stopped. The cause of the spill was a mechanical failure on a glued elbow joint on the vertical section of piping from one of the lift station pumps. Approximately 8m3 of water was released onto the ground. This release occurred in the same location as the spill occurring on May 12, 2019 (19-202). No water bodies were impacted by this release. The closest natural water body is approximately 275m away.	Employees noticed the water and pumping from the truck was stopped immediately. A vacuum truck was used to remove standing water around the lift station building. Contaminated snow and soil was transported to the landfarm using a loader.
5/18/2019	Waste Oil	200.00	Hazmat Laydown, opposite incinerator.	On May 18 2019, an operator was using a tele-handler to load waste oil totes into a seacan. The operator punctured a tote causing ~200L of waste oil to spill to ground. Waste oil was confined to a puddle on the access road. No water bodies were impacted by this	Site personnel maneuvered the leaking tote to prevent further spillage. Waste oil, which had flowed into a puddle on the adjacent access road, was contained using a hydrocarbon absorbent boom. Waste oil was removed from the water surface using absorbent pads, which were disposed of as hazmat.

				release. The closest natural water body is approximately 560m away. The exact location of the spill was 63° 2'12.60"N, 92°13'12.41"W.	
5/19/2019		5.00	Cell 6 TSF	while excavating a bell hole for pumping with the small rubber tire backhoe, hydraulic hose blew. Operator heard the noise and seen the hose spewing oil,	stopped immediately and used spill kit to absorb material on tailings. 1/4 bucket of tailings removed and taken to Landfarm.
5/21/2019	Used Oil	10.00	Explo Laydown	A used oil tote was placed in a sea can with no lid. When the hyster moved the sea can the oil spilled out of the top of the tote. The oil that spilled, leaked onto the floor of the sea can and then out of the sea can onto the ground.	Absorbent pads were placed on the ground. Some of the oil entered a puddle, a small berm was created to ensure the oil did not seep anywhere else. Absorbent material was placed in the water to collect the oil and then the contaminated soil was scraped up.
5/23/2019	Transmission Fluid	8.00	South side on construction office	Armand Raymond noticed that the tractor truck was leaking transmission fluid.	Armand notified his supervisor and the absorbents were placed on the contaminated area. Contaminated soil was removed collected.
5/26/2019	Copper Sulfate	3.00	North Door of Mill	The night shift operator did not was the big copper sulfate bag properly. Day operator took bag to the roll off bin outside and the bag fall on the ground and copper sulfate was left outside causing the spill	Told the operator immediately to clean the spill outside - scooped material off ground