MELIADINE GOLD MINE

2021 Annual Report

Prepared for:
Nunavut Water Board
Nunavut Impact Review Board
Government of Nunavut
Fisheries and Oceans Canada
Crown-Indigenous Relations and Northern Affairs Canada
Kivalliq Inuit Association

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

April 2022

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ABBREVIATIONS

AEMP	Aquatic Ecosystem Monitoring Program
AP	Acid Potential
ARD	Acid Rock Drainage
AWAR	All Weather Access Road
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
BV	Emission Services Group of Bureau Veritas
CCME	Canadian Council of Ministers of the Environment
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
COQ	Certificate of Qualification
CP	Containment Pond (or Control Pond or Collection Pond)
DDH	Diamond Drill Hole
DFO	Department of Fisheries and Oceans Canada
EC	Electrical Conductance
ECCC	Environment and Climate Changes Canada
EEM	Environmental Effect Monitoring
E&I	Energy & Infrastructure
EoMZ	Edge of Mixing Zone
ERT	Emergency Response Team
EWTP	Effluent Water Treatment Plant
FDP	Final Discharge Point
FEIS	Final Environmental Impact Statement
GN	Government of Nunavut
GTC	Ground Temperature Cable
HHS	Hunter Harvest Study
HVAC	Heating-Ventilation and Air-Conditioning
ICRP	Interim Closure and Reclamation Plan
IIBA	Meliadine Inuit Impact and Benefit Agreement
IOL	Inuit Owned Land
IQ	Inuit Qaujimajatuqangit
KHTO	Kangiqliniq Hunter Trapping Organization
KivIA	Kivalliq Inuit Association
Km	Kilometres
KvSEMC	Kivalliq Socio-Economic Monitoring Committee
Leq	Equivalent Continuous Noise Level
LMS	Learning Management System
LOM	Life of Mine
LSA	Local Study Area
MAC	Mean Annual Concentrations
MAMMC	Maximum Authorized Monthly Mean Concentration
MDL	Method Detection Limit
MDMER	Metal and Diamond Mining Effluent Regulations
MELCC	Ministère de l'Environnement et de la Lutte contre les Changements Climatique
MGC	Maximum Grab Concentration
ML	Metal Leaching
MMSO	Marine Mammal and Observation

MOC	Management of Change
MSB	Multi-Service Building
NF	Near-Field
NIRB	Nunavut Impact Review Board
NP	Neutralization Potential
NPAG	Non-Potentially Acid Generating
NPC	Nunavut Planning Commission
NPR	Neutralization Potential Ratio
NRCAN	Natural Resources Canada
NWB	Nunavut Water Board
OMS	Operation, Maintenance and Surveillance
OP	Ore Pad
PAG	Potentially Acid Generating
PPV	Peak Particle Velocity
PVS	Peak Vector Sum
QA/QC	Quality Assurance Quality Control
QE	Qikiqtaaluq Environmental Services
QSL	Terminaux Portuaires du Québec
RPD	Relative Percent Difference
RO	Reverse Osmosis
SEMC	Socio-Economic Monitoring Committee
SEMP	Socio-Economic Monitoring Program
SEMR	Socio-Economic Monitoring Report
SEMWG	Socio-Economic Monitoring Working Group
SETP	Saline Effluent Treatment Plant
SOP	Standard Operating Procedure
SMP	Shipping Management Plan
SP	Saline Pond
SSWQO	Site-Specific Water Quality Objectives
STP	Sewage Treatment Plant
TASK	Trades Awareness, Skills and Knowledge
TDS	Total Dissolved Solids
TEMMP	Terrestrial Environment Management and Monitoring Plan
TIRI	Tiriganiaq Open Pits
TMS	Training Management System
TOC	Total Organic Carbon
TSF	Tailings Storage Facility
TSM	Towards Sustainable Mining
TSS	Total Suspended Solids
VEC	Valued Ecosystem Component
VMR	Virtual Meeting Room
VSEC	Valued Socio-Economic Component
WBWQM	Water Balance and Water Quality Model
WQM	Water Quality Model
WQ-MOP	Water Quality Management and Optimization Plan
WRSF	Waste Rock Storage Facility

WTC Water Treatment Complex
WTP Water Treatment Plan

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Comment
1	2022/04/13	All	All	This has been reviewed by Environmental Staff and will be incorporated into training for all mine staff on behalf of the Mine Manager and Senior Management

Prepared By: Meliadine Environment Department

Approved By:

Matt Gillman
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SECTION 1. INTRODUCTION

As required by water license 2AM-MEL1631 Part B Item 2: ***The Licensee shall file an annual report with the Board no later than March 31st in the year following the calendar year being reported. The annual report shall be developed in accordance with Schedule B.***

And

As required by water license 2BB-MEL1424 Part B Item 6: ***The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31st of the year following the calendar year being reported,***

The Meliadine Gold Mine operated by Agnico Eagle Mines Limited - Meliadine Division (Agnico Eagle) is located approximately 25 kilometres (km) north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson's Bay, the Project site is located on a peninsula between the east, south, and west basins of Meliadine Lake (63°1'23.8''N, 92°13'6.42''W), on Inuit Owned Land (IOL). The Project components include the 30 km All Weather Access Road (AWAR) between Rankin Inlet and Meliadine, the Itivia fuel farm and laydown area, and the mine site.

Commercial production began at Meliadine on May 14th 2019.

The various components and activities associated with the Project require a number of different authorizations, leases and permits from regulatory agencies including the Nunavut Water Board (NWB), the Nunavut Impact Review Board (NIRB), the government of Nunavut (GN), Kivalliq Inuit Association (KivIA), Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC); Environment and Climate Change Canada (ECCC), and Department of Fisheries and Oceans Canada (DFO).

This report is written to address all of the 2021 annual reporting requirements of the project under these authorizations:

- NWB Type A Amended Water License 2AM-MEL1631;
- NWB Type B Water License 2BB-MEL1424;
- NIRB Project Certificate No. 6 (Amendment No.002);
- KivIA Permit KVCA07Q08;
- KivIA Permit KVCA11Q01;
- KivIA Production Lease KVPL11D01; and
- The Meliadine Inuit Impact and Benefit Agreement (IIBA).

Reporting requirements for the Metal and Diamond Mining Effluent Regulations (MDMER) have been submitted directly to ECCC; results are presented herein to comply with the NWB Type A Water License.

Several appendices complement this report. A summary table of the 2021 Annual Report Appendices is provided in Appendix 1.

The following Figure 1 shows the Meliadine site, while Figure 2 presents the facilities at Itivia.

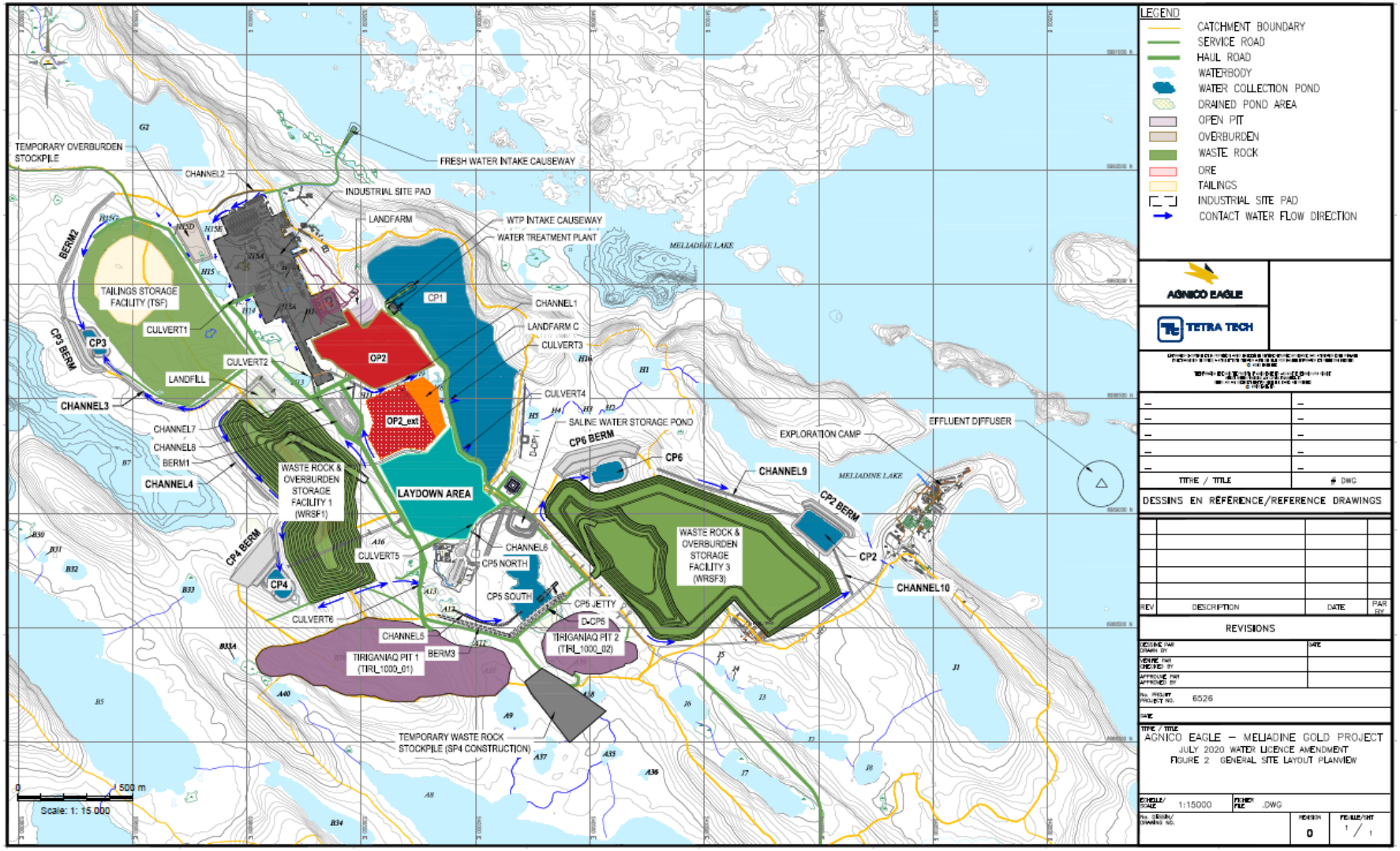

Figure 1: Meliadine Site

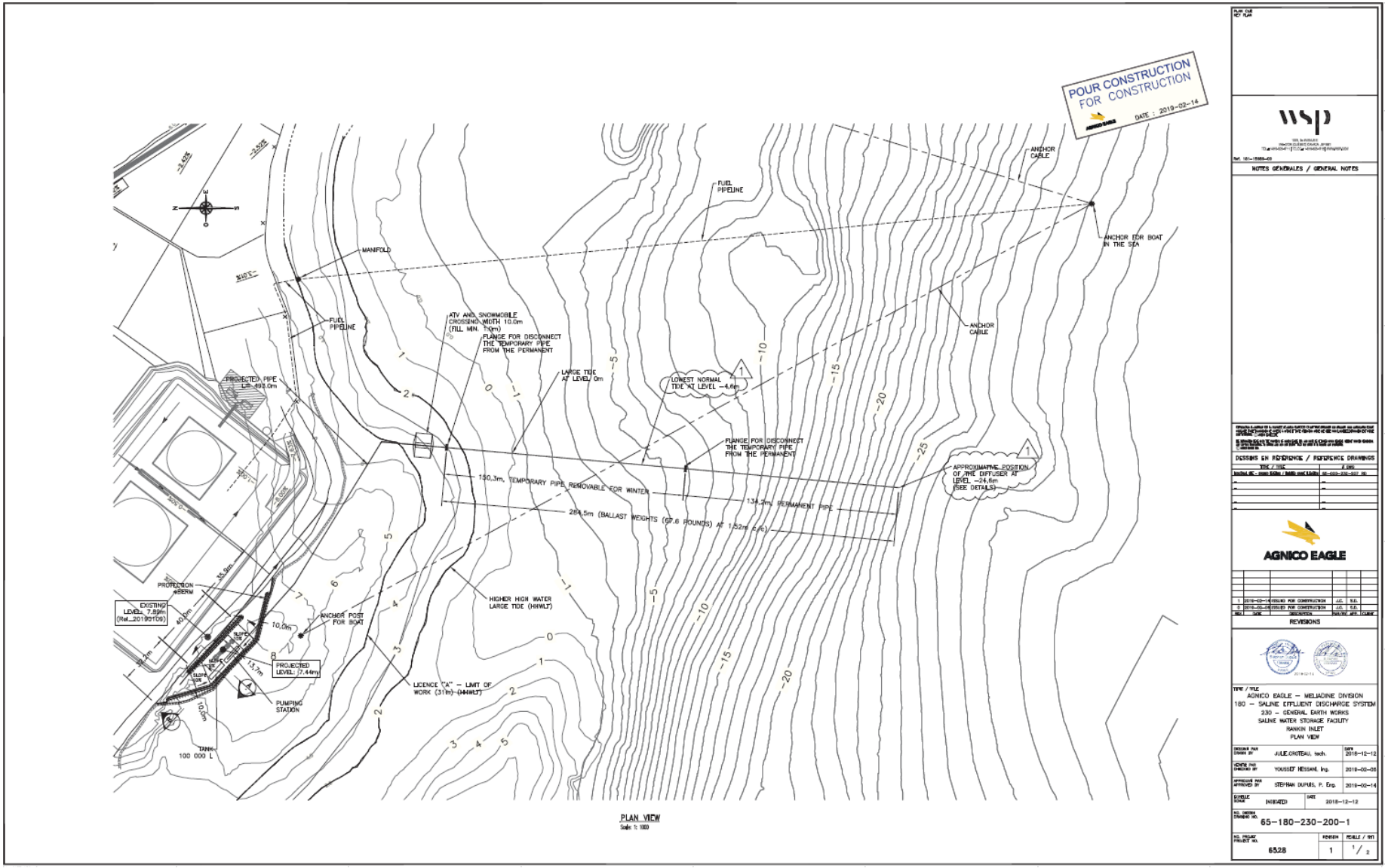

Figure 2: Itivia Facilities

SECTION 2. SUMMARY OF ACTIVITIES

2.1 2021 ACTIVITIES

2.1.1 Exploration activities

As required by water license 2BB-MEL1424 Part B Item 6i*: A summary of drilling/trenching activities and progressive reclamation of drill/trench sites;*

No trenches were dug in 2021 under this water licence and a total of 179 holes were drilled. Among these, 101 were located inside the production lease KVPL11D01 and were drilled under NWB Water License 2BB-MEL1424. The drill site locations are located in Appendix 2.

The contractor for the drilling was Sarliaq Orbit Garant and drilling was conducted using diamond drills between January to November 2021. Activities included both on ice and on land drilling. Drill sites reclamation included the removal of remaining material and drill casings at each site once drilling was completed. Casings were cut at ground level when they could not be removed.

2.1.2 Construction activities

The main 2021 construction activities are summarized in Table 1 below:

Table 1: Status of the construction activities undertaken in 2021

Activity	Status as of Dec 31, 2021
Construction of Contractor Garage	To be completed in 2022
Construction of Multi Service Building (MSB) Garage extension	To be completed in 2022
Construction of Gym Facility	To be completed in 2022
Construction of Water Treatment Complex	To be completed in 2022
Addition of second grinding thickener tank	To be completed in 2022
Addition of cement handling facility at the Paste Plant	To be completed in 2022
Backfilling of P-Area (P1 and P2 cells)	Completed in 2021
Construction of Warehouse Pad by the Paste Plant	Completed in 2021
Construction of Laydown Pad southeast of Tirganiaq Open Pit 2	Completed in 2021
Continuation of Waste Rock Storage Facility 1 (WRSF1)	Ongoing
Continuation of Tiriganiaq Open Pit 1	Ongoing
Continuation of Tiriganiaq Open Pit 2	Paused in Q2, 2021

2.1.3 Mining Activities

The Meliadine Gold Mine began commercial gold production on May 14th 2019.

In 2021, the Meliadine Gold Mine resumed mining activities at Tiriganiaq open pit #1, Tiriganiaq open pit #2 and continued commercial gold production from the underground operation.

In 2021, a total of 2,218,888 tonnes of overburden waste and 3,211,951 of waste rock were excavated from the Tiriganiaq open pit #1. A total of 404,569 tonnes of ore was mined from the pit.

In 2021, a total of 0 tonnes of overburden waste and 1,216,825 of waste rock were excavated from the Tiriganiaq open pit #2. A total of 110,361 tonnes of ore was mined from the pit.

From the underground operation, a total of 265,204 tonnes of underground waste was trucked to surface, and a total of 1,445,614 tonnes of ore was mined and trucked to surface.

2.2 2022 MINE WORK PLAN

The 2022 Mine Plan for the Meliadine Gold Mine, prepared for the KivIA as required by Production Lease KVPL11D01 is in Appendix 3 and outlines the activities planned for the project throughout the 2022 year.

In 2022, Agnico Eagle's mining plan is to continue to operate Tiriganiaq Underground Mine and Tiriganiaq Open Pit 1 at the Meliadine mine site.

A total of 2,184,546 tonnes of rock will be extracted from underground in 2022. The mine plan consists of hauling 358,174 tonnes of waste rock, 86,305 tonnes of marginal and 1,361,713 tonnes of ore to surface. Furthermore, 386,638 tonnes of paste backfill will be returned underground, and 378,354 tonnes of waste will remain underground as rockfill, for a total backfill quantity of 764,992 tonnes.

From the Tiriganiaq Open Pit 1, a total of 4,921,236 tonnes will be extracted over the year.

Waste rock and overburden will be trucked to the waste rock storage facilities (WRSFs) until the end of the mine operation, with distribution according to the operation schedule. In 2022, 1,752,000 tonnes of filtered tailings will come from the Mill: 386,638 tonnes of filtered tailings will be used as underground cemented backfill and 1,365,362 tonnes will be placed in the dry stack within the Tailings Storage Facility (TSF).

Environmental monitoring (wildlife, aquatic effects, groundwater, geochemistry, noise and air) will continue through 2022 in support of all operational undertakings at the Meliadine site as required by the NWB Type A Amended Water License 2AM-MEL1631, NWB Type B Water License 2BB-MEL1424, NIRB Amended Project Certificate No.006, and Metal and Diamond Mining Effluent Regulations (MDMER) regulations.

In 2022, Agnico Eagle is planning to conduct the following activities under production lease KVPL11D01:

- Completion of the contractor garage;
- Completion of the MSB Garage extension;
- Completion of the Water Treatment Complex (WTC);
- Completion of the west side gymnasium, adjacent to the MSB;
- Completion of a second grinding thickener tank;
- Ore Pad 2 (OP2) extension;
- Power Plant expansion;
- CIL/FP expansion;
- Addition of a cement handling facility at the Paste Plant;
- Construction of Containment Pond 2 and its associated Berm and Channels 9 and 10;
- Continuation of WRSF1;
- Continuation of WRSF3;
- Continuation of Tiriganiaq Open Pit 1;
- Construction of the waterlines for discharge to sea, pending regulatory approval.

A general site print is available in Appendix 4.

2.3 QUARRIES

In 2021, a total of 12,798 m^3 of material was taken from quarry B12 under permit KVCA11Q01. The total amount of material taken to date under this permit is 428,615 m^3 and the maximum allowed quantity to be taken is 515,817 m^3, as per 2021 Quarry Permit KVCA11Q01 Extension Agreement.

In 2021, no material was taken from quarries under permit KVCA07Q08. The total amount of material taken to date under this permit is 414,188 m^3. The maximum allowed quantity is 690,000 m^3.

SECTION 3. WATER MANAGEMENT ACTIVITIES

3.1 WATER MOVEMENT

3.1.1 Fresh water obtained from Meliadine Lake

As required by Water Licence 2AM-MEL1631, Schedule B, Item 2: ***Monthly and annual volume of fresh Water obtained from Meliadine Lake*.**

Monthly and annual volume of fresh Water obtained from Meliadine Lake (MEL-11) under Licence type A.

A total of 457,636 m³ of fresh Water was withdrawn from Meliadine Lake in 2021, or approximately 61.7% of the total authorized volume of fresh water (742,000 m³/year) under the current Licence. The monthly distribution of fresh Water use is presented in Table 2.

Table 2: Monthly and annual volume of of Fresh Water withdrawn from Meliadine Lake at monitoring station MEL-11 in 2021 under Licence A.

	January	February	March	April	May	June	July	August	September	October	November	December	**2021 Total**
Water withdrawn, m³	35,679	32,827	39,095	32,763	42,285	40,517	42,290	36,164	36,052	42,925	36,589	40,448	**457,636**

As required by Water Licence 2BB-MEL1424 Part B, Item 6a: ***The daily, monthly and annual quantities in cubic meters of all freshwater obtained from Meliadine Lake at Monitoring Station MEL-1 and MEL-2.***

Monthly and annual volumes of fresh Water obtained for camp or domestic uses from Meliadine Lake (MEL-1) and for drilling from Meliadine, A8 Lakes or small lakes and ponds proximal to the drilling targets (MEL-2) under Licence type B.

The monthly distribution and annual water usage volumes from MEL-1 and MEL-2 are summarized in Table 3 below; a total of 18,268 m³ or approximately 17.2% of the total authorized volume (290 m³/day; 106,000 m³/year) was withdrawn in 2021.

Table 3: Monthly and annual quantity of freshwater obtained from Meliadine Lake at monitoring stations MEL-1 and MEL-2 in 2021 under Licence B.

	January	February	March	April	May	June	July	August	September	October	November	December	**2021 Total**
Water withdrawn, m^3	296	781	1,802	1,392	725	971	1,435	2,850	2,117	2,792	1,943	1,165	**18,268**

3.1.2 Fresh water obtained from Meliadine River.

As required by Water Licence 2AM-MEL1631 Schedule B, Item 4: ***Monthly and annual volume of fresh Water obtained from Meliadine River for road dust suppression activities.***

In 2021, no water was obtained from the Meliadine River for road dust suppression activities; instead, water was withdrawn from other permitted locations, including small ponds proximal to the All-Weather Access Road (AWAR).

As required by Water Licence 2AM-MEL1631 Schedule B, Item 3: ***Monthly and annual volume of fresh Water transferred to Meliadine Lake as a result of dewatering activities.***

No dewatering activities where water was transferred to Meliadine Lake took place in 2021.

3.1.3 Mine Water pumped from underground

As required by Water Licence 2BB-MEL1424 Part B, Item 6b: ***The daily, monthly and annual quantities, in cubic meters, of Mine water pumped from the underground.***

And

As required by Water Licence 2BB-MEL1424 Part B, Item 6j: ***Report all artesian flow occurrences.***

There was no occurrences of artesian flow in 2021. The monthly and annual volumes of mine water pumped from the underground are summarized in Table 4 below.

Table 4: Monthly and Annual flow volumes of underground mine water pumped to surface in 2021.

	January	February	March	April	May	June	July	August	September	October	November	December	**2021 Total**
Water pumped, m^3	3,788	2,031	2,538	2,234	5,078	5,781	7,282	7,157	5,939	6,174	3,248	3,557	**54,805**

3.1.4 Effluent discharged from CP1 to Meliadine Lake

The monthly and annual volumes of effluent discharged from CP1 to Meliadine Lake over 2021 are summarized in Table 5 below.

Table 5: 2021 Monthly and Annual volumes of water discharged from CP1 to Meliadine Lake

	January	February	March	April	May	June	July	August	September	October	November	December	**2021 Total**
Water pumped, m^3	-	-	-	-	-	-	133,439	397,398	221,210	99,079	-	-	**851,126**

3.1.5 Saline Effluent Discharged to Marine Environment at Melvin Bay

The monthly and annual volumes of saline effluent discharged to sea over 2021 are summarized in below Table 6.

Table 6: 2021 Monthly and Annual volumes of water discharged to sea

	January	February	March	April	May	June	July	August	September	October	November	December	**2021 Total**
Water pumped, m^3	-	-	-	-	-	-	-	9,820	33,274	4,665	-	-	**47,759**

3.1.6 Adaptive Management of Discharge to Meliadine Lake

As required by Water Licence 2AM-MEL1631, Schedule B, Item 6: ***Summary of the Adaptive Management procedures implemented to minimize the discharges into Meliadine Lake during the pre-freshet, open-water and pre-freeze periods.***

Schedule B, Item 6 of the Amended Water Licence 2AM-MEL1631 will come into effect following commissioning of the Waterline (approved by the Minister of Northern Affairs on January 31st 2022).

Operation of the waterline for discharge to Melvin Bay is anticipated to significantly minimize or eliminate discharges to Meliadine Lake throughout the open water season each year. A summary of the Adaptive Management procedures implemented following commissioning of the Waterline will be available in future annual reports, once the Waterline is operational.

More information regarding applicable Adaptive Management strategies can be found in the most up to date version of the Adaptive Management Plan submitted in the Waterline Application (Agnico Eagle, 2021).

3.1.7 TDS Concentrations Reporting to CP1

As required by Water Licence 2AM-MEL1631, Schedule B, Item 8: ***Discussion on the behavior of the Total Dissolved Solids (TDS) concentrations in surface Contact Water reporting to CP1 during the reported year, and, if any TDS concentration peaks are observed, identification of potential sources that might have contributed to higher loads of TDS.***

Between the beginning of the freshet period and the start of ice formation in 2021, routine visits to the surface collection ponds and various runoff management areas were performed to obtain field measurements of electrical conductance (EC). Then, EC was converted to approximate TDS concentrations. The intent of this monitoring program was to acquire data to understand the behaviour of site-wide TDS patterns. This data was used to investigate the hypothetical sources of TDS loads in the runoff water collected on site.

The overall campaign was divided into two monitoring programs. The first consisted of field readings conducted in the surface contact runoff collection ponds, and the second involved the identification and subsequent monitoring of seepages from major site infrastructure, such as the TSF and WRSFs.

The processes which may impact TDS patterns in surface runoff on site are numerous and their interactions are complex:

- freshet often brings large volumes of runoff with low TDS concentrations into the water management system, contributing to the dilution of existing surface waters within the mine collection ponds;
- thawing of the active layer may result in the release of solutes locked in the soil from the previous year active layer freeze-back;
- significant rainfall events may flush pre-event solutes from the active layer;
- exclusion of solutes as water freezes can cause TDS concentrations to rise in the water held below-ice during winter (i.e., cryoconcentration); and so on.

Thus, given the impact of such processes and particularly the complexity with which precipitation can impact downstream TDS (solute flushing, dilution, and evaporation processes) the results of the monitoring program are provided on primarily an observational basis, rather than interpretive.

The results of the monitoring program are provided in units of TDS, mg/L, rather than EC (for the field readings), uS/cm, for ease of comparisons with the laboratory analysed TDS datasets and with the TDS concentration limits required by the Licence for discharge to Meliadine Lake.

TDS was computed using the following equation:

$$TDS = ke \cdot EC$$

where TDS is in mg/L and EC is measured in µS/cm at 25°C (specific conductance). The correlation factor, ke, used in the conversions of EC to TDS in the monitoring program was 0.6, derived as an approximate average from ratios of TDS to EC analyzed in MEL-14 samples collected from 2018 to 2021.

3.1.7.1 *Collection Pond EC Monitoring Program*

Field parameter readings of surface contact runoff collection ponds were conducted on a daily to weekly basis, with a greater frequency generally taking place early in the freshet period and early open water season. Monthly samples were sent for laboratory analysis from June until October.

When establishing a monitoring program for EC data in the collection ponds on site, variation in the water quality within the vertical water column must be taken into account. It has been theorized that one process significantly driving variation across the water column is due to a TDS-exclusion effect in which ice formation leads to migration of TDS from ice into the underlying water (Zhang et al., 2012). Freeze-thaw cycles –

particularly in water bodies which not only maintain a volume over the winter but also do not freeze to the bottom – may result in stratified layers of varying TDS concentrations, often coinciding with thermoclines (Zhang et al., 2012)[1]. Further amplifying this process is the influent of high volumes of low-TDS runoff which due to warmer temperatures and lower density (due to lower TDS) which may create an additional layer of stratification on the surface of the water body. Thus, readings collected at a single elevation within the water column could misrepresent the average TDS of the total volume contained within the collection pond.

Figures 3 to 7 below provide the results of the monitoring conducted at each surface runoff collection pond on site: CP1, CP3, CP4, CP5, and CP6. Measurements of EC were normally collected at an approximate depth of one meter below each pond surface, generally coinciding with the location of pump intakes in the ponds (to account for stratification of water quality) and subsequently the approximate quality of the water being discharged directly to (in the case of CP5 and CP6) and towards (in the case of CP3 and CP4 via Channel 1) CP1. Given the shallower nature of CP5, this method was repeated where possible for consistency but not necessarily due to the location of the intakes to pumping infrastructure. Regardless, due to the depth of CP5 at the area of measurement remaining on average less than one meter, a measurement collected near the bottom of the pond was noted to be mostly representative of the water column during field visits. In CP1, field readings for EC were also conducted at approximately one meter depth and supplemented with EC data collected through the continuous monitoring of pre-treatment water quality at the WTC-EWTP (compliance monitoring station MEL-12). The figures also provide water level elevation data of each pond, as a correlation between large volume changes can provide insight into the behaviour of TDS fluctuations within the pond due to some of the aforementioned processes (e.g. concentration changes via runoff-dilution, evaporation, or stratification).

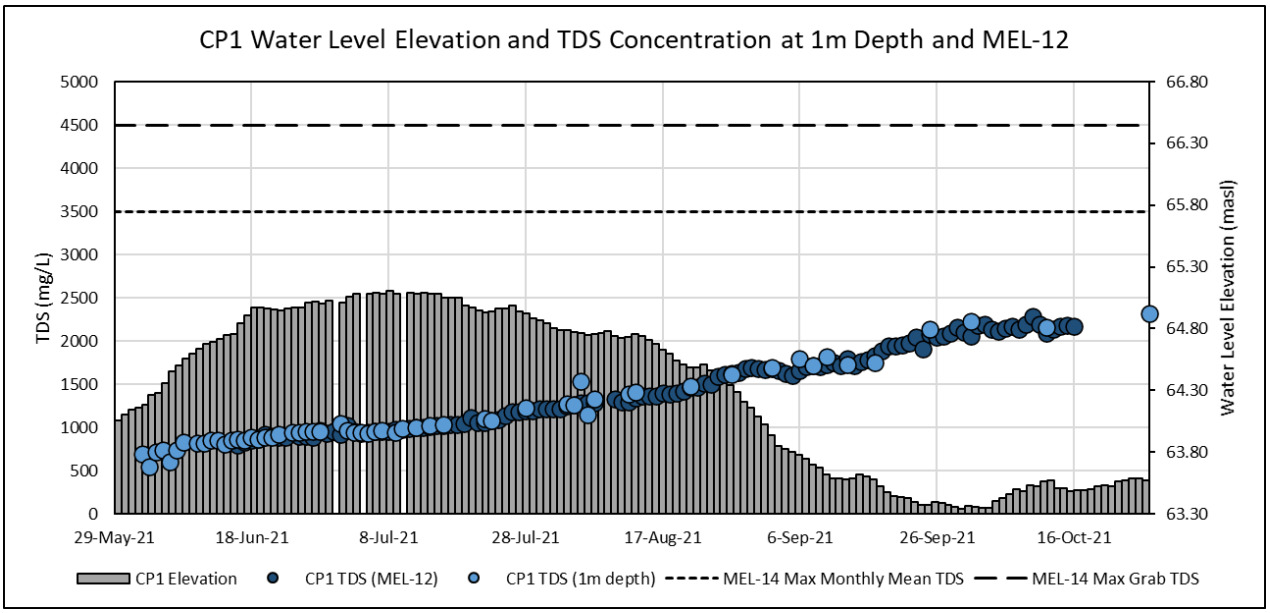

Figure 3: CP1 field readings for EC converted to TDS using a factor of 0.6 mg/L-TDS to 1 uS/cm-SpC, and CP1 water level elevation data. EC data is supplemented by readings collected at the EWTP-WTC for pre-treatment water quality (compliance station MEL-12).

[1] Yan Zhang, ChangYou LI, XiaoHong Shi, Chao Li. The migration of total dissolved solids during natural freezing process in Ulansuhai Lake. *Journal of Arid Land*, 2012, 4(1): 85-94.

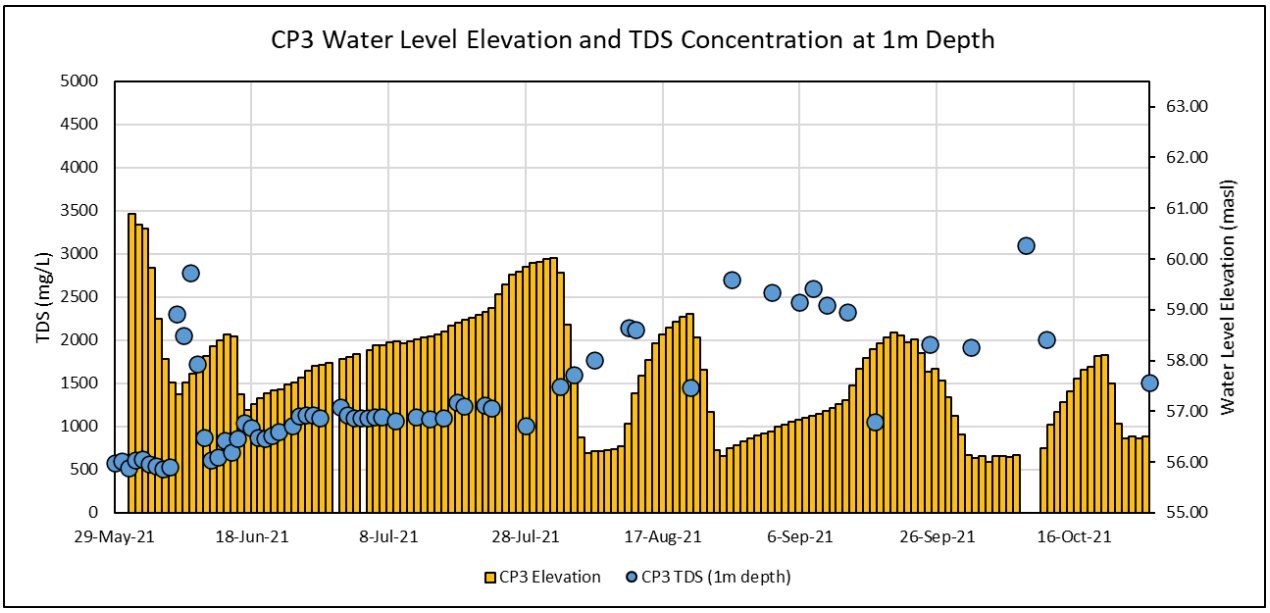

Figure 4: CP3 field readings for EC converted to TDS using a factor of 0.6 mg/L-TDS to 1 uS/cm-SpC, and CP3 water level elevation data.

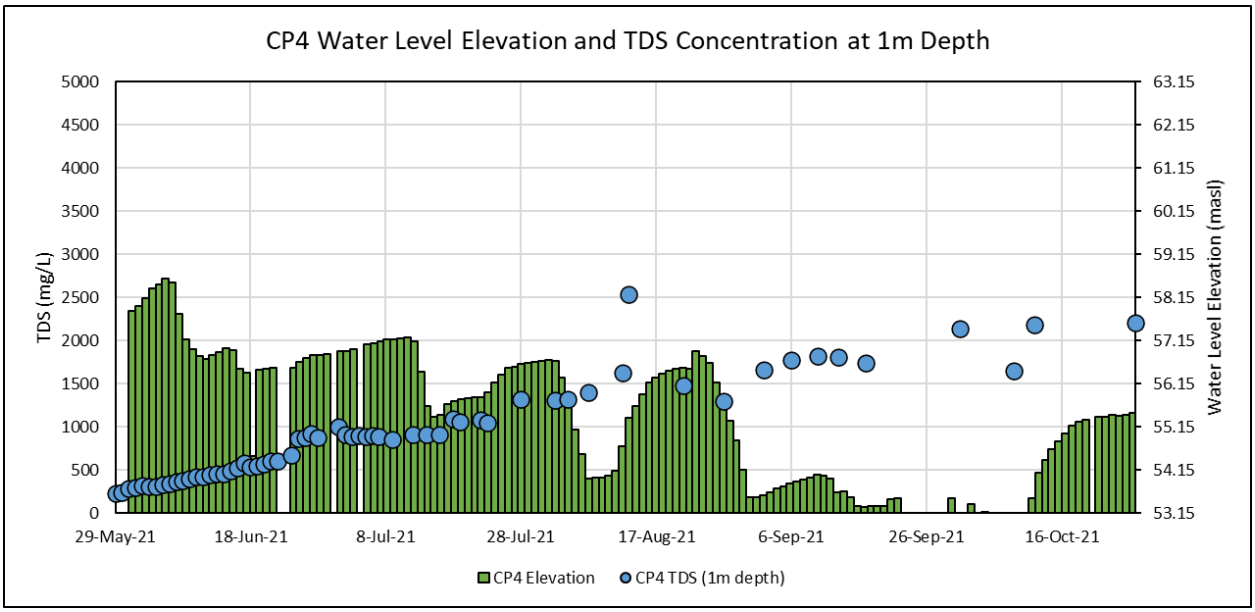

Figure 5: CP4 field readings for EC converted to TDS using a factor of 0.6 mg/L-TDS to 1 uS/cm-SpC, and CP4 water level elevation data.

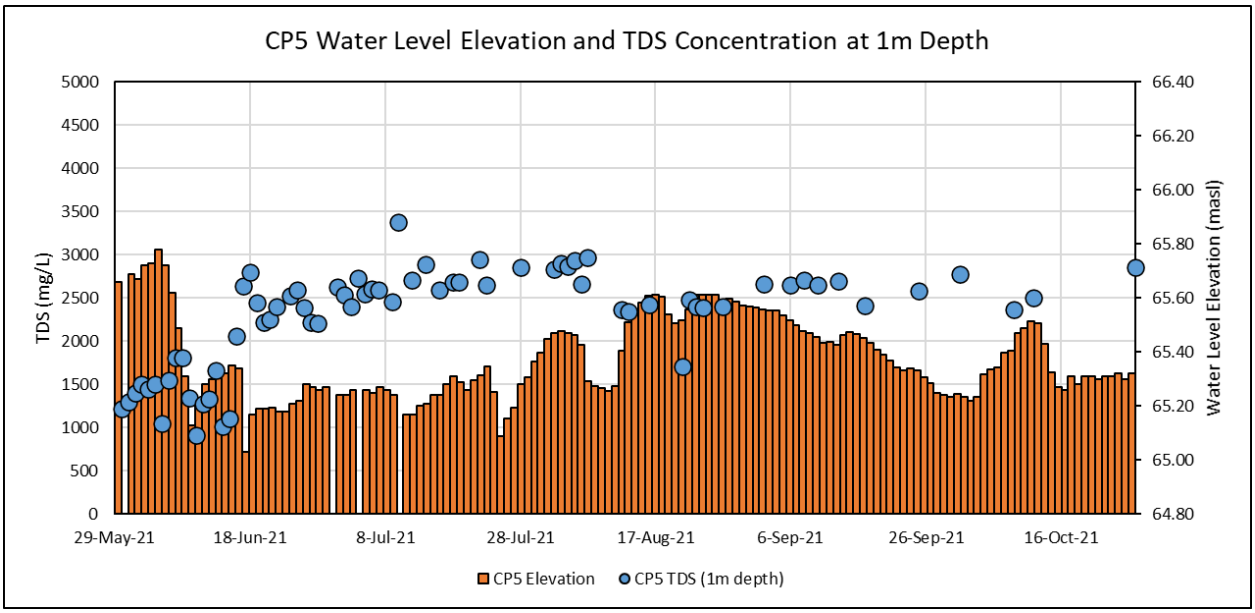

Figure 6: CP5 field readings for EC converted to TDS using a factor of 0.6 mg/L-TDS to 1 uS/cm-SpC, and CP5 water level elevation data.

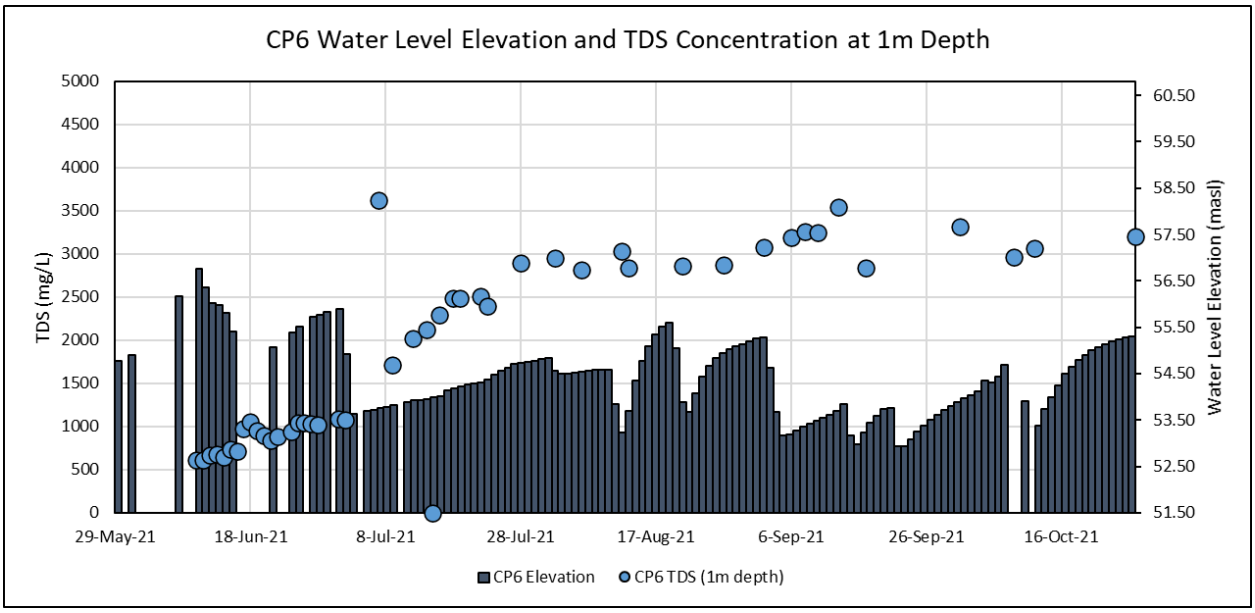

Figure 7: CP6 field readings for EC converted to TDS using a factor of 0.6 mg/L-TDS to 1 uS/cm-SpC, and CP6 water level elevation data.

A general trend observed at each facility is an increase in TDS over the duration of the open water season. The peaks in TDS observed in CP6 in early July are potentially due to sampling error where the probe used for EC measurements may have been submerged in a sediment rich zone at the bottom of the pond during low water level, causing interference in EC readings. Further investigation is required to draw conclusions on the observable patterns mentioned.

3.1.7.2 *Seepage and Push-Piezometer EC Monitoring Program*

Additional monitoring was conducted in visible seepages and using shallow push-piezometers downstream of facilities on site identified to be potentially significant sources of TDS loading. The intent of this sampling effort was to compile additional data with which facilities might readily be identified as potentially significant TDS loading sources, relative to other facilities. The seepage monitoring and push piezometer locations were chosen to capture the TDS loading potential from facilities such as the Ore Pad, Industrial Pad, Portal Pads, TSF and WRSFs. Table 7 provides the list of monitoring stations, the collection pond to which each runoff area reports to, and the general upstream facility from which the seepage is produced.

Table 7: Seepage monitoring stations with corresponding collection pond, and upstream facilities.

Seepage Monitoring Station	Collection Pond	General Upstream Facility
H15-Piezo	CP1	Industrial Pad
OP-Piezo1	CP1	Ore Pad
TSF-Piezo1	CP3	TSF
TSF-Piezo2	CP3	TSF
TSF-Seep1	CP3	TSF
TSF-Seep-31	CP1	TSF
TSF-Seep-32	CP3	TSF
TSF-Seep-33	CP3	TSF
TSF-Seep-34	CP3	TSF
TSF-Seep-35	CP1	TSF
TSF-Trench1	CP3	TSF
WRSF1-Piezo1	CP4	WRSF1
WRSF1-Seep1	CP4	WRSF1
WRSF1-Seep2	CP4	WRSF1
WRSF1-Seep3	CP4	WRSF1
DP1-Seep-37	CP1	Portal 1 Pad
DP3-Seep2	CP5	Portal 1 Pad
DP3-Seep-36	CP5	Portal 1 Pad
WRSF3-Piezo1	CP6	WRSF3
WRSF3-Seep1	CP6	WRSF3

The seepage monitoring locations were chosen based on several selection criteria. First, the six general upstream facilities were selected due to their size and material volume, and due to these facilities having the highest likelihood of homogenous rock and soil conditions. This would allow for monitoring to be generally representative of the overall seepage from the facility being monitored. Areas in the downstream gradient of flow from these facilities were then visually observed for signs of seepage or moist conditions which might be representative of subsurface seepage. Consideration into the downstream collection pond was also made so that later comparison with pond TDS behaviours could potentially be conducted. Final consideration was then made towards seepages that would have reproducibility in sampling on a recurring (i.e. weekly to monthly) basis or potentially year-over-year.

Sampling at the seepage and piezometer location included water collection for laboratory analysis of TDS and other parameters where possible, but in many cases, only sufficient volume of water for analysis of field parameters including EC could be collected. Where only field parameters were collected, EC data was then converted to TDS using the aforementioned correlation factor (0.6) for ease of interpretation. The compiled results for the monitoring stations are presented in Figure 8.

There is a degree of uncertainty present in the results of the monitoring program and the extent in which conclusive evidence can be supported by in situ EC readings. Primarily, it should be taken into consideration that the presented TDS concentrations do not represent overall masses of dissolved solids reporting to the various collection ponds. The monitored seepages were not measured for flow and thus the total mass influx of dissolved solids reporting to each facility can not be estimated. Additionally, stagnant seepages and low-flows were often observed in many of the monitoring stations. These conditions are assumed to be favourable to the influence of evaporation which has an increasing effect on solute concentrations in these zones as water is removed by evaporation. Another limitation of the study was the selectivity in which only seepage sources of high TDS potential were chosen. Although this enables insight into the upstream facilities and some of the seepage conditions reporting to each pond, it does not provide representation of low-TDS sources which have potential to represent other inflow sources of potentially greater magnitude than the monitored seepages. Therefore, the results of the monitoring program should be interpreted with respect to potential sources of TDS loading, and fit as an additional component to a more holistic understanding on the source of TDS in surface waters on site, rather than as a representation of bulk inflow TDS reporting to the various collection ponds. In other words, the results of the monitoring program can guide future studies, however, the data cannot directly be used as an input to the model.

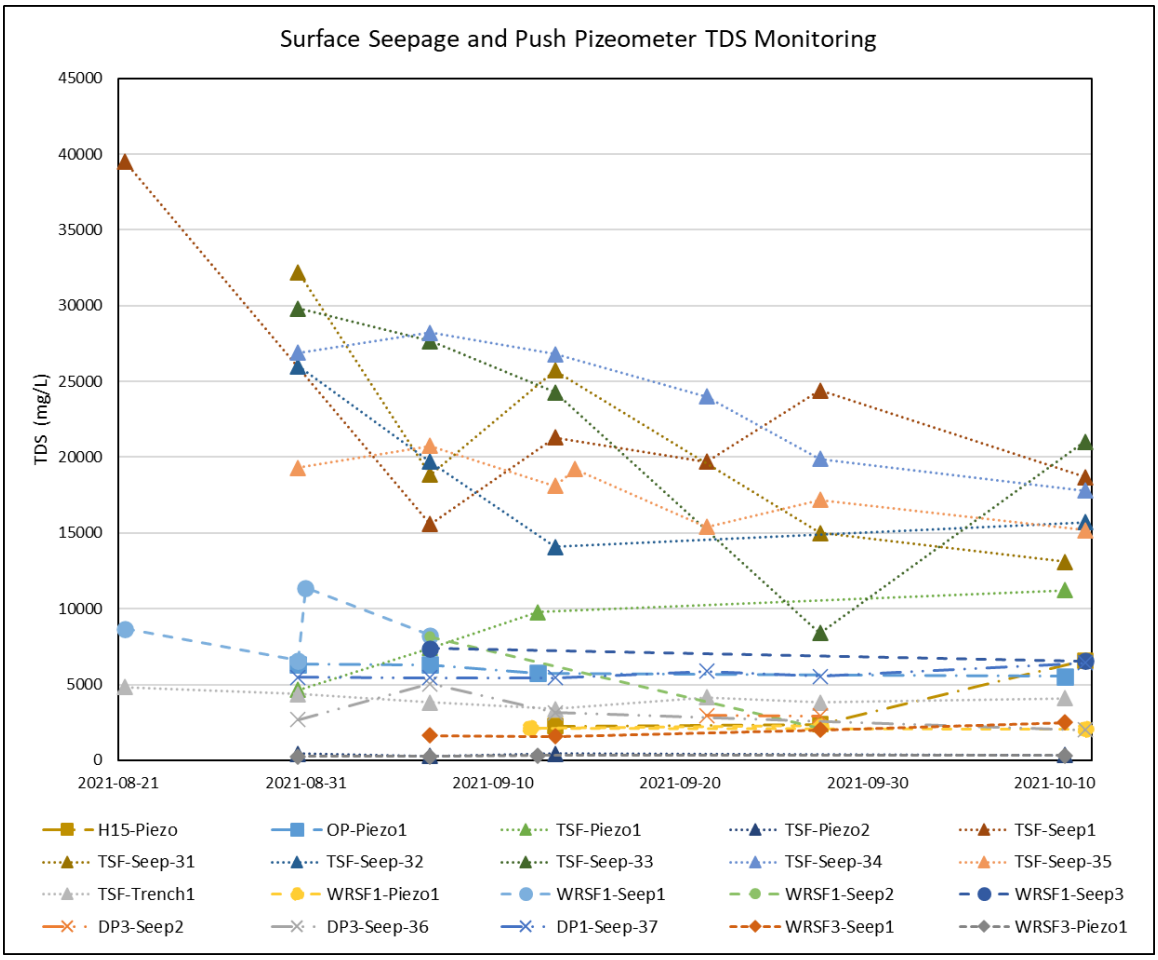

Figure 8: TDS concentrations in seepage monitoring stations across the mine site. Measurements do not represent actual TDS loads, but rather in situ seepage conditions with no corresponding component of flow rate. Uncertainties and limitations in the interpretation of the results are discussed in the previous paragraph.

The most notable trends in Figure 8 are those of the TSF monitoring stations, which often show significantly higher concentrations of TDS compared to the other monitoring stations. Figure 9 below presents the data with the same data set, but with the TSF monitoring stations removed to allow reduction of the y-axis for added clarity. With respect to the remaining monitoring locations, no clear distinction in TDS concentrations is observed with the exception of seepages monitored at WRSF3, which generally display relatively low concentrations of TDS (see Figure 9).

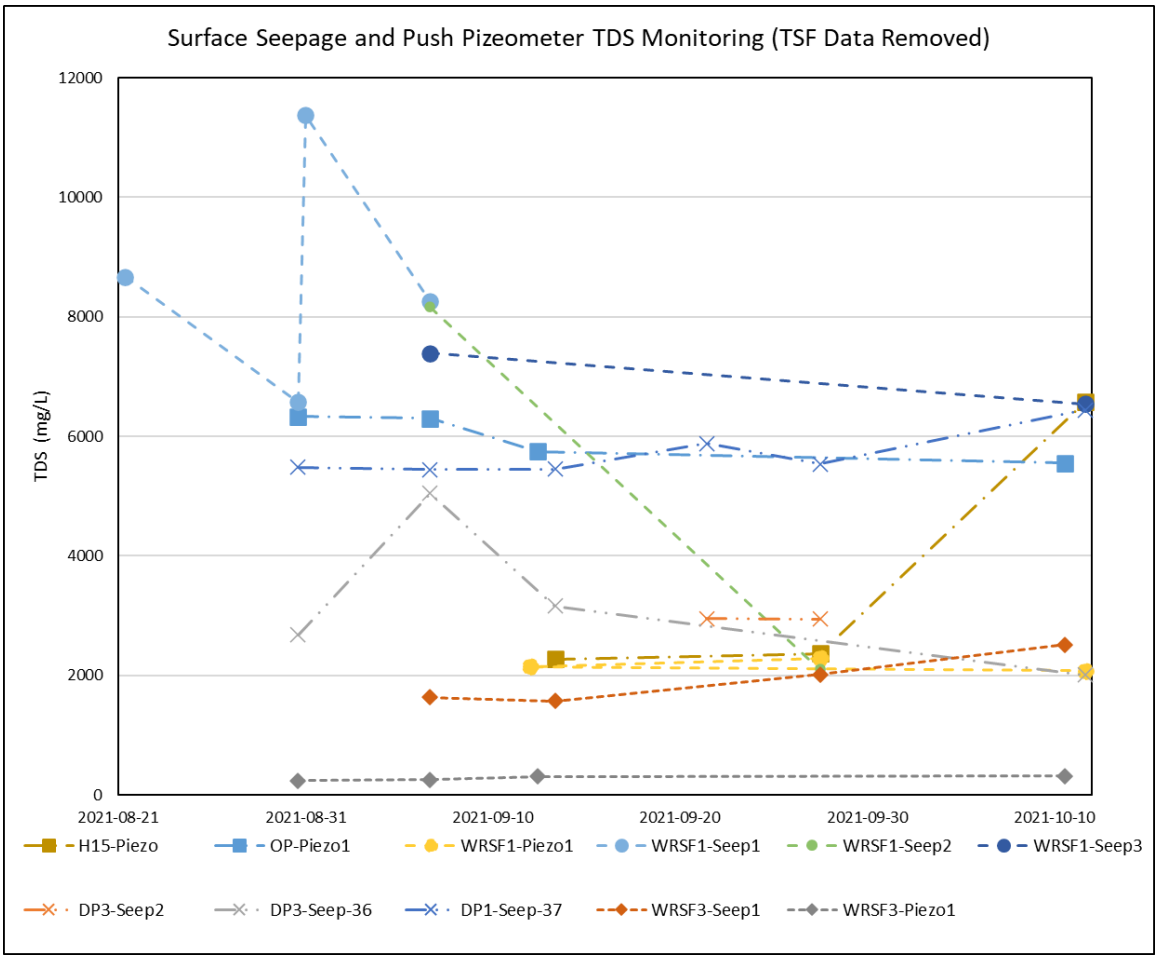

Figure 9: TDS concentrations in seepage monitoring stations across the mine site, with TSF data omitted for clarity in vertical axis scale. Measurements do not represent actual TDS loads, but rather in situ seepage conditions with no corresponding component of flow rate. Uncertainties and limitations in the interpretation of the results are discussed before.

3.2 WATER BALANCE WATER QUALITY MODEL REPORTING SUMMARY

As required by Water Licence 2AM-MEL1631 Schedule B, Item 5: ***Updated Water Balance and Water Quality Forecast, as required under Part E, Item 13.***

And

As required by Water Licence 2AM-MEL1631 Schedule B, Item 7: ***Discussions on the available storage capacity for both saline and fresh Water, including the volumes of Water transported to Melvin Bay and the volumes of Water discharged to Meliadine Lake, as well as the projected volumes of water requiring storage in the upcoming year.***

Water Balance and Water Quality models were updated for submission with the 2021 Annual Report to satisfy the Schedule B, Item 5 requirement of the Type A Amended Water Licence (2AM-MEL1631). The site-wide water balance and water quality model (WBWQM) is built in the GoldSim v14 software platform and is set-up to run on a daily time-step. The primary modelling objective is the prediction of water and

solute load transfers within the mine site facilities, and to the receiving environment for the period of 2019 to 2027. The GoldSim WBWQM is configured to predict the transfer of water and solute mass (loadings) from mined and non-contact areas into the relevant water management facilities. Water volumes and loads are tracked throughout the model, with all ponds, sumps and open pits represented by 'pool' elements in GoldSim. The pool element allows the model to track multiple inflows and outflows simultaneously, avoiding computational errors. All mixing is assumed to occur instantly, and all mass is conserved throughout the model (i.e., no attenuation is applied to any of the parameters that are tracked).

A daily water balance was conducted for the period of 2019 to 2021 with measured precipitation and 2022 to 2027 under a mean climate precipitation. Facilities considered in the water balance include CP1, CP2, CP3, CP4, CP5, CP6, P3, Tiriganiaq Open Pit 1 (TIRI01) and Tiriganiaq Open Pit 2 (TIRI02), TSF, WRSFs, Ore Pad 2 (OP2), Landfarm, Landfill, Effluent Water Treatment Plant (EWTP) and Saline Effluent Treatment Plant (SETP). Section 3.2.1 describes the water balance design and assumptions used in the modeling process. Both surface contact water management and saline contact water management at Meliadine are presented with a single GoldSim model. The saline water sub-model is comprised of Saline Ponds SP1, SP4, and TIRI02 saline water storage facilities. The saline sub-model also applies mean climate precipitation. Similarly, this sub-model was run for the period of 2019 to 2027 and is described in section 3.2.3. Further information regarding saline storage ponds and the application of TIRI02 as a saline storage pond can be found in the Groundwater Management Plan.

A water quality modelling component was assigned to each of the aforementioned water balance models and is discussed in section 0 and section 3.2.4 for the surface runoff and saline water balance sub-models, respectively.

3.2.1 Surface Contact Water Balance Results

The surface contact water balance assumes the following:

- Measured (2019-2021) and average (2022-2027) precipitation year climate conditions;
- Snow (less sublimation) accumulates throughout the months of November to May, and thaws in June during the annual spring freshet period;
- The accumulation and melting of snow and ice on pond surfaces is governed by temperature based algorithms;
- The surface contact water containment ponds (CP1 to CP6) are not used for long-term storage of water and are emptied before freeze up each year;
- Non-facility areas are divided into natural, disturbed, and pond surface "land-types", and flows for these polygons are predicted using an integrated watershed model;
- Facility areas (i.e. WRSF, Ore stockpiles, TSF, Overburden, and Open Pits) are assigned individual coefficients of runoff;
- EWTP pumping demand was set to a maximum of 22,000 m^3/day;
- EWTP treatment plant availability (to allow for maintenance and downtime) was set to 75%;
- Discharge to Meliadine Lake was set to the period of June 15 to October 15; and
- Other assumptions outlined in the Water Management Plan.

Surface contact water is collected and routed through a series of collection ponds and accumulated in CP1.

In order to generate water volume estimates from precipitation inputs, the delineation of both the natural and mine-altered watershed areas was necessary for modelling the locations of interest. The catchment areas by year are presented in Appendix 5, Table 1. Sub-catchment nomenclature was based on the water management feature that each mine component reports to via gravity drainage. For example, 'CP1-Natural' refers to the non-contact area drainage that reports to the CP1. A temperature based ice algorithm was also implemented to model cryo-concentration in CP1. The resulting impacts on CP1 elevation/volume are presented in Figure 10 and Figure 11. The water level Figures for all surface contact water collection ponds are presented in Appendix 5, Figures 1 to 6.

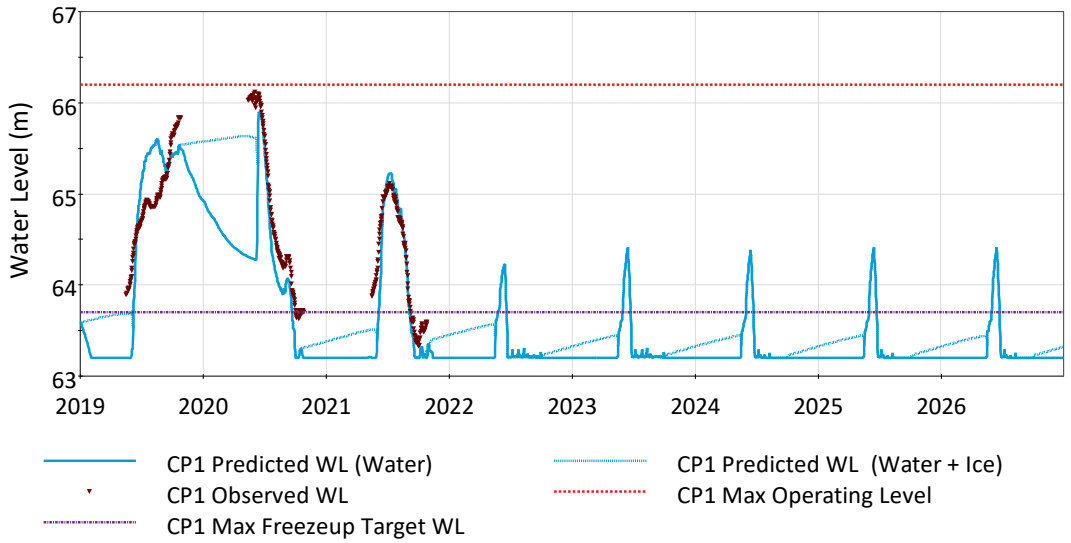

Figure 10: Forecasted and observed CP1 water elevation.

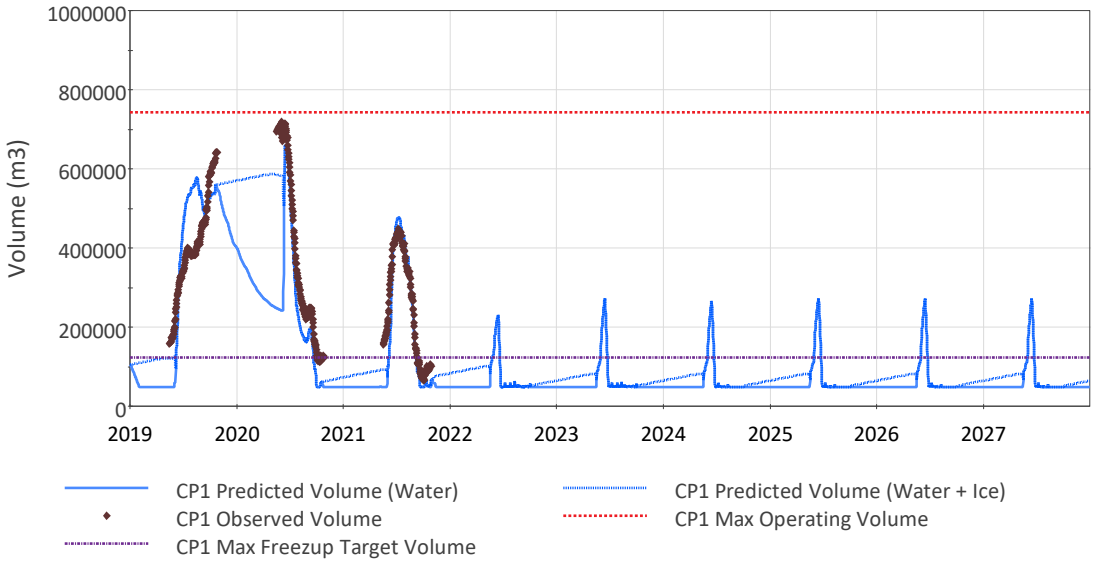

Figure 11: Forecasted and observed CP1 volume.

The model results indicate a cyclical water elevation and volume response in CP1 each year, characterized by a slight increase via winter inflows and a rapid increase during freshet. Water elevations are then drawn down through each discharge season before freeze-up in Q4 of each year. The model was able to predict the water level reasonably. For example, the maximum annual water level observed and predicted for the year 2021 in CP1 was 65.11 m and 65.23 m, respectively. The maximum stored volume of water in CP1 in 2021 was approximately 450,000 m^3. In 2021, CP1 utilized 60% of its capacity compared to the maximum operating volume of 742,000 m^3 (66.2 m). The volume of surface contact water expected to be stored on site in 2022 is 230,000 m^3. This contact water storage account only for 30% of the 742,000 m^3 total contact surface water storage available on site. A total volume of treated effluent water discharged to Meliadine Lake between the months of July and October was approximately 850,000 m^3 (see Section 3.1.4 for monthly discharges to Meliadine Lake). Table 8 presents these metrics for the other facilities on site captured in the model. Tabular data for daily water balance (inflows and outflows) for each collection pond are presented in Appendix 5, Table 2.

Table 8. Maximum annual water volumes requiring management under mean precipitation in 2021 mine operation.

Facility	Maximum Annual Water Volume Stored (Mm^3)
CP1	0.450
CP2	0.000
CP3	0.042
CP4	0.022
CP5	0.034
CP6	0.027
Water Discharged from EWTP to Meliadine Lake (Total discharged in 2021)	0.850*
SP1	0.033
SP4	0.270
Tiri_1000_01	0.054
Tiri_1000_02	0.418

*monthly discharge to Meliadine Lake is presented in Section 3.1.4.

3.2.2 Surface Contact Water Quality Model Results

The water quality model (WQM) is built upon the architecture of the water balance model described in 3.2.1, with water quality signatures assigned to non-contact (undisturbed) areas and mine infrastructure. Water quality inputs to the water quality model, or source terms, are based on either a set of assumptions that reflect empirical observations from the operating mine site, data collected at analogue mine sites, or the results of various geochemical and metallurgical tests that have been undertaken to provide a basis for assigning likely future water quality associated with specific mine components. Conceptually, modelled flows and associated source terms are combined in the GoldSim platform to simulate predicted water quality estimates at key locations across the mine site.[2] The WQM is set-up to run on a daily time-step for the

[2] Lorax (2022). Meliadine Extension: Water Balance and Water Quality Model Technical Report. Prepared for Agnico Eagle Mines Ltd, by Lorax Environmental Services, February 2022.

period of 2019 to 2027, consistent with the water balance sub-model. Concentrations of water quality parameters required by Type A Water Licence 2AM-MEL1631 Part F, Item 3 for all mine water management ponds and sumps are modelled. WQM outputs are aggregated on an annual time-step, and are screened against the required and operator requested guidelines (Appendix 5, Table 3).

All the water quality parameters required by the Type A Water Licence 2AM-MEL1631 Part F, Item 3 are within the required criteria (maximum authorized monthly average or sample grab concentration limits). Model predictions overestimated the concentrations of total ammonia and phosphorous compared to observed concentrations in CP1. This result could be related to nutrient attenuation by algal growth which has periodically been observed in CP1. This attenuation process is not captured in the GoldSim model, hence, would result in an overestimate of modelled ammonia and phosphorous concentrations. In order to support this hypothesis, further investigation is required. The observed and forecasted TDS concentrations are presented in Figure 12. The comparison of the observed and forecasted concentration for all modelled CP1 water quality parameters are also presented in Appendix 5. The annual observed and forecasted water quality concentration results for all modelled water quality parameters in CP1 are presented in Appendix 5, Table 3.

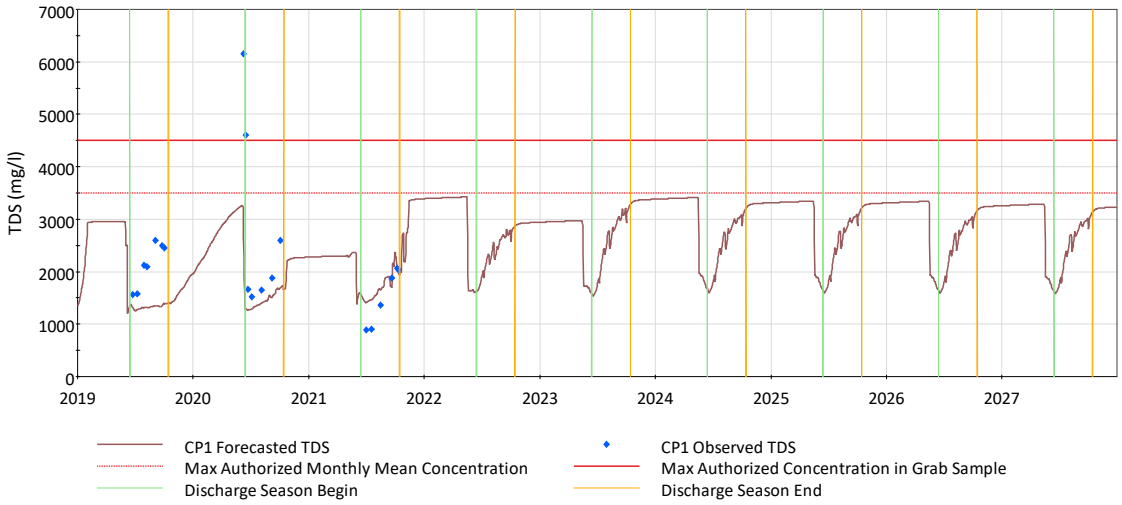

Figure 12: CP1 TDS concentrations for life of mine and closure.

As per the Water License Part E Section 13, results from the Water Balance and Water Quality Model (WBWQM) were compared to Maximum Authorized Monthly Mean Concentrations (MAMMCs) to identify forecasted Mean Annual Concentrations (MACs) that fell within 10% of their respective MAMMCs. Additionally, observed MACs from the current reporting year were compared to those reported in the previous year to identify parameters whose concentrations have increased by more than 20% year-over-year. The results are discussed below and can be found in Appendix 5, Table 3.

The initial portion of the assessment was conducted using MEL-14 monitoring station data and WBWQM results. MAC results produced by the WBWQM represent dissolved concentrations as TSS is not a modeled parameter. To correct for this, a conservative TSS assumption is applied. It is assumed that treated MEL-14 effluent contains the MAMMC of 15 mg/L TSS. As a majority of material disturbed by mining operations

is comprised of waste rock, the particulate composition of TSS was assumed to have the average elemental concentration of waste rock produced by the project. Table 9 presents the particulate fraction concentration per 15 mg/L TSS that was applied to the MAC results from the WBWQM. These particulate fraction values are determined based on the composition of waste rock (ppm or mg of element per kg of waste rock).

Table 9: Suspended Solids Composition and Contribution to total concentrations at MEL-14.

Element	Particulate Composition (ppm or mg of element per kg of rock)	Particulate fraction concentration (mg/L) per 15 mg/L TSS
Al	62700	0.941
As	65.7	0.000985
Cu	70.4	0.00106
Ni	71.6	0.00107
Pb	7.19	0.000108
Zn	84.7	0.00127

Assessment of the TSS-adjusted forecasted MACs identified no parameters falling within 10% of their respective MAMMCs over LOM. Additionally, no monitoring results were identified as having a year-over-year change of 20% or more when comparing MEL-14 monitoring data from 2020 to 2021. The assessment was made based on the discharge to Meliadine lake period. As a result the effect of cryo-concentration is not considered.

3.2.3 Saline Water Balance Model Results

The saline water balance model assumes the following:

- SETP-WTC treatment plant availability (to allow for maintenance and downtime) of 75%;
- Discharge to sea was set to occur between July 15 to October 15;
- A maximum discharge to sea rate of 20,000 m^3/day during discharge through water line, which accounts 12,000 m^3/day for saline water and 8,000 m^3/day for surface contact water;
- Other assumptions outlined in the Water and Groundwater Management Plans.

The saline water management system collects dewatering flows from all underground operations, saline WRSFs and ore pads. Considering this routing, the saline water balance model was built around the inflows and outflows of TIRI02, SP4 and SP1 as outlined in the Groundwater Management Plan (GWMP 2021). The removal of SP4 from the saline water storage in 2025 in order to allow mining of Tiriganiaq Pit 1 (TIRI01) was also reflected in the developed model.

In addition to the assumptions listed above, the saline water balance model assumes mean climate precipitation data, which is applied to each of the saline pond catchments. Similar to the surface contact water balance, each catchment is divided by area into land subtypes including natural ground with vegetation, disturbed ground, and pond surface, with each subtype having an assigned runoff coefficient during periods of precipitation. The Tiriganiaq underground hydrogeological model (Golder 2020) was used as an input in the saline water balance model to characterize the flow rate from underground mine facilities to the saline storage ponds. Groundwater was reporting to SP4 until September 12th 2021, and switched to

TIRI02 on September 13th, 2021. The transfer of saline water from SP4 to TIRI02 was performed between August and November 2021 (Figure 13). The discharge of saline water to Melvin Bay is assumed to continue by trucks for the operation years 2022 and 2023 and to change to waterline discharge in 2024. Figure 13 and Figure 14 show the water level and volume in TIRI01 considering all the discharge to sea schedules, respectively.

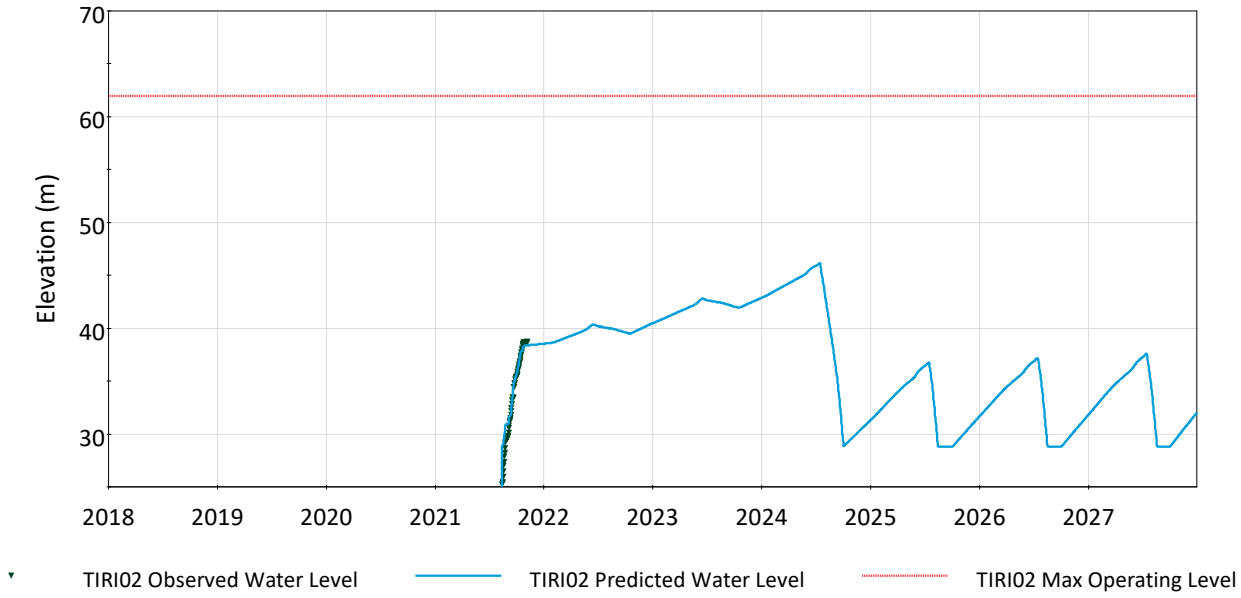

Figure 13: Forecasted saline water level in TIRI02 (Actual versus Predicted).

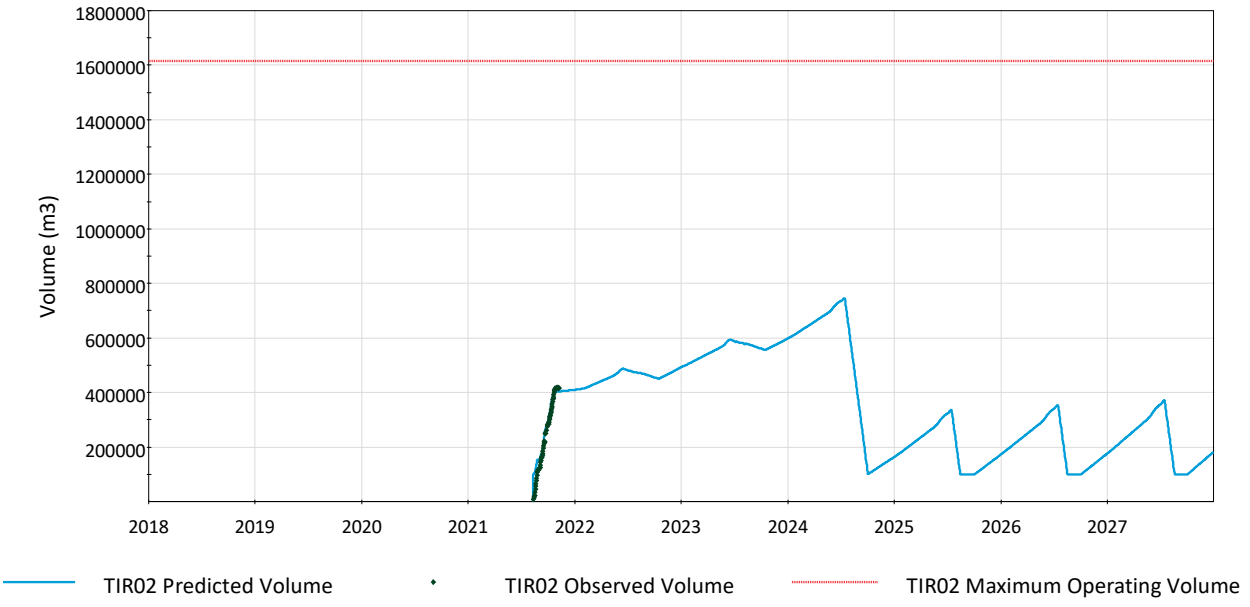

Figure 14: Forecasted saline water storage needed and TIRI02 Capacity (Actual versus Predicted).

As presented in Figure 13 and Figure 14, the model results show a sharp growth rate in saline water storage in TIRI02 between August and November 2021 as result of the transfer of saline water from SP4 to TIRI02 in addition to an inflow from the underground mine facilities. An increase in storage of saline water was also forecasted in TIRI02 between 2022 and 2024 even though a discharge to sea of 1600 m^3/day from July 15th to October 15th was applied in the model. However, the rate of change of saline water storage beyond 2024 through the life mine was stable due to the activation of waterline discharge in the model. Note that the minimum storage to be available in TIRI02 was set to 100,000 m^3. The water level Figures for all saline water ponds are presented in Appendix 5, Figures 7 to 8.

Based on the discharge to sea schedule implemented in the model and considering TIRI02 as a major saline water surface storage with a capacity of 1,616,554 m^3, a maximum of 46% of TIRI02 storage capacity will be utilized in future years (2022 - 2027). In 2022, a maximum of 500,000 m^3 saline water is expected to be stored in TIRI02, which accounts for 30% of the TIRI02 capacity.

In 2021, a total 47,771 m^3 of saline effluent water was discharged to Melvin Bay (see Section 3.1.5 for monthly discharge to Melvin Bay).

3.2.4 Saline Water Quality Model

A water quality forecast was generated for the saline water balance in a similar fashion to the surface contact water model. TDS, Ammonia and Radium-226 concentrations were assigned to each of the source terms and as starting conditions for the existing saline water in storage[3], based on the average concentration collected across all connate water quality samples from beginning from 2019. Figure 15, Figure 16, and Figure 17 presents the forecasted saline water TDS, ammonia and radium concentrations in TIRI02, respectively. The summary of TDS, Ammonia and Radium-226 forecasted concentrations for TIRI02 is also presented in Appendix 5, Table 4.

[3] Lorax (2022). Meliadine Extension: Water Balance and Water Quality Model Technical Report. Prepared for Agnico Eagle Mines Ltd, by Lorax Environmental Services, February 2022.

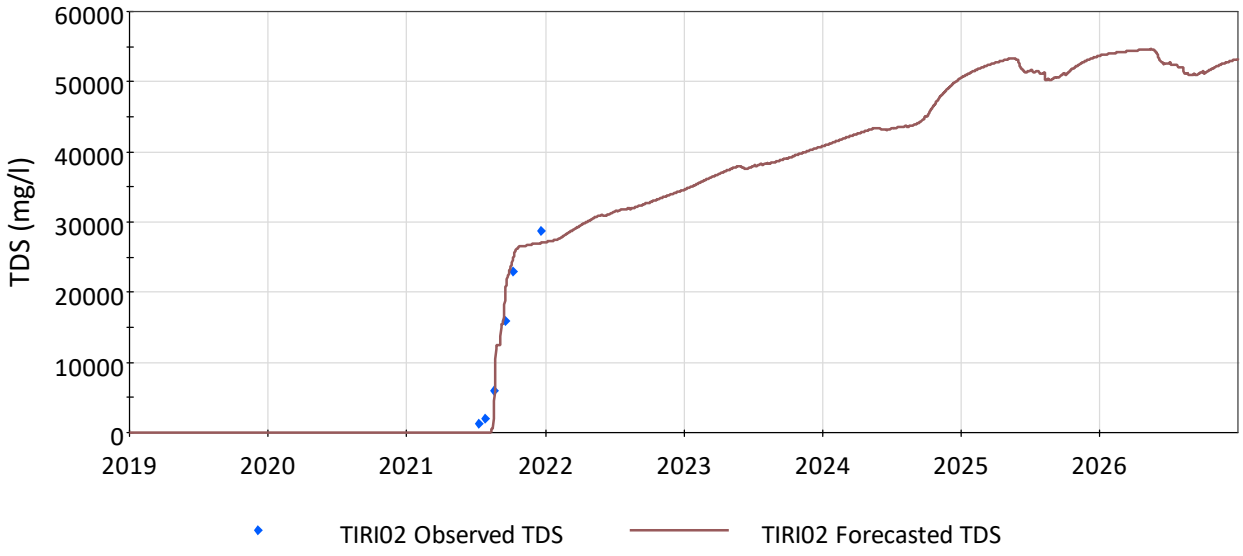

Figure 15. Forecasted versus observed TDS concentrations in TIRI02.

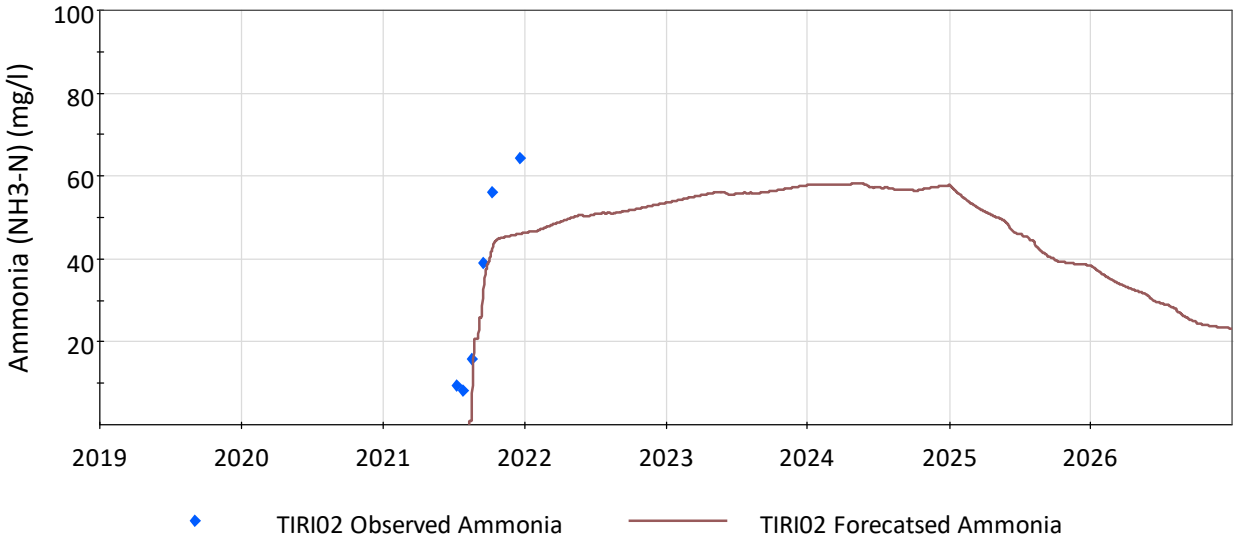

Figure 16 Forecasted versus observed ammonia concentrations in TIRI02.

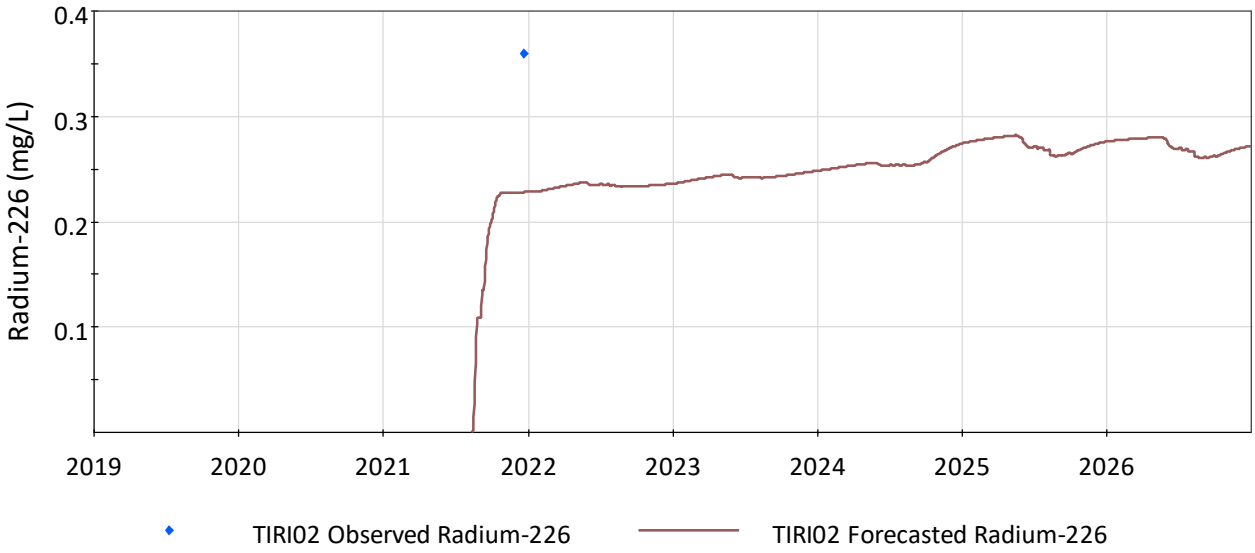

Figure 17. Forecasted versus observed radium concentrations in TIRI02.

The model forecasted the TDS, Ammonia and Radium-226 concentrations well in TIRI02, however; an increased observed concentration was noticed in the winter season of 2021 for all constituents compared to the model forecasted concentration (Figure 15 to Figure 17). This increased concentration may be attributed to cryo-concentration. It should be noted this trend is not confirmed for Radium-226, due to having only one data point.

3.3 WATER QUALITY MANAGEMENT AND OPTIMIZATION PLAN (WQ-MOP)

The Water Quality Management and Optimization Plan (WQ-MOP) was developed to provide a procedure for determining acceptable discharge criteria and an in-lake monitoring benchmark in Meliadine Lake (Golder 2021). The process included three phases:

- Phase 1: Develop total dissolved solids (TDS) discharge criteria and an in-lake monitoring benchmark for Meliadine Lake during the 2020 discharge season;
- Phase 2: Complete a detailed field study that included fish survival test with the discharge and aquatic organism growth and reproduction tests in the lake, and chemistry analysis of the discharge and the receiving environment on a regular basis;
- Phase 3: Develop long-term discharge criteria and an in-lake monitoring benchmark for Meliadine Lake that will be applicable for future operating conditions at the Meliadine Mine.

At this time, all 3 phases of the WQ-MOP have been completed. The proposed TDS targets for the discharge have been ratified and incorporated as criteria in the Type A Amended Water Licence. The following targets were set from the WQ-MOP:

- A maximum monthly mean concentration (or as per Golder maximum average concentration - MAC) and maximum concentration in a grab sample (or maximum grab concentration - MGC) of 3,500 and 4,500 mg/L TDS, respectively;
- An edge of mixing zone target of 1,000 mg/L TDS in the Meliadine Lake receiving environment at a radius of 100 m surrounding the diffuser.

An adaptive management strategy is applied for water quality monitoring of CP1 discharge to Meliadine Lake beyond 2020. The thresholds and management responses associated with adaptive management are detailed in Table 10 below.

Table 10: WQ-MOP Thresholds and Management Responses associated with Adaptive Management

Adaptive Management Level	Threshold	Management Activity/Response/Action
Green (Level 0) Normal Operating Condition	Measured concentrations are less than the MAC discharge limit and the edge of mixing zone threshold level	Continue monitoring as per Water Licence requirements Continue water management as per Water Management Plan
Yellow (Level 1)	Two consecutive end-of-pipe TDS concentrations equivalent to, or greater than, the MAC discharge limit, or Two consecutive edge-of-mixing zone TDS concentrations equivalent to, or greater than, 75% of the edge of mixing zone threshold	Conduct a follow-up sampling event to confirm trigger Collect additional edge of mixing zone sample (s) for chronic toxicity testing Increase sampling frequency at the end of pipe to twice weekly or at edge of mixing zone to bi-weekly
Orange (Level 2)	Three consecutive end-of-pipe TDS concentrations equivalent to, or greater than, the MAC discharge limit, or An end-of-pipe TDS measurement is equivalent to, or greater than the MGC discharge limit, or Three consecutive edge-of-mixing-zone TDS concentrations equivalent to, or greater than, 75% of the edge-of-mixing zone threshold	Conduct a follow-up sampling event to confirm trigger Decrease the rate of effluent discharge or temporarily cease pumping of the discharge Consider alternative management of CP1 water (e.g., divert to waterline)
Red (Level 3)	Two consecutive end-of-pipe TDS concentrations greater than 4,500 m/L	Cease pumping of the discharge to Meliadine Lake Conduct a follow-up sampling event to confirm trigger Consider alternative management of CP1 water,

		such as diversion of CP1 water into the waterline

In 2021, the adaptive management level remained in in the Green (Level 0) – Normal Operating Conditions, as all TDS concentrations measured at MEL-14 were below the MAC and the edge of mixing zone samples were below the threshold level. Hence, monitoring was conducted according to the Water Licence and the Water Management Plan. Results are presented and discussed in more details in section 7.3.1 below.

3.4 ADDITIONAL INFORMATION

As required by Water License 2AM-MEL1631 Schedule B, Item 26*: Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.*

And

As required by water license 2BB-MEL1424 Part B Item 6n*: Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported*

No additional information was requested in 2021.

SECTION 4. CRITICAL INFRASTRUCTURE MANAGEMENT ACTIVITIES

4.1 GEOTECHNICAL MONITORING

The safe and responsible management of critical infrastructure is a core activity for Agnico Eagle. A primary objective of Agnico Eagle's governance policy for critical infrastructure is to assure a high standard of care is applied to the entire lifecycle: design, construction, operation, closure and legacy (for elements of critical infrastructure that must function beyond closure).

The primary elements of the policy are:

- The development of specific roles with specific responsibilities;
- Regular and consistent reporting;
- Accountability at all levels, from operations to corporate;
- The use of Best Available Technology (BAT) and Best Applicable Practices (BAP); and
- The use of a risk-based approach to manage the risks associated with critical infrastructure.

As required by water license 2AM-MEL1631 Part I, Item 14: ***The Licensee shall submit to the Board as part of the Annual Report required by Part B, Item 2, a Geotechnical Engineer's Inspection Report. The Report shall include a cover letter from the Licensee outlining an implementation plan addressing each of the Geotechnical Engineer's recommendations.***

And as required by water license 2AM-MEL1631, Schedule B, Item 1*:*

a. An overview of methods and frequency used to monitor deformations, seepage and geothermal responses;

The performance of the dikes (D-CP1 and D-CP5) is assessed according to the guidelines provided in the Operation, Maintenance and Surveillance (OMS) manual for the facilities. This program consists of both documented visual inspections and geotechnical instrumentation monitoring. In 2021, visual inspections were conducted according to the following schedule:

- Daily – Conducted by personnel working on or adjacent to the water management infrastructure as part of their daily activities, such as environmental technicians, survey staff and dewatering crews.
- Weekly - Conducted during open water season by a qualified engineer or technician;
- Monthly – Conducted during open water season by the Agnico Eagle Responsible Person; and
- Annual – Conducted by a third party consulting engineer (Tetra Tech) during open water season.

The visual inspections include observations of cracking, settlement, seepage and deformation in addition to photographs. Any areas of movement are marked both physically on the dikes themselves by spray painting the locations and on plan drawings of the facilities in order to track changes in conditions.

In addition to the monthly documented visual inspection (during open water), a review of the operational performance and assessment of the geotechnical monitoring instrumentation is conducted every month by the Responsible Person. The schedule of collecting monitoring data in 2021 generally followed the OMS guidelines and is summarized in Table 11.

Table 11. Summary of 2021 Permanent Dike Geotechnical Monitoring Program

Instrumentation	Frequency of Data Collection
Thermistors	Updated twice per day (data loggers)
Survey Monuments	Monthly
Upstream Water/Ice Elevations	Daily (Open water); Monthly (Ice)

The performance of all other water management and earthworks structures were assessed in 2021 during the Annual Geotechnical Inspection conducted by Tetra Tech. The results of this inspection are available in Appendix 6.

b. A comparison of measured versus predicted performance;

Based on the visual inspections and geotechnical monitoring data, the permanent water retention dikes (D-CP1 and D-CP5) are generally performing as expected, with no significant geotechnical concerns identified in 2021. Deformation, seepage and geothermal response will continue to be monitored as per the OMS guidelines throughout 2022.

No significant geotechnical concerns were noted with any other water management infrastructure during the annual inspection. The results of this inspection and detailed analysis are available in Appendices 6 to 8.

c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk;

There were no unanticipated observations in 2021.

d. As-built drawings of all mitigation works undertaken;

Mitigation works undertaken in 2021 included the addition of run-of-mine rockfill near collection pond 6 (CP6) and downstream of D-CP1. The rockfill placement downstream of D-CP1 is ongoing at the end of 2021. An as-built drawing of the fill placed near CP6 is included in Appendix 9.

e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, water balance and water quality;

Run-of-mine rockfill was added between the WRSF3 and CP6. The finished surface of the rockfill was graded towards CP6. An as-built drawing of the rockfill is included in Appendix 9.

f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data;

4.1.1 Instrumentation at D-CP1

Horizontal ground temperature cable (GTC) plots indicate a continuing warming trend in the base of the key trench over 2021, with an average increase of +0.1°C occurring over the past year. The plots are shown

in Appendix B of the 2021 Annual Geotechnical Inspection Report (Appendix 6). Temperatures in the key trench ranged from an average high of –4.1°C in early January 2021 to an average low of -7.8°C in early June 2021. Generally, the average horizontal ground temperature cable nodes at the base of the key trench have remained below -3.3°C throughout the year.

Vertical ground temperature cable plots shown in Appendix B of the 2021 Annual Geotechnical Inspection Report (Appendix 6) indicate that the dike remained below 0°C until June 2021 and after November/December 2021, while the foundation remained below 0°C throughout 2021.

D-CP1 survey monitoring points M-1 to M-6 indicate a range of total vertical displacement between 23 mm and 67 mm since they were installed on September 19, 2017. The dike operating water levels were based on a settlement of 120 mm; the measured settlement has been less than this to date.

4.1.2 Instrumentation at D-CP5

Horizontal ground temperature cable plots shown in Appendix E of the 2021 Annual Geotechnical Inspection Report (Appendix 6) indicate a slight warming trend on average of 0.3°C in the key trench from January 2021 to December 2021. The average temperatures in the key trench ranged from –7.9°C in May 2021 to an -2.4°C in December 2021.

Three settlement survey monuments were installed over the liner crest in the dike. CP5 survey monitoring points indicate a settlement between 19 and 54 mm since installation. The dike operating water levels were based on a settlement of 100 mm; the measured settlement has been less than this to date.

4.1.3 Thermistors in the P-Area

The P-Area was decommissioned in 2020. The thermistors previously located on berm DP1B (DP1B-1 and DP1B-2) were removed in 2021. The thermistors on berm DP2A (DP2A-1) and berm DP3A (DP3A-1, DP3A-2, and DP3A-3) are still in place and temperature measurements are recorded four times per year. Thermistors records are provided in Appendix 6.

4.1.4 Thermistors in Berm CP3

Three (3) GTCs (GTC-01, GTC-02, and GTC-03 Berm CP3) were installed in Berm CP3 to measure the active layer depth in the berm and subgrade ground temperatures. The GTC plots are shown in Appendix C of the 2021 Annual Geotechnical Inspection Report (Appendix 6). The maximum active layer depth in 2021 varied from 2.4 m to 3.3 m. The ground temperature at Elevation 63.0 m ranged from –4.3°C to –5.0°C on November 25, 2021.

4.1.5 Thermistors in Berm CP4

Two (2) GTCs (GTC-01, GTC-02 Berm CP4) were installed in Berm CP4 to measure the active layer depth in the berm and subgrade ground temperatures. The GTC plots are shown in Appendix D of the 2021 Annual Geotechnical Inspection Report (Appendix 6). The maximum active layer depth in 2021 ranged from 1.9 m to 2.2 m. The ground temperature at Elevation 63.0 m ranged from –5.1°C to –5.5°C on November 25, 2021.

4.1.6 Thermistors in Berm CP6

Three (3) GTCs (GTC-01, GTC-02, GTC-03 Berm CP6) were installed in Berm CP6 to measure the active layer depth in the berm and subgrade ground temperatures. The GTC plots are shown in Appendix E of the 2021 Annual Geotechnical Inspection Report (Appendix 6). The maximum active layer depth in 2021 ranged from 2.0 m to 2.4 m. The ground temperature at Elevation 60.0 m ranged from –4.1°C to –5.3°C on November 25, 2021.

4.1.7 Other Thermistors

In addition to recently installed thermistors to monitor temperatures in and below critical water management infrastructures, numerous other thermistor cables have been installed around the mine site to monitor natural ground temperatures as part of previous ground investigation campaigns. In 2021, a total of five (5) new thermistor cables were installed on site. Two (2) GTCs were installed at the Tiriganiaq open pit #1 (TIRI01-S and TIRI01-N) to monitor the temperature of the overburden slopes of the pit walls, and three (3) thermistor cable were installed below Tiriganiaq open pit #2.

Top priority (P1) is now given to reading thermistors installed in existing infrastructure, with these readings typically taken on a monthly basis for the first year then quarterly afterwards, with the exception of the dikes and the TSF. Shallow GTCs installed in areas of potential future expansion are given the next priority (P2) with a quarterly reading frequency, followed by deep thermistors in future deposition areas which are read bi-yearly (P3). Also read twice per year are any additional cables located around the site (P4). The updated location of these thermistors is provided in the 2021 Geotechnical Inspection Report (Appendix 6).

Only seven (7) of the previously installed site thermistors were functional in 2021. Readings taken in 2021 in the remaining operational site-wide thermistors are generally consistent with previous trends.

g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams; and berms

Run-of-mine rockfill was added downstream of Dike D-CP1. The placement of rockfill in this area is ongoing at the end of 2021 and is expected to continue in 2022.

4.2 GEOCHEMICAL MONITORING

In accordance with Water License 2AM-MEL1631 Schedule B, Item 9*: Geochemical monitoring results including:*

a. Operational acid/base accounting and paste pH test work used for waste rock designation (PAG and NPAG rock);

The Acid/Base Accounting (ABA) and paste pH test work used for waste rock designation is in the 2021 Metal Leaching and Acid Rock Drainage Monitoring Report located in Appendix 10 and summarized below.

b. As-built volumes of waste rock used in construction and sent to the Waste Rock Storage Facilities with estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;

Waste rock from the mining activities in the open pits and underground was delivered to WRSF1 or was used for construction purposes in 2021.

c. All monitoring data with respect to geochemical analyses on site and related to roads and quarries;

All monitoring data with respect to geochemical analysis carried out at the Meliadine Mine in 2021 can be found in the 2021 Metal Leaching and Acid Rock Drainage Monitoring Report located in Appendix 10.

d. Leaching observations and tests on pit slope and dike exposure;

No leaching observations were detected on dike exposures or pit slopes where present. Open rock slopes were visible at SP1, SP2, SP4, CP3, CP4, and CP6. No leaching was observed.

e. Any geochemical outcomes or observations that could imply or lead to environmental impact;

No environmental impact implied, with the majority of the tests being observed as having low potential for Acid Rock Drainage (ARD) generation (non-PAG) with the exception of two samples of underground waste rock that were classified as *uncertain*, meaning that there is an uncertain chance that the samples in question have the potential to produce ARD. These samples are considered a low risk given the excess neutralization in all other waste rock samples collected and represent a minor proportion (1%) of all waste rock samples collected in 2021 (165 samples for open pit and underground waste rock, excluding the duplicates). It also should be noted that a considerable quantity (387,891 tonnes) of underground waste rock was kept underground for backfilling purposes.

f. Geochemical data associated with tailings solids, tailings, cyanide leach residue, and bleed from the cyanide destruction process including an interpretation of the data;

The geochemical monitoring data associated with the filtered tailings is included in Appendix 10 with a summary explained below in section 4.2.4. A discussion of the tailings supernatant and bleed from the cyanide destruction process is included in section 4.2.8 concurrent with the tailings supernatant.

g. Results related to the Borrow pits/ quarries and roads, including the All-Weather Access Road.

Two samples were collected from quarry material used for the construction of a tank pad in 2021. Results and interpretation are included in Appendix 10 and are summarized below in section 4.2.7.

4.2.1 ARD Assessment Methodology

Neutralization Potential

Based on Agnico Eagle's Geochemical Characterization Guide (2021), results of Modified Sobek NP should be compared with NP calculated from carbonate, and subsequently the more conservative method used to represent Neutralization Potential (NP) in NPR calculation and ARD assessment.

In 2021, NP quantified from the Modified Sobek titration method (NP-mod) was consistently lower when compared with NP calculated from carbonate (NP-Ca) and therefore NP-mod was used for ARD assessment. It should be noted that in previous years, NP-Ca was used since it was the more conservative parameter at the time of interpretation. The change to NP-mod in 2021 compared with previous years is attributed to carbonate content which was biased low in laboratory analyses conducted prior to April 2021 with the pyrolysis method, as discussed in Section 3 of Appendix 10.

Furthermore, following the carbonate re-analysis investigation detailed in Section 3 of Appendix 10, SRK Consulting recommended the use of Modified Sobek NP (NP-mod) for ARD potential calculations moving forward (SRK 2021) due to the presence of the iron and manganese bearing carbonates (ankerite and siderite), which cause NP-Ca to overestimate actual NP.

Acidic Potential

Acid Potential (AP) was calculated based on the amount of sulphide sulphur, calculated by difference of total sulphur and sulphate sulphur, as per Agnico Eagle's Geochemical Characterization Guide (2021). As stated in Agnico Eagle's 2020 Metal Leaching and Acid Rock Drainage Monitoring Report, project prediction studies indicated that the main sulphide minerals in the waste rock was pyrite, but also with arsenopyrite and lesser pyrrhotite, and chalcopyrite (Golder 2014). As a result, the main consideration for AP is the presence of sulphide minerals at Meliadine.

ARD Assessment

The potential for ARD was assessed using NP/AP ratios (or neutralization potential ratios, NPR). Ratios below 2 were used to indicate potential for ARD (PAG or potentially ARD generating), whereas ratios above 2 indicate low potential for ARD (non-PAG). Ratios between 1 and 2 are considered *uncertain*, meaning that there is an uncertain chance that the samples in question have the potential to produce ARD.

4.2.2 Underground waste rock

ARD Potential

As predicted by Golder (2014), the majority of operational waste rock samples collected to date are non-PAG. Two (2) 2021 underground waste rock samples fall within the "uncertain" classification. These samples are considered a low risk given the excess neutralization in all other samples collected.

Metal Leaching

Metal leaching was predicted by Golder (2014) to be low enough that management of waste rock to inhibit leaching was not required. However, based on project screening studies, arsenic was determined to be the main element of interest and analysis of this element (and all regulated elements) were part of operational monitoring since mining began. Complete element composition results are provided in Appendix 10.

To ensure arsenic concentrations are within project predictions, results are compared against average and maximum arsenic concentrations reported by Golder (2014). Solid phase arsenic concentrations mainly fall within or below the average concentration (of 218 mg/kg) for underground waste rock samples, with only

one sample in the past four years exceeding the maximum concentration reported by Golder (2014) (of 8000 mg/kg).

4.2.3 Tiriganiaq Open Pit 1 and Tiriganiaq Open Pit 2 Waste Rock

ARD Potential

All NP-mod/AP ratios for 2021 TIR01 and TIR02 Open Pit waste rock samples were greater than 2, indicating non-PAG.

Metal Leaching

As mentioned above, metal leaching was predicted by Golder (2014) to be low enough that management of waste rock to inhibit leaching was not required. However, based on project screening studies, arsenic was determined to be the main element of interest. Complete element composition results are provided in Appendix 10.

Arsenic results have been compiled and compared against average and maximum arsenic concentrations reported by Golder (2014). Solid phase arsenic concentrations mainly fall within or below the average concentration (of 218 mg/kg). All 2021 samples are below the maximum concentration (of 8000 mg/kg) reported by Golder (2014).

4.2.4 Filtered Tailings

ARD Potential

2021 samples showed a NPR ratio (NP-mod/AP) above 2 (non-PAG) or between 1 and 2 (uncertain). No filtered tailings samples collected in 2021 had an NPR lower than 1.

Project prediction studies in the FEIS estimated an NPR of 2.7 for the tailings, using NP-mod. 2021 samples showed a mean NPR of 2.0 (using NP-mod), while 2020 and 2019 samples showed a mean NPR of 1.7 and 1.2, respectively (using NP-Ca).

Despite the uncertain classification of the majority of the tailings samples over the 2019-2021 period, Agnico Eagle does not consider the tailings to pose an ARD risk for the site, for the following reasons:

- the tailings are being stored in a facility that will freeze back (i.e. re-develop permafrost) and inhibit water movement within a few years post-operations;
- placement of the tailings includes compacting by a vibrator packer and sloping to shed water off the facility, which will lower oxygen diffusion into the tailings and limit water contact, both established mechanisms to reduce ARD;
- there is enough carbonate in the tailings that ARD may never occur as the actual ratio that ARD onset is expected is much closer to 1.0;
- if ARD could develop, permafrost freeze back will occur before (at least one hundred years before) the onset of ARD due to the amount of carbonate in the tailings and arctic climate slowing reaction rates. The late potential onset of acidic conditions is based on the slow oxidation rate of sulphides, and therefore slow rate of neutralization consumption of carbonates and if slow enough, silicate neutralization. While tailings may be classified as uncertain, they still contain enough carbonate to

neutralize the acidity produced until many decades after operations have ended. Furthermore, it is also worth noting that the analytical laboratory completed an investigation showing that past carbonate analyses were biased low (section 3), meaning that there is more carbonate than previously shown, which would only extend the delay to consumption of carbonate; and

- progressive reclamation is a part of the facility management for closure, meaning a cover will be placed over most of the tailings before the mine ceases operations.

Metal Leaching

Given the presence of arsenic in the ore rock and background concentrations in the area, results for this element are summarized below and presented in Appendix 10.

Arsenic concentrations in filtered tailings samples ranged from a minimum of 4,200 mg/kg to a maximum of 13,000 mg/kg, with a median of 9,500 mg/kg in 2021. These values are higher when compared to waste rock since ore is associated with increased abundances of sulphides, including arsenopyrite.

Monthly monitoring of CP3 (sampling location MEL-20), continued during 2021 open water season as per the Water Licence requirements. CP3 collects the drainage from the TSF. Water quality results indicate that the total arsenic concentration in CP3 water were below the MDMER maximum authorized concentration in a grab sample (of 0.20 mg/L) for all samples collected between June and October. One sample (June) presented a total arsenic concentration slightly above the MDMER maximum authorized monthly mean concentration (of 0.10 mg/L). CP3 water is discharged to CP1 prior to treatment at the ETWP and discharge to Meliadine Lake.

Forecasted arsenic concentrations in surface contact water across life of mine are provided in the site-wide water balance and water quality model (WBWQM) as part of the Annual Report.

4.2.5 CP2 Bedrock

On November 11, 2021, samples were collected from the cuttings of boreholes drilled in the footprint of future Containment Pond 2 (CP2) for ARD/ML characterization. Construction of CP2 began in Q1, 2022.

ARD Potential

All NPRs were greater than 2, indicating non-PAG.

Metal Leaching

Arsenic results have been compiled and compared against average and maximum arsenic concentrations reported by Golder (2014). Solid phase arsenic concentrations are well below the average and maximum concentrations (of 218 and 8000 mg/kg, respectively).

4.2.6 TSF 2019-Deposited Tailings

On November 14, 2021, samples were collected from the cuttings of 6 boreholes carried out on TSF, within tailings which were deposited in the year 2019 for ARD/ML characterization. Two (2) samples of approximately 1 kg each were collected at each of the locations.

ARD Potential

Similar to most of the 2019-2021 filtered tailings samples, 2019-deposited tailings samples showed NPRs greater than 2 (non-PAG) or between 1 and 2 (uncertain). Despite the uncertain classification of some 2019-deposited tailings samples, Agnico Eagle does not consider the tailings to pose an ARD risk for the site, for reasons detailed in section 4.2.4.

Metal Leaching

Complete element composition results provided in Appendix 10. Solid phase arsenic concentrations ranged between 5,100 and 11,000 mg/kg, which is slightly lower than the range of arsenic concentrations measured in the 2019 filtered tailings samples (7,900 to 14,000 mg/kg).

4.2.7 Quarry Material and SP4 Temporary Pad

In 2021, other samples collected for ARD/ML characterization included the following:

- 2 samples collected on September 23rd, 2021 from quarry material used for the construction of a tank pad at Exploration Camp;
- 1 sample collected on October 1st, 2021 in the Saline Pond 4 (SP4) temporary pad. The sampled material is waste rock mined from TIR01 and was used for construction of check dams at Itivia on October 30th and 31st, 2021.

ARD Potential

All NPRs were greater than 2, indicating non-PAG.

Metal Leaching

Complete element composition results provided in Appendix 10. When compared with average and maximum arsenic concentrations reported by Golder (2014), one quarry material sample exceeds the average concentration (of 218 mg/kg).

4.2.8 Filtered Tailings Supernatant

Sampling of the filtered tailings supernatant began in June of 2019 and continued in 2021 with sampling occurring on a regular basis. Since this water is recycled through the mill, it also contains cyanide leach residue and the bleed from the cyanide destruction circuit. Water is filtered off the tailings from the filter press and samples are collected from the effluent downstream of the filter press. Since this effluent is recycled through the mill and is not discharged, with the exception of the water contained in the filtered tailings, it is not surprising to see the metals and general parameters becoming concentrated as the mill uses little fresh water to make up the water that is entrained with the filtered tailings.

Between October and November 2021, the tailings liquid sampling had to be interrupted due to a health and safety issue with the sampling point at the mill. Three (3) scheduled samples were cancelled during this period.

Appendix 11 indicates the results of the tailings supernatant sampling in 2020. As the water is recycled through the mill, the metals, TDS and other parameters initially increased and then have stabilized in 2019 while others have slowly increased. In 2021, the metals and other parameter concentrations were in general consistent throughout the year and generally lower than in 2020. The lower concentrations for metals in

2021 may be explained by the fact the mill feed water came from Meliadine Lake which, in general, has lower metals than CP1 surface contact water, which was used for the mill feed water in 2020. Dissolved metals are discussed below rather than total metals as there may be some interference from the solid tailings if the filter press is not functioning as per design.

For dissolved arsenic, values in 2021 were similar to 2020 values as milling continued throughout 2021. The minimum value of dissolved arsenic was 4.23 mg/L with the maximum value at 19.2 mg/L. The dissolved arsenic mean value for 2021 was 11.8 mg/L. These numbers are not unexpected as the gold is associated with sulphides, such as arsenopyrite, and the water is recycled through the mill. Total cyanide values were variable during the year. The highest concentration for total cyanide was recorded on December 26 at 68.7 mg/Land the lowest concentration was measured for the sample collected on January 10 at 6.8 mg/L mg/L. The mean for 2021 was 40.8 mg/L.

It is important to state again that the water in the mill is recycled and only a small portion of the mill effluent is entrained in the filtered tailings. As discussed in section 4.2.4 Agnico Eagle is monitoring the water quality in CP3 as per the Water Licence requirements.

4.3 WASTE ROCK VOLUME

In accordance with Water License 2BB-MEL-1424 Part B Item 6c*: An estimate of the current volume of waste rock and ore stockpiled on site;*

See Table 4.1 of the Mine Waste Management plan for as-built and expected waste rock usage on site per major location. Plans and sections of WRSF1 at the end of 2021 and of WRSF3 at the end of 2020 are presented in Appendix 12 (it should be noted no material was put into WRSF3 in 2021, therefore no survey was conducted in 2021).

An estimate of waste rock and ore stockpiled on site is provided in the Table 12 below. The monthly cumulative stockpiles vary (and can go down) according to production and construction needs.

Table 12. Ore and waste rock stockpiles on site excluding major locations (Tonnes)

Date	Underground Ore	Open Pit Ore	Cumulative Ore	Waste Underground	Waste Open Pit	Waste Cumulative
Jan-19			176,779			101,661
Feb-19			170,116			148,632
Mar-19			138,423			195,971
Apr-19			117,832			208,337
May-19			105,348			123,660
Jun-19			125,705			20,280
Jul-19			127,396			16,966
Aug-19			113,351			22,843
Sep-19			118,412			12,360
Oct-19			123,236			18,384
Nov-19			129,868			49,420
Dec-19			144,088			499,600

Jan-20	192,736	-	192,736			83,489
Feb-20	220,468	-	220,468			110,236
Mar-20	199,258	-	199,258			85,623
Apr-20	151,789	-	151,789			*No Survey*
May-20	101,101	546	101,647			74,544
Jun-20	79,320	9,852	89,172			*No Survey*
Jul-20	61,716	22,316	84,032			13,173
Aug-20	61,192	31,358	92,550			31,952
Sep-20	61,547	38,956	100,503			10,620
Oct-20	72,106	48,205	120,311			46,017
Nov-20	71,357	82,890	154,247			*No Survey*
Dec-20	59,886	120,719	180,605			22,539
Jan-21	107,237	57,802	165,039	1,188	-	1,188
Feb-21	103,517	74,224	177,741	-	-	-
Mar-21	99,629	51,213	150,842	1,055	2,100	3,155
Apr-21	112,868	56,981	169,849	1,164	11,261	12,425
May-21	135,807	70,344	206,151	1,164	5,149	6,313
Jun-21	155,799	7,163	162,962	-	5,149	5,149
Jul-21	135,738	11,654	147,392	880	-	880
Aug-21	148,165	33,289	181,454	880	-	880
Sep-21	185,426	50,689	236,115	880	11,825	12,705
Oct-21	178,361	113,103	291,464	-	-	-
Nov-21	202,190	187,688	389,878	-	-	-
Dec-21	204,988	217,296	422,284	-	-	-

4.4 TAILINGS STORAGE FACILITY

4.4.1 Tailings Storage Facility Capacity

As required by Water License 2AM-MEL1631 Schedule B, Item 10*: An update on the remaining capacity of the Tailings Storage Facility.*

Active tailings placement into the tailings storage facility (TSF) continued throughout the year. A total of 826,579 m^3 (1,363,855 t) of tailings were placed in the facility in 2021 for a remaining design capacity of 4,641,640 m^3 (7,658,706 t) as shown in Table 13. Plans and cross sections of the TSF at the end of 2020 and 2021 are presented in Appendix 13.

In addition to tailings, a total of 133,195 m^3 (250,407 t) of waste rock was placed as progressive cover material around the side-slopes of the facility in 2021. According to design specifications, an additional 980,547 m^3 (1,843,428 t) of rock remains to be placed.

Table 13. 2021 Volumes of Material Placed in TSF

	Tailings Placed (m^3)	Waste Rock Placed (m^3)
January 2021	69,891	11,412
February 2021	61,034	11,088
March 2021	72,532	9,358
April 2021	58,043	3,125
May 2021	76,766	4,546
June 2021	75,703	12,236
July 2021	69,009	14,683
August 2021	60,833	14,431
September 2021	47,517	14,945
October 2021	83,091	9,071
November 2021	66,061	17,354
December 2021	86,099	10,946
Total 2021	**826,579**	**133,195**
Total at end of 2021	**1,976,619**	**294,578**
Remaining Capacity	**4,641,640**	**980,547**

4.4.2 Tailings Freeze-back and Capping Thickness

As required by Water License 2AM-MEL1631 Schedule B, Item 19: ***A summary of on-going field trials to determine effective capping thickness for the Tailings Storage Facility and Waste Rock Storage Facilities for the purpose of long term environmental protection.***

No field trials to determine effective capping thickness for the TSF were undertaken in 2021. Tailings freeze-back however, was monitored monthly through the four (4) thermistors installed in 2019 and one (1) historic GTC. The data indicates that tailings material monitored by the thermistors were generally frozen by December 2021.

Temperatures in the original ground below the TSF were continuously below 0°C throughout 2021. Figures displaying the GTC data from the various TSF thermistors are located in Appendix I of the 2021 Geotechnical Inspection Report (Appendix 6).

SECTION 5. WASTE MANAGEMENT ACTIVITIES

5.1 LANDFILL AND LANDFARM MONITORING

As required by Water License 2AM-MEL1631 Schedule B, Item 11: ***Summary of quantities and analysis of Seepage and runoff monitoring from the Landfill, Landfarm, Waste Rock Storage Facilities, Borrow pits and Quarries.***

and

As required by Water License 2AM-MEL1631 Schedule B, Item 12: ***Summary report of all general Waste disposal activities including monthly and annual quantities in cubic metres of Waste generated and locations of disposal.***

The landfill and the landfarm were commissioned in November 2017. No seepage was observed from either facilities in 2021. Monitoring and inspection will continue on a regular frequency.

No seepage was observed around operating quarries and borrow pits located on site and along the AWAR as per regular inspections completed by the Environment Department.

All waste, produced at Meliadine, falls into 4 major categories:

1) Hazardous waste;
2) General (dry, non-hazardous) waste;
3) Food waste; and
4) Contaminated soil.

Hazardous waste (including paint, environmentally hazardous substances, hydrocarbon contaminated soil non-treatable at the Landfarm, oily contaminated solids etc.) is segregated according to material type, stored in sea containers, and shipped south during the sealift season. All hazardous waste on site was shipped by Nunavut Sealift and Supply Inc., to Qikiqtaaluq Environmental Services (QE) facility in Quebec, via Port of Bécancour. Documentation for the transfer of hazardous waste can be found in Appendix 14.

In 2021, a total of 775.644 tonnes of hazardous waste was shipped from Meliadine via one sealift from Rankin Inlet to the Port of Bécancour. A total of 112.89 tonnes of waste material was shipped south for recycling, including aerosol cans, alkaline batteries or dry cells, lead batteries, empty pails, drums, totes or tanks in plastics or steel, electronic waste, used lamps, antifreeze/glycol (with a concentration of more than 30%), oil filters and used tires (27.04 tonnes).

At the port, hazardous and non-hazardous waste was managed by QE and Terminaux Portuaires du Quebec (QSL) on behalf of Agnico Eagle before being transported to *Ministère de l'Environnement et de la Lutte contre les changements climatiques* (MELCC)*,* authorized disposal facilities.

A total of 189 (20 ft) hazardous waste marine containers were transported to *Solva-Rec Environnement inc*. (Solva-Rec), *Terrapure Environnement, Métaux Depot and MultiRecycle*. In addition, 6 (20 ft) marine containers containing used tires were transported to *Revalorisation TPOL Inc.* These compagnies are all registered companies or disposal facilities located in the Province of Quebec.

General waste, such as glass, concrete, wood and ash is landfilled on-site and off-site. Type A landfill was commissioned in November 2017, and in September 2018, the landfill was expanded to contain an extra 11,000 m³ (landfill stage 2). In September and October 2020, the landfill stage 3 expansion works raised the perimeter berm by a nominal amount to increase the storage capacity by 2,696 m^3, to a total storage volume of 22,201 m^3.

Various measures were applied in 2021 to improve waste segregation at the source, allowing for increased volumes of wood and cardboard being burnt rather than landfilled. Waste segregation at the source, in addition to landfill material being compacted mitigates dust emissions from the landfill.

The volume of landfilled waste is estimated through periodic surveys, and the waste placed into Type A landfill during 2021 is estimated at 5,100 m^3, while it was estimated at 1,874 m³ in 2020. This increase can likely be explained by the various construction activities on site (including the Water Treatment Complex, the Gym Facility, the MSB Garage Extension, etc.), resulting in more construction waste being landfilled.

In 2021, soil remediation activities took place in Landfarm A and Landfarm B. Twice during the year, windrows were aerated and additional nutrients were added.

On July 19th and August 20th, 2021, samples were collected in Landfarm A's soil windrows and sent for analysis of petroleum hydrocarbons fractions 1 to 4 (F1-F4), benzene, toluene, ethylbenzene and xylene (BTEX) at an accredited laboratory. Results were compared to the Government of Nunavut (GN)'s Environmental Guideline for Contaminated Site Remediation (GN 2009) criteria for the agricultural/wildlife and industrial land uses, as per the Landfarm Management Plan. Soils showing compliant results with the agricultural/wildlife and/or industrial land uses criteria were moved from Landfarm A to WRSF1 between September 27th and October 7th. Approximately 600 m^3 of remediated material was moved. According to a survey conducted on January 1st, 2022, Landfarm A contained approximately 442 m^3 of material.

On September 30th and October 1st, 2021, approximately 350 m^3 of soils were moved from Landfarm B to Landfarm A to continue remediation, in preparation for Landfarm B decommissioning associated with the planned extension of WRSF3. According to the latest survey conducted on October 8th, 2021, Landfarm B contained approximately 307 m^3 of material. It should be noted that no additional contaminated material was placed into Landfarm B in 2021.

An estimate of 28.5 m^3 of contaminated soil was placed in Landfarm A in 2021 from spill clean up, monthly volumes are indicated in Table 14.

Table 14. 2021 Volume of waste transferred to the landfarm

Month	Volume of contaminated soil placed in Landfarm A (m³)
January	0
February	0
March	0
April	5
May	0.5

June	2.2
July	3.1
August	2.2
September	6
October	6.5
November	2
December	1.0
Total	**28.5**

5.2 INCINERATOR

As per Water License 2AM-MEL1631 Schedule B, Item 13: ***Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water.***

Food waste, including food packaging, was incinerated to avoid landfilling the material, and attracting wildlife.

Agnico Eagle hired the Emission Services Group of Bureau Veritas (BV) to perform an atmospheric emission characterization program at the outlet (stack) of the incinerator. The objectives of this atmospheric emission characterization campaign, which took place on October 19th and 20th, 2021 , were as follows:

- Evaluate the physical characteristics of the stack's gas flow;
- Evaluate the concentration and the emission rate of the main contaminants emitted by the incinerator;
- Compare the emission results to the applicable standards;
- Ensure that the sampling work respects the recognized quality control criteria.

As can be observed in Table 15, the applicable standard for mercury (Hg) was met for all tests. For dioxins and furans (PCDD/F), the average for all tests conducted is below the applicable standard, while the concentration for Test 2 is above the standard. The standards originate from the "*Environmental Guideline for the Burning and Incineration of Solid Waste*" published by the Department of Environment of the Government of Nunavut based on the Canadian Council of Ministers of the Environment (CCME) Canada - Wide Standards for Dioxins and Furans and Mercury Emissions. The complete report can be found in Appendix 15.

Table 15. 2021 Stack Testing Mercury and Dioxin and Furan Results

Parameter	Unit	Test 1	Test 2	Test 3	Average	Applicable Standard	Compliance
Mercury	ug/m3 dry @ 11% O2	0.4237	0.0772	0.0398	0.1803	20	Yes
Dioxins and Furans (PCDD/F)	pg/m3 dry @ 11% O2	7.4927	166.5832	35.5979	69.8912	80	Yes

Agnico Eagle also proceeded with incinerator ash testing, the results are provided in Table 16. All results were compliant with the GN's Guideline for Industrial Waste Discharges into Municipal Solid Waste and

Sewage Treatment Facilities (GN 2011), with the exception of leachable Arsenic for the sample collected on December 13, 2021.

As per the Incineration Management Plan, following the Arsenic exceedance, ash sampling frequency was increased to monthly at the beginning of 2022 (instead of quarterly). Once results meet all parameter guidelines for Industrial Waste Discharge for 3 consecutive months, quarterly sampling will resume. Non-compliant ash is packed and will be disposed off according to the Incineration Management Plan.

Table 16. 2021 Incinerator Ash Monitoring

Leachable Metals	Guideline for Industrial Waste Discharge (mg/L)*	Unit	Annual Average			2/09/2021	5/12/2021	9/26/2021	12/03/2021
			2019	2020	2021				
Arsenic	2.5	mg/L	0.25	0.375	1.88	0.4	0.6	0.8	5.7
Barium	100	mg/L	0.57	0.25	0.25	0.3	0.3	< 0.2	< 0.2
Cadmium	0.5	mg/L	0.095	0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chromium	5	mg/L	6.25	0.275	0.50	0.9	0.5	0.5	<0.1
Lead	5	mg/L	0.10	0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1
Mercury	0.1	mg/L	0.0010	0.001	<0.001	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	1	mg/L	0.10	0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1
Silver	5	mg/L	0.010	0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zinc	500	mg/L	0.10	0.1	4.83	< 0.1	< 0.1	< 0.1	19

* Government of Nunavut Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities (2011).

5.3 ADDITIONAL INFORMATION

As required by Water License 2AM-MEL1631 Schedule B, Item 26: ***Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.***

And

As required by water license 2BB-MEL1424 Part B Item 6n***: Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported***

The Board did not request any additional details on waste disposal in 2021.

SECTION 6. SPILL MANAGEMENT

As per Water License 2AM-MEL1631 Schedule B, Item 14: ***List and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken.***

And

As required by water license 2BB-MEL1424 Part B Item 6f: ***A list of unauthorized discharges and a summary of follow-up actions taken***

In 2021, a total of 27 reportable incidents occurred at Meliadine. Amongst these incidents, 23 were reported under Water Licence 2AM-MEL1631 and 4 were reported under Water Licence 2BB-MEL1424. The total reportable and non-reportable incidents for years 2018 to 2021 are provided in Figure 18 below.

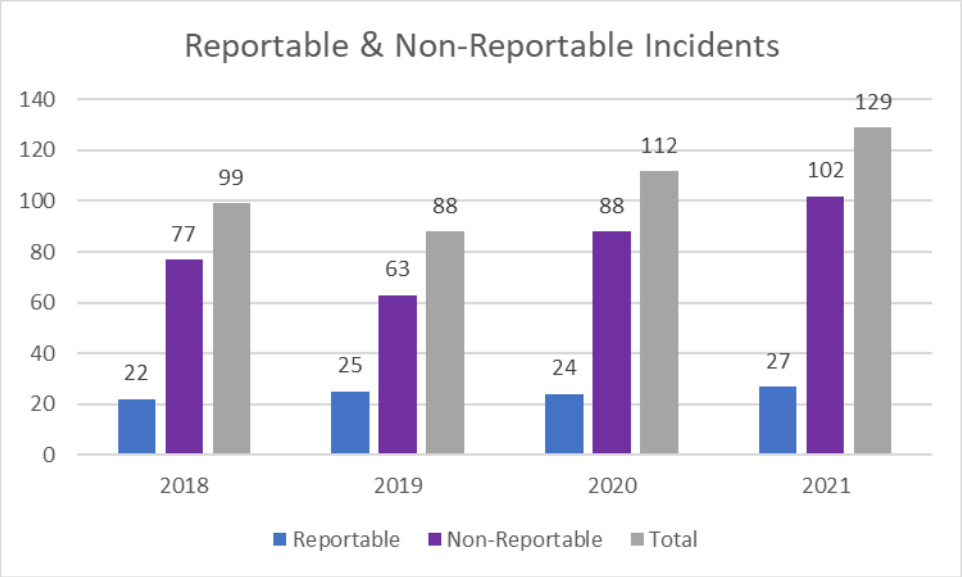

Figure 18: Total Reportable and Non-Reportable Incidents from 2018 to 2021

All reportable spills were reported to the 24-hour spill reporting line as required by the Government of Nunavut's Environmental Protection Act, paragraph 5.1 (a), the conditions under the NWB License 2AM-MEL1631 Water Licence, Part H, Item 8(b) or the conditions under the NWB License 2BB-MEL1424, Part H, Item 4(b). For all reportable spills, a follow up report was submitted 30 days or less following the event as required under the Nunavut Water Board License 2AM-MEL1631 Water Licence, part H, item 8(c).

All 2021 reportable spills/exceedances are summarized in Table 17, and complete spill reports and follow up reports can be found in Appendix 16. Non-reportable spills are summarized in Table 18.

Table 17: 2021 Reportable spills or limit exceedances

Date of spill/exceedance	Hazardous Material	Quantity for spills or analyses results for exceedance	Unit	Location	Cause of the spill
January 5, 2021	Hydraulic Oil	170	L	East side of the Apron Feeder Building	Equipment Failure
January 18, 2021	Heat Recovery Water	165	m^3	East of WRSF1	Human Error
March 29, 2021	Hydraulic Oil	20	L	Lake A8	Equipment failure
March 29, 2021	Hydraulic Oil	3	L	Lake A8	Equipment failure
April 23, 2021	Hydraulic Oil	150	L	WRSF1 to TIRI01	Equipment Failure
May 13, 2021	Untreated Sewage	80	m^3	Main Camp Lift Station	Human Error
May 31, 2021	Hydraulic Oil	5	L	Near Lake B5	Human Error
June 3, 2021	Total Suspended Solids	120	mg/L	MEL-SR14. southwest side of the Bypass Road	Freshet
June 4, 2021	Diesel Fuel	250	L	Exploration Camp Core Shack	Equipment Failure
June 5, 2021	Untreated Sewage	3,500	L	Gravel Pad beneath Wing 12	Equipment Failure
June 29, 2021	Heat Recovery Water	8	m^3	Arctic Corridor and ground below	Equipment Failure
July 7, 2021	Hydraulic Oil	150	L	Pad Between TIRI01 and TIRI02 Open Pits	Equipment Failure
July 11, 2021	Treated Saline Water	1	m^3	Saline Effluent Treatment PlantP	Equipment Failure
July 14, 2021	Cyclone Slurry	20	m^3	Process Plant and Industrial Pad	Equipment Failure
August 12, 2021	Total Suspended Solids	300	mg/L	MEL-SR1	Natural Event (heavy rainfall)
August 22, 2021	Total Suspended Solids	160	mg/L	Pond A-40	Human Error
September 15, 2021	Hydraulic Oil	300	L	Dome 3	Human Error
October 4, 2021	Grease	150	L	North Side of Process Plant	Human Error
October 14, 2021	Hydraulic Oil	200	L	High Grade Ore Pad - Portal 2	Equipment Failure
November 2, 2021	Untreated Sewage	300	L	Main Camp, Between Wings 3 & 4	Human Error
November 3, 2021	Untreated Sewage	200	L	Wing P, Main Camp	Human Error
November 16, 2021	Cement Paste	25	m^3	Between Tiri01 Hauling Road and Paste Plant	Equipment Failure

November 23, 2021	**Heat Recovery Water**	**8**	**m^3**	**Arctic Corridor and ground below**	**Equipment Failure**
November 30, 2021	**Treated Sewage Water**	**200**	**L**	**Sewage Treatment Plant**	**Equipment Failure**
December 7, 2021	**Charred Material/Fire Suppression Water**	**800**	**L**	**Shore of Meliadine Lake**	**Equipment Failure (which led to fire)**
December 8, 2021	**Untreated Sewage**	**100**	**L**	**MSB Lift Station**	**Equipment Failure**
December 25, 2021	**Hydraulic Oil**	**100**	**L**	**Ore Pad 2**	**Equipment Failure**

*Green indicates incidents reported under Water Licence 2BB-MEL1424 *Orange indicates incidents reported as due diligence*
**Blue indicates exceedances*

Furthermore, in early 2021, a laydown pad was built southeast of Tirganiaq Open Pit 2, in the northern portion of the Pond J6 at the western extremity of the J watershed, as shown in Figure 19.

As set out at Part A, Item 1(a), the scope of Type A Water Licence No. 2AM-MEL1631 authorizes Agnico Eagle to conduct mining and associated activities, including the construction of industrial pads and laydown areas as well as the draining of ponds.

According to the FEIS, pond J6 has an area of approximately 1.75 hectares (Ha) and a maximum depth of 0.69 meters (m). No fish were found in J6 (Volume 7, Appendix 7.5-D) during the FEIS assessment. J6 was classified as a small waterbody with temporary flow during freshet or rain events. It freezes to the bottom in winter and cannot sustain fish.

In the FEIS, pond J6 was planned to be dewatered during Mine Year 3 to accommodate the construction of a pad for ore stockpiling (FEIS SD 2-6, Table 7). Dewatering has not yet occurred, however, during winter 2021 a pad was built within the Production Lease Area in the northern portion of pond J6

While pond J6 was not drained prior to the construction activity as initially contemplated in the FEIS, Agnico Eagle implemented follow up measures to mitigate any potential impacts to the environment. Water flow from pond J6 was captured and directed towards onsite water management infrastructures as to ensure no water was going offsite. Additional monitoring measures were followed in accordance with the Sediment and Erosion Management Plan, including runoff inspections from the laydown pad, field readings and water sampling.

The water samples collected downstream of pond J6 indicate no off-site impacts have occurred. Monitoring will continue in the 2022 open water season to assess any medium-term impacts and if further actions are required.

Figure 19: Laydown pad satellite image

In 2021, several environmental incidents prevention measures were put in place and are summarized below. This is part of a program put in place in 2021 with the objective of focusing on environmental issues, procedures, work plans or incidents to optimize the environmental operation of the Mine.

All treated water from the Exploration Camp Sewage Treatment Plant (STP) was transferred by truck either to the Main Camp STP for a second treatment, or to CP1 instead of being discharged to Meliadine Lake, lowering the risk of exceedances.

As stated in the Meliadine 2020 Annual report, the procedure for handling totes and barrels with forked equipment was updated in 2020 to work towards reducing fork related spills. The updated procedure reiterates the mandatory use of a spotter for the movement of all totes, drums, chemical bags or any product transported by forked equipment which has the potential to be spilled when the transport is occurring outside a building or secondary containment area. Furthermore, forklift training has been adjusted to place more emphasis on spill prevention and toolbox meetings were held to review the procedure.

In 2021, efforts to raise awareness among the various departments related to the prevention of spills when using forked equipment were continued. Indeed, 43 toolboxes presentations were carried out by the Environment department in 2021 on *Mandatory Use of a Spotter*, reinforcing the application of the procedure among the employees. In addition, the *Skid Steer and Telehandler Vehicles Operation* training material was updated to include and put emphasis on the mandatory use of a spotter while operating this equipment.

Furthermore in late 2021, a new internal Environmental Permit form was proposed at Meliadine with the objective to prevent occurrences of environmental incidents and is scheduled to be implemented in 2022.

In addition, weekly interdepartmental meetings are held, allowing for efficient and timely communications on ongoing and upcoming project as well as daily operations meetings, where all department representatives are asked if any environmental risk is foreseen in the planned activities for the day. These meetings allow the Environment Department to better foresee environmental risks in ongoing and planned activities as well as to increase environmental awareness.

To help prevent spills and also ensure all spills are reported internally, spill prevention training continued to be provided to employees in 2021. It is believed that employee's increased spill management awareness leads to more events being properly identified as spills and reported as such. The spill training program is improved on a continuous basis by the Environment Department.

Training activities include the following:

- All employees and contractors must participate in an induction session online prior to the arrival at the mine site, which includes a training section on spill management (prevention, reporting and cleaning);

- Every employee and contractor who operates a vehicle on site must participate in training on vehicle operation. Spill management is a component of this training session;

- Toolbox talks on spill management are regularly conducted by the environment department, with focus on high risk departments. In 2021, toolboxes presentations were carried out on the following subjects related to spills: mandatory use of a spotter (43), spill reporting and spill mitigation (6).

- All site personnel receive quarterly updates on environmental performance including total reportable and non-reportable spills;

- Intelex spill reporting software training is provided to department managers on a monthly basis where required;

A mock spill exercise was completed on September 26, 2021 at the Itivia refueling station and tank farm as per required regulations. Due to COVID-19 restrictions, Rankin Inlet Fire Department, Government of Nunavut and CIRNAC weren't able to attend the mock spill exercise in person, and a hybrid formula with a table top exercise was conducted. Agnico Eagle's Environmental staff reviewed the content of the emergency response equipment with Intertek personnel, as well as reviewed the appropriate radio protocols and ship to shore procedure. The mock scenario involved a collision between a fuel truck and a fuel line, resulting in the fictive release of diesel from the fuel line and flowing across the tundra towards Melvin Bay. The fictive release area was 20 m wide by 50 m long and increasing; with a line estimated to contain about 3,500 L of diesel. Agnico Eagle's Environmental staff led the exercise, to which Intertek personnel participated. The exercise allowed participants to gain experience on spill intervention and awareness of spill management equipment. Overall, the participant's actions and response to the mock spill were satisfactory and it was determined that all participants had a sufficient understanding of roles and responsibilities of all spill responders. Lessons learned from the event will ensure a more efficient response in the future, if needed. The detailed mock scenario report can be found in Appendix 17.

Table 18. 2021 Non-reportable spills

Date and time of occurrence	Material Spilled	Estimated quantity (l)	Exact location of incident	Description of incident	Describe immediate corrective actions
Friday, January 01, 2021 5:00:00 PM	Engine or Transmission oil	20.00	E&I Operation Laydown	The crane operator noticed oil leaking from loader as he walked by the 65LOA01 idling in equipment laydown.	Operator shut down machine, spill was cleaned and contaminated material disposed of adequately.
Saturday, January 02, 2021 3:00:00 AM	Hydraulic Oil	25.00	TSF	A hydraulic hose busted.	Packer was shut off. Spill pads were used to clean up and contaminated material disposed of adequately.
Monday, January 04, 2021 6:00:00 AM	Hydraulic Oil	4.00	E & I Ops laydown	An operator walked by Loader 02 and noticed a small hydraulic oil puddle underneath due to a cracked hose.	Loader was shut off, supervisor was notified. Spill was contained and contaminated material disposed of adequately.
Thursday, January 07, 2021 12:30:00 PM	Emulsion	30.00	Emulsion pad portal 1	Surface labor worker were about to load the boom truck 20 with emulsion tote. The loader grabbed the emulsion tote from the flat track and back up. The loader crawled over a small snow bank causing the weight of the bin to shift. The weld broke off from the fork pocket flange and the tote fell. The lid open and emulsion spill onto the pad.	Approximately 300 Kg fell on the ground but were able to recuperate approximately 285 Kg of emulsion with aluminum shovels and spill kit (yellow bag). Contaminated material disposed of adequately.
Friday, January 08, 2021 1:00:00 PM	Grey Water	50.00	Underneath Kitchen	Piping system cracked due to weather.	Plumbing was fixed. Snow was transferred to CP1 snow dump.
Saturday, January 09, 2021 1:00:00 AM	Hydraulic Oil	10.00	TSF	Worker reported dozer down on TSF with an hydraulic leak.	Operator shut down machine, spill was cleaned, and contaminated material disposed of adequately.
Monday, January 11, 2021 1:30:00 PM	Rusted Water	3.00	EWTP	A rusty water spill was observed over at the EWTP originating from a pump being disconnected.	Ice was scrapped and brought to the snow dump.
Friday, January 22, 2021 8:00:00 AM	Hydraulic Oil	40.00	Crane Pad	A hydraulic hose busted on Loader 01.	Spill was contained and the contaminated snow was brought to snow cell.
Monday, January 25, 2021 2:00:00 PM	Coolant	10.00	KCG Garage	During the reparation of the PC1250 at the shop, the motor overheated, and the coolant overflew, resulting of a coolant spill of 10 L.	The contaminated snow and soil were collected and brought to the snow cell.
Friday, January 29,	Hydraulic Oil	25.00	Chemical Pad	A hydraulic hose busted.	The contaminated snow and soil were collected and brought to the snow cell.

2021 11:30:00 AM					
Saturday, January 30, 2021 1:00:00 AM	Hydraulic Oil	25.00	Tiriganiaq 1	A dozer caught fire in Tiri 1 open pit which resulted in some hydraulic oil leaking.	Contaminated ground was brought to the landfarm.
Saturday, February 13, 2021 6:30:00 PM	Transmission Oil	6.00	Water Treatment Center	The driver hit a rock with the pickup, the rock broke a piece of the transmission cooler and caused the leak.	The vehicle spill kit was used to contain the spill. The contaminated snow was scraped up and brought to the snow cell. The absorbent pads will be disposed of as hazardous waste.
Sunday, February 21, 2021 4:30:00 AM	Diesel Fuel	25.00	South of tailing dewatering building	When fuel truck operator engaged the PTO his nozzle was still engaged causing fuel to spill until kill switch was shut off.	Spill pads were put over fuel, spill was contained. Snow was picked up and sent to snow cell.
Wednesday, February 24, 2021 10:30:00 AM	Petroleum Products	23.08	400 Gear Bay	During rock breaking work a hose broke.	The spill was contained and absorbent pads were used to clean the area and disposed in the hazmat bag.
Monday, March 01, 2021 9:00:00 PM	Hydraulic Oil	8.00	MSB Parling Lot	A hydraulic hose failed on a tractor when the parking break was released.	Spill pads were used and disposed of according to procedure.
Thursday, March 11, 2021 2:30:00 AM	Sewage	5.00	Main Lift Station	Lift station pump did not activate due to high level switch malfunction (which got stuck in grease). The majority of the spill was contained inside the building, but some sewage spilled outside.	The Main Lift station was cleaned and grease was removed from the float switches to prevent them from sticking.
Friday, March 12, 2021 5:00:00 PM	Compressor Oil	40.00	KCG Shop Yard	The compressor oil hose failed on a drill.	The spill was cleaned using spill pads which were disposed of according to procedure.
Saturday, March 13, 2021 7:30:00 PM	Hydraulic Oil	25.00	In front of KCG Lunchroom	The sight glass of the hydraulic tank on a haul truck was cleaned with the wrong tool, resulting in a breakage that led to a spill.	The engine was stopped, and the spill contained. Spill pads were used and disposed of in a Quatrex bag. Oil was disposed of in a used oil tote. The contaminated snow was removed and put into the snow cell.
Monday, March 15, 2021 1:00:00 AM	Grey water		Under Exploration Camp Kitchen	Foxes damaged the insulation on the plumbing under the kitchen resulting in the grey water freezing and plumbing cracking in multiple locations.	The plumbing and insulation were repaired.
Thursday, March 18, 2021 1:00:00 AM	Coolant Fluid	10.00	WRSF3	A leak occured on the coolant line of a parked haul truck (which was not in use since broken).	The contaminated snow was removed and put into the snow cell. A drip pan and spill pads were placed under the leak to catch any new dripping. The spill pads were disposed of into a Quatrex bag.
Friday, March 19, 2021 11:00:00 PM	Rock Drill Oil	25.00	KCG Heated Seacan	A bucket of rock drill oil fell and spilled on the ground.	Contaminated snow was removed and placed into the snow cell. Spill pads were used and disposed of into a Quatrex bag.

Sunday, March 21, 2021 12:30:00 AM	Diesel Fuel	10.00	6 Million Fueling Area	Diesel fuel was spilled while fueling an equipment (scoop).	The contaminated snow was removed and spill pads were used for the cleanup. Contaminated material was disposed of as hazmat.
Tuesday, March 23, 2021 7:00:00 PM	Hydraulic Oil	10.00	WRSF1	The hydraulic pan of a bus was punctured by a rock while driving and hydraulic oil leaked on the ground.	Drip pan was placed underneath the leaking oil pan. Oil in drip pan was disposed of in a used oil tote, and contaminated snow was brought to the snow cell.
Wednesday, March 24, 2021 5:00:00 AM	Hydraulic Oil	20.00	Itivia	A hydraulic oil tank of an equipment was overfilled.	Spill pads were used to clean up the spill and disposed of into a Quatrex bag.
Friday, March 26, 2021 11:30:00 PM	Hydraulic Oil	12.00	WRSF1	Hydraulic oil pan plug of a haul truck was loose.	Contaminated snow was removed and placed into the snow cell.
Sunday, March 28, 2021 11:00:00 AM	Hydraulic Oil	20.00	Construction Pad	A hydraulic hose failed while the operator was installing the forks on a loader.	The equipment was stopped and the contaminated snow was put into the snow cell.
Monday, March 29, 2021 6:30:00 AM	Power Steering Fluid	2.00	E&I Equipment Laydown	The power steering line failed on the fuel truck.	The line was repaired and contaminated snow was put into the snow cell.
Monday, March 29, 2021 11:30:00 AM	Engine Oil	2.00	Portal 1 Area	An oil hose on the injection system of an equipment got loose and leaked on the ground.	The equipment was stopped and the contaminated snow/ice (25L) was brought to Landfarm A.
Tuesday, March 30, 2021 11:30:00 AM	Engine Oil	10.00	M21-3244 Drill SH-85 #2	Petroleum product dripped from the engine door area of the drill and from the heating unit.	Spill pads were used and disposed of in Quatrex bags.
Tuesday, April 13, 2021 1:00:00 AM	Diesel Fuel		6 Million Primary Containment	Fuel spill was found in the fully lined secondary containment of a fuel tank during a weekly fuel spill inspection. No impact to the environment was caused as the fuel was contained in the containment berm, specifically designed, and approved to retain any potential leakage from the tank.	The contaminated snow was recovered and placed into the snow cell.
Monday, April 19, 2021 6:30:00 AM	Engine Oil	0.30	Drill 1 SH-102	Leak from the drill rig.	A drip pan was placed to recover the leaking oil. The contaminated snow was recovered as soon as possible and put into a Quatrex hazmat bag and in a 20 L pail.
Wednesday, April 21, 2021 12:00:00 AM	Diesel Fuel	0.50	East Side of Process Plant	Leak from the cap of a skid steer's fuel tank, which was not sealed properly. The cap had been patched with plastic and tape.	With the grader, all the contaminated material was recovered and brought to Landfarm A. The fuel cap of the skid steer was changed.
Thursday, April 22, 2021 1:00:00 PM	Diesel Fuel	50.00	6 Million Fueling Area	Fueling nozzle of the fuel truck started dripping on the ground, as the nozzle was frozen slightly open when the fuel hose was put away after use. The spill happened while	The spill was cleaned with spill pads. The pads were placed in a pail and transferred to the hazmat laydown for proper storage.

				refiling the fuel truck's tank at the 6M.	
Saturday, April 24, 2021 6:00:00 AM	Cooling Fluid	40.00	Haul Road	While traveling the excavator on the haul road, the water pump broke down and cooling fluid spilled under the excavator.	The equipment was stopped, and the water pump was replaced right away. Contaminated material (0.5 m^3) was removed from the haul road and disposed of in Landfarm A.
Saturday, April 24, 2021 2:30:00 PM	Transmission Oil	85.00	WRSF1	Transmission hose failure on a haul truck.	The equipment was stopped, and the hose was replaced. Contaminated snow was put into the snow cell and contaminated material was disposed of in Landfarm A.
Sunday, April 25, 2021 5:30:00 AM	Hydrochloric Acid	1.50	Chemical Pad	Leak from a storage sea-can.	Sea-can was brought to the mill for verification and contaminated snow was put into the snow cell.
Monday, April 26, 2021 11:00:00 AM	Cooling Fluid	10.00	OP2 Ore Stockpile	Hose failure on a haul truck.	Equipment was stopped and spill pads were used. Spill pads were disposed of in Quatrex bags at the hazmat laydown.
Monday, April 26, 2021 1:00:00 PM	Diesel Fuel	2.00	North End of Power House	Fuel dripped from an equipment during work around the power house.	Contaminated material was scraped off and disposed of in a Quatrex bag.
Saturday, May 08, 2021 12:00:00 AM	Diesel Fuel	2.00	Itivia Fuel Storage Facility Secondary Containment	A flex connector was found slightly leaking during the weekly fuel leak inspection, inside the Itivia Fuel Storage Facility Secondary Containment.	A drip pan was placed beneath the leak, the flex connector was isolated, the fuel line was drained and blind flanges were installed to avoid any future spillage.
Saturday, May 08, 2021 12:30:00 AM	Diesel Fuel	25.00	TIRI01	A return fuel line failed on a drill while drilling.	The drill was stopped immediately. Absorbent pads were used and disposed of as hazmat. The drill's fuel tank was emptied to prevent further spilling.
Thursday, May 13, 2021 5:00:00 AM	Diesel Fuel	1.50	Drill SH-19 (Haul truck parking area)	Spill occurred due to the refueling tanker's (for drill SH-19) fuel gun nozzle not being properly stored back after use. It fell to the ground, and the fuel inside of the gun nozzle was spilled.	The contaminated soil (20L pail) was removed and disposed of according to procedure.
Thursday, May 13, 2021 7:30:00 AM	Power Steering Fluid	10.00	MSB Shop Yard	The steering hose broke off on an equipment while driving.	The equipment was stopped right away. Absorbent pads were used to absorb the superficial oil. Contaminated soil was recovered and disposed of in three empty 45-gallons drums.
Saturday, May 15, 2021 4:00:00 PM	Hydraulic Oil	50.00	KCG shop yard	The oil cooler of an equipment failed.	The equipment was stopped and a drip pan was placed to capture the oil leak. Absorbent pads were used and disposed of into Quatrex bags.
Sunday, May 16, 2021 12:00:00 PM	Diesel Fuel	1.00	West side of Assay Lab	A small amount of diesel was spilled while refueling the frost fighter around the Assay Lab.	Contaminated soil (20L pail) was removed and placed into Landfarm A.
Tuesday, May 18, 2021 12:00:00 PM	Hydraulic Oil	20.00	Main Pad (row 5 and 6)	A hydraulic hose failed on the Hyster while lifting a sea can.	The equipment was stopped immediately. The contaminated soil was recovered and placed into a 45-gallon drum for disposal as hazmat.
Thursday, May 20, 2021 8:30:00 AM	Engine Coolant	6.00	MSB Parking Lot	A radiator leak occurred on a Toyota, which spilled engine coolant on the ground.	Absorbent pads and a drip pan were placed under the vehicle. Contaminated materials were disposed of as hazmat.

Thursday, May 20, 2021 11:00:00 AM	Hammer Oil	4.00	Portal 1 Intersection	A gallon of hammer oil and its spilled content were found on the side of the road near Portal 1 intersection.	Absorbent pads were used, which were disposed of in a Quatrex bag with the plastic container.
Thursday, May 20, 2021 10:30:00 PM	Hydraulic Oil	45.00	WRSF1	The hydraulic hose of the dozer failed during normal operation of the equipment.	Absorbent pads were used to clean-up the spill and disposed of into a Quatrex bag. Some contaminated soil was removed and brought to Landfarm A.
Tuesday, June 01, 2021 10:00:00 AM	Diesel Fuel	20.00	Itivia Laydown, Rankin	The dry break valve on the fuel truck failed, releasing approximately 20 liters of fuel.	The contractor (Sakku) took care of replacing the defective part and of the spill clean-up.
Sunday, June 13, 2021 9:30:00 AM	Coolant	25.00	KM16 on the AWAR	A coolant hose failed on a tractor.	The equipment was stopped, absorbent pads were used and disposed of according to procedure. Contaminated soil was removed and placed into 5 pails for disposal at Landfarm A.
Monday, June 21, 2021 5:00:00 AM	Engine Oil	0.01	Pump at Drill M21-2935	Engine oil dripped off while refueling of the pump.	Absorbent pads were used and disposed of as hazmat.
Monday, June 21, 2021 11:30:00 AM	Hydraulic Oil	3.00	West of the MSB Building	An oil leak occurred on a crane's hose.	Absorbent pads were used and contaminated soil was removed. Contaminated materials were disposed of as hazmat.
Thursday, June 24, 2021 9:00:00 AM	Petroleum products	65.00	Hazmat storage seacan, KCG yard	A leak occurred on the distribution valve of a 1000L petroleum products Tote while a worker was using the Tote to refuel.	Absorbent pads were used and disposed of as hazmat. Contaminated soil was removed and put into Landfarm A.
Monday, June 28, 2021 2:00:00 AM	Hydraulic Oil	10.00	KCG Crusher OP2	While operating the excavator that is feeding the crusher, an hose failed and some hydraulic oil was spilled on the ground.	Contaminated material was removed and brought to Landfarm A.
Tuesday, July 06, 2021 10:30:00 AM	Glycol	1.00	Batch Plant	Glycol leaked from the radiator of a truck during start-up of the equipment. The truck had not been used throughout winter.	The contaminated soil was removed and placed into a Quatrex bag. A drip pan was placed under the truck to prevent any further spillage on the ground until it could be fixed.
Wednesday, July 07, 2021 8:30:00 AM	Petroleum Products	5.00	Incinerator Hazmat Laydown	A hydrocarbon sheen on a puddle of water was noticed at the incinerator hazmat laydown. The petroleum products were leaking from a Quatrex bag, several of which were stored outside and not yet packed into seacans.	Absorbent pads were placed onto the areas with visible oil and disposed of as hazmat. The dozen or so quatrex bags sitting outside were properly labelled and packed into seacans, along with several filled totes of waste oil. The leaking quatrex bag was stored in a seacan and the pallet placed on absorbent pads and booms to contain any further leakage.
Friday, July 09, 2021 6:00:00 AM	Diesel Fuel	1.00	E&I Parking lot	Diesel fuel was spilled while fueling an equipment with the fuel truck.	Absorbent pads were used to absorb the spilled fuel and disposed of as hazmat into Quatrex bags.
Sunday, July 11, 2021 11:30:00 AM	Garage Sump Water	60.00	Emulsion Plant storage seacan	Contaminated water (60 L of sump water from the garage) was spilled when a tote was punctured with the forks of a tracked skid steer.	As the leak was slow, the damaged tote was brought into the garage to drain its content back into the sump. Absorbent pads were used and disposed of according to procedure. Contaminated soil was recovered (3 pails) and disposed of according to procedure.
Thursday, July 22, 2021 2:30:00 PM	Hydraulic Oil	25.00	Tiriganiaq Pit 01	The shaft seal of the hydraulic fan motor of cooling system on a drill ruptured, which led to the hydraulic oil spill.	The drill was stopped. Absorbent pads were used and disposed of into Quatrex bags. Contaminated soil was recovered and brought to Landfarm A.

Tuesday, July 27, 2021 4:00:00 PM	Diesel Fuel	1.00	Parking behind Warehouse	Worker noticed dripping beneath a pick-up truck, which turned out to be fuel.	Absorbent pads were placed beneath the drip. Pads were also zip tied onto the affected area and the vehicle was brought to the maintenance shop. The absorbent pads were brought to the oily solids hazmat bin, and approximately 5L of contaminated gravel was brought to the Landfarm A.
Monday, August 02, 2021 4:00:00 PM	Hydraulic Oil	20.00	TIRI01	A hydraulic hose failed on a drill in operation Tiriganiaq Open Pit 1.	The equipment was stopped. Absorbent pads were used and disposed of according to procedure.
Thursday, August 05, 2021 1:00:00 PM	Coolant	1.00	Portal 1	During an inspection, a coolant spill was found underneath a parked pick-up truck in Portal 1 area.	Contaminated material was recovered in a pail and disposed of in Landfarm A.
Friday, August 06, 2021 4:00:00 PM	Hydraulic oil	30.00	KCG Parking Area	The hydraulic system connecting a trailer to a truck failed, leading to the spill.	The truck and hydraulic system were stopped. Absorbent pads were used and disposed of according to procedure.
Saturday, August 14, 2021 11:00:00 AM	Methanol	99.00	Inside Dion Dome (Mechanical Shop)	A methanol spill occurred when a telehandler operator did not notice that the equipment's forks were improperly placed while moving a pallet with a methanol barrel on it. It should be noted that the spill occurred inside a mechanical shop dome, and that the garage grounds are protected by a polypropylene membrane to help prevent ground contamination.	Absorbent pads were used to clean-up the spill and placed into Quatrex for disposal as hazmat.
Tuesday, August 17, 2021 7:30:00 PM	Diesel Fuel	20.00	Paste Plant Parking	A fuel leak occurred on a pick-up truck in the paste plant parking lot.	Absorbent pads were used and disposed of according to procedure. A pail of contaminated material (gravel) was recovered.
Saturday, August 21, 2021 3:00:00 PM	Thinner	1.00	Seacan at the Transit Pad	Approximately 1 L of thinner was spilled while trying to pick-up a fallen pallet on top of boxes of thinner in a seacan at the transit pad. The equipment's forks caught the top corner of a box and ripped it, along with the cap of the bottle of thinner. It should be noted that the spilled occurred inside the seacan.	Absorbent pads were used to clean-up the spill and were disposed of as hazmat, along with a contaminated carboard box and plastic container.
Friday, August 27, 2021 9:30:00 AM	Hydraulic Oil	30.00	Meliadine Esker	Hydraulic oil spilled from an excavator in operation.	The equipment was stopped. Contaminated material was recovered and brought to Landfarm A.
Sunday, August 29, 2021 12:00:00 AM	Hydraulic Oil	0.10	Drill 19-0906, Landfarm B	Hydraulic line dripped oil from drill 19-0906 at Landfarm B.	The equipment was stopped. The ruptured hydraulic line was replaced. Absorbent pads were deployed to prevent further contamination and disposed of as hazmat. Contaminated material was recovered and brought to Landfarm A.

Tuesday, August 31, 2021 1:30:00 AM	Engine Oil	2.00	M2-2312 Drill#2 (SH-85)	Oil leaked from coupling point of hydraulic line. It should be noted this spill occurred inside the drill on the floor of the equipment and did not reach the ground.	The equipment was stopped. Absorbent pads were used and disposed of as hazmat.
Saturday, September 04, 2021 12:30:00 PM	Hydraulic Oil	1.00	Drill #2, near Pump Lake	Oil dropped in the pan below the pump. It should be noted that no oil dropped outside of the pan.	Absorbent pads were used to recover the oil and disposed of according to procedure.
Saturday, September 04, 2021 1:30:00 PM	Hydraulic Oil	5.00	Service Road, near the Paste Plant	A 5 L hydraulic oil spill occurred when the operator of a telehandler hit a flag metal pole on a road near the paste plant. The pole ruptured a hydraulic hose under the equipment.	Absorbent pads were used and disposed of in Quatrex bags. Contaminated soil was recovered and disposed of in the Landfarm.
Monday, September 06, 2021 3:00:00 PM	Canola Oil	60.00	Transit Pad	A telehandler operator backed up in a skid of canola oil, puncturing 3 jugs and leading to a 60 L spill of canola oil.	The equipment was stopped, and the punctured jugs were lifted to stop the leak. Contaminated soil was disposed of in the Landfarm.
Tuesday, September 07, 2021 12:30:00 PM	Waste Oil	200.00	Incinerator Oil Room	A 200 L waste oil spill occurred inside the incinerator oil room because a hose had been left in a tote, allowing the oil to flow by gravity. It should be noted the spill was contained inside the building and did not impact the surrounding environment.	The hose was removed from the tote. Absorbent pads were used and disposed of in Quatrex bags.
Saturday, September 11, 2021 4:30:00 AM	Petroleum Products	0.50	Drill SH-89	A 0.5 L petroleum products spill occurred while disconnecting a hose on a diamond drill (to change the chuck of the head rotation).	The hose was capped, and absorbent pads were used to clean-up the spill. The pads were disposed of in hazmat bags.
Wednesday, September 22, 2021 10:00:00 AM	Diesel Fuel	30.00	Orbit Heli pad	While refueling a 5,000 L fuel tank with the fuel truck, the “automatic stop” on the handle did not shut off the pump when the tank was full, and the operator was away from the handle at that time. The fuel truck operator had to hit the emergency stop button on his truck.	Absorbent pads were used and disposed of as hazmat. Contaminated soil was recovered and sent to the Landfarm.
Sunday, September 26, 2021 3:00:00 AM	Petroleum Products	10.00	Tiri01 Open Pit	A pick-up truck hit the bedrock floor and the fuel pump got damaged.	Spill pads were used and disposed of according to procedure.
Sunday, September 26, 2021 1:00:00 PM	Water and Soap	5.00	Warehouse	A 5L water and soap spill occurred when a bucket was dropped on the ground while buses were washed by the warehouse.	The contaminated soil was recovered and disposed of as hazmat.
Monday, September 27, 2021 12:00:00 PM	Diesel Fuel	1.00	E&I OPS parking lot	While fueling and equipment with the fuel truck, a small spill occurred through a failure in the hose.	Contaminated material was recovered and disposed of in Landfarm A.

Monday, October 04, 2021 9:30:00 AM	Engine Oil (0W/40)	4.00	Drill Sh-85 M21-3316	The o-ring on a hydraulic fitting on the control bank cracked, causing a leak when a clamp was used.	The drill was stopped. Absorbent pads were used and disposed of as hazmat.
Monday, October 04, 2021 1:30:00 PM	Engine Oil (0W/40)	4.00	Drill #10 (Easting-540099/Northing 6986582)	A foot clamp became loose and led to hoses pinching and rupturing.	The drill was stopped. Absorbent pads were used and disposed of as hazmat.
Friday, October 08, 2021 1:30:00 PM	Transmission Oil	20.00	OP1	A line failed on the transmission of a fuel truck.	The equipment was stopped, absorbent pads were used and disposed of as hazmat.
Saturday, October 09, 2021 11:30:00 AM	Hydraulic Oil	60.00	Automation pad beside Portal 2	A hydraulic hose failed on a haul truck.	Absorbent pads were used and disposed of according to procedure.
Wednesday, October 13, 2021 2:00:00 PM	Hydraulic Oil	65.00	West exhaust access road	Hydraulic oil leaked from the hydraulic pump compartment of an excavator due to equipment malfunction.	The equipment was stopped. A maintenance lube truck was used to empty the content of the hydraulic tank, to prevent further leakage to the ground. Absorbent pads were used and disposed of as hazmat. Contaminated material was removed and brought to Landfarm A.
Friday, October 22, 2021 3:00:00 AM	Fuel	60.00	KCG Shop Yard	A worker noticed a fuel spill under the pressure washer trailer of a generator.	The generator was stopped, and the trailer was moved to be able to scrape the contaminated material, which was brought to Landfarm A.
Monday, October 25, 2021 10:00:00 AM	Diesel Fuel	6.00	Behind the Warehouse	Fuel was leaking from underneath a Manitou during warm-up of the equipment prior to use.	The equipment was stopped, absorbent pads were used and disposed of as hazmat. The remaining contaminated material was scraped up and brought to Landfarm A.
Monday, October 25, 2021 4:00:00 PM	Diesel Fuel	30.00	3M Fuel Farm	While refueling an underground fuel truck at the 3M fuel farm, the operator over-filled the tank and fuel came out the tank breather tube.	Spill pads were deployed to collect the free diesel and disposed of as hazmat.
Sunday, October 31, 2021 1:00:00 PM	Engine Oil	2.00	North of Wing 9	An engine oil leak developed on a light tower and slowly released approximately 2 L of engine oil.	The contaminated soil was recovered and placed in a 45-gallon drum at the hazmat laydown.
Sunday, October 31, 2021 3:00:00 PM	Diesel Fuel	25.00	Water Management Shop	The fuel tank of a compressor was punctured and leaked.	The leak was controlled by putting the equipment in a containment. The contaminated material was recovered and disposed of into Landfarm A.
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.
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.
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 vaccum 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 7:30:00 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.
Friday, December 03, 2021 3:30:00 AM	Engine Oil	25.00	Dril SH-58 #7 M21-3356 (Est 540468 Nrth 6986634)	The line of a drill hydraulic pump was leaking during the restart of the drilling process after a blizzard.	The drill was immediately stopped. The spill was cleaned, and the contaminated materials were disposed of as hazmat. Because of cold conditions, the hydraulic fluid had an almost solid texture which made the recovery easier.
Saturday, December 04, 2021 4:00:00 PM	Greywater	25.00	MSB Lift Station	The discharge line of the lift station froze, which caused an overflow and led to the spill of greywater on the floor the lift station.	The vacuum truck was used to clean-up the spill on the lift station floor. Recovered greywater will be treated at the Sewage Treatment Plant as per usual practice.
Sunday, December 26, 2021 4:00:00 PM	Emulsion	250.00	Portal 1 at the Dome 3 emulsion pad	An emulsion bin was flipped over during manipulation of bins par a loader operator. It should be noted this spilled occurred on a lined pad.	The spilled emulsion was collected and recycled by Dyno; part of it was re-used in underground blasting holes.
Wednesday, December 29, 2021 1:00:00 PM	Sewage	50.00	Sewage Treatment Plant (STP)	The operator started the overflow pump, but the hose was not properly connected due to cold conditions and the freezing of the line, which led to the spill in the enclosure between 2 seacans.	Frozen contaminated material will be recovered and disposed of in the Waste Rock Storage Facility as soon as it will be accessible for equipment.
Thursday, December 30,	Glycol and Engine Oil	20.00	South road of the Main Camp	A hose on the pickup #51 broke. Glycol and engine oil was leaking.	Absorbent pads were used and disposed of as hazmat. The contaminated snow was collected and disposed of according to procedure.

2021 1:30:00 PM					
Thursday, December 30, 2021 5:30:00 PM	Treated Water	8,500.00	Under the Kitchen Main Camp	A toilet was leaking; it was only noticed when pooling water was observed at the back of the kitchen.	The toilet's valves have been closed.

SECTION 7. MONITORING

Site Sampling Stations and EEM Receiving Environment Sampling Locations are illustrated in Figure 20 and Figure 21.

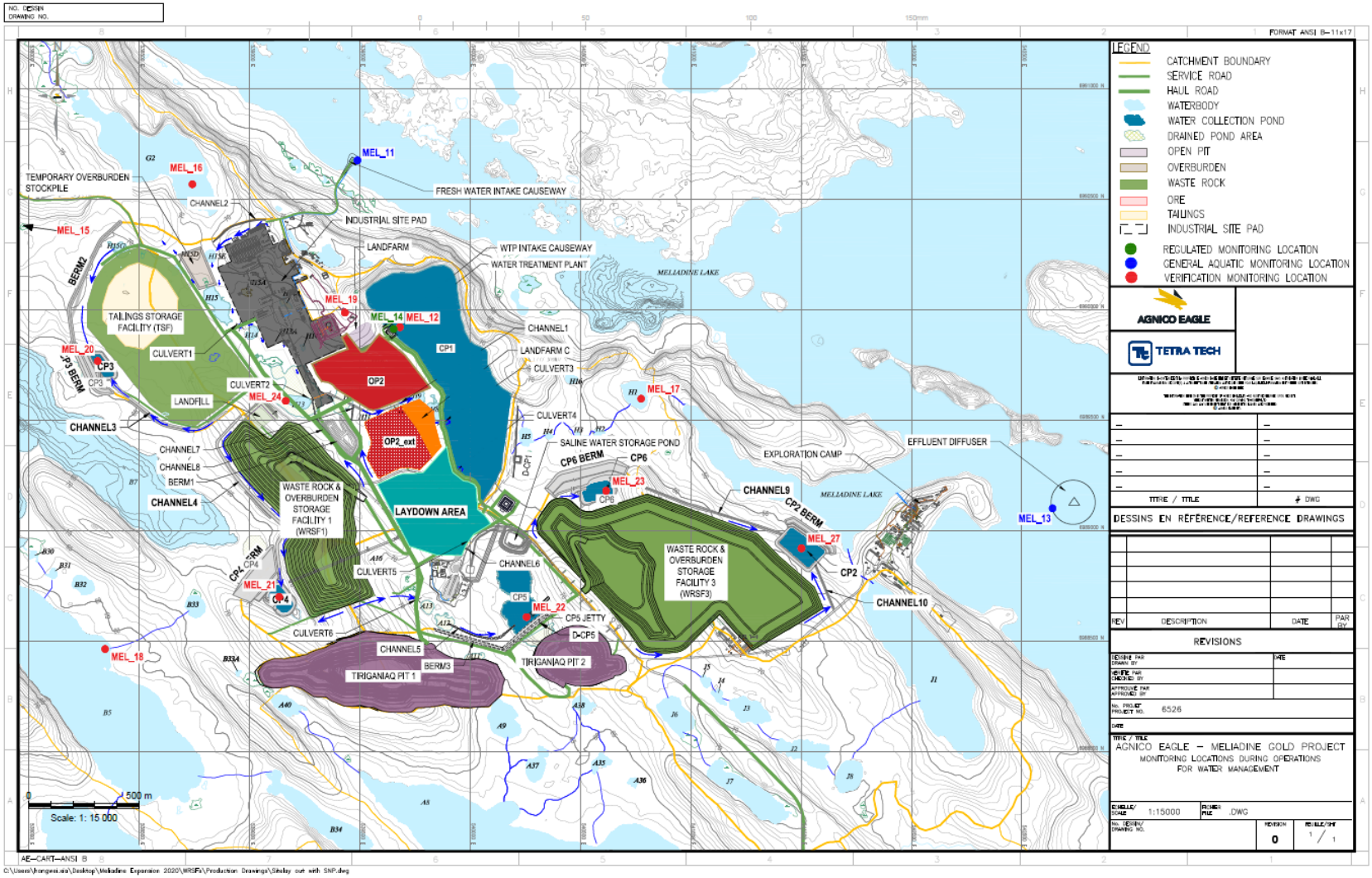

Figure 20: Meliadine Site Sampling Locations

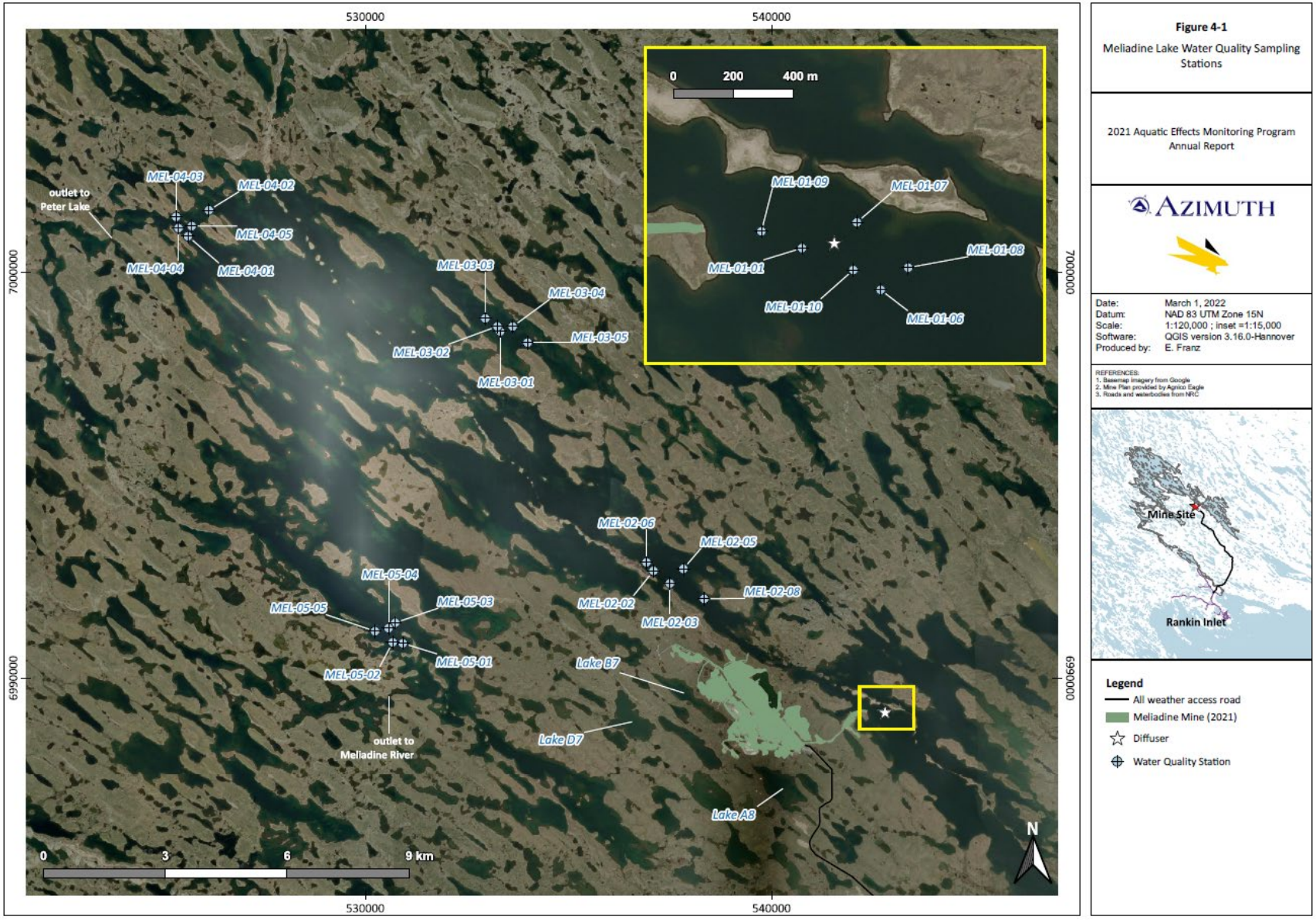

Figure 21. EEM Receiving Environment Sampling Locations

As required by Water License 2AM-MEL1631 Schedule B, Item 17: ***The results of monitoring related to the Environmental Management and Protection including:***

a. Aquatic Effects Monitoring Program;

Refer to section 7.1, all results can be found in Appendix 18.

b. Metal and Diamond Mining Effluent Regulation (MDMER) Monitoring;

Refer to section 7.2 all results can be found in Appendix 19.

c. Mine site Water quality monitoring, including groundwater monitoring; and

Refer to section 7.3, all results can be found in Appendix 19 and 20.

d. Visual AWAR Water quality monitoring

Refer to section 7.4.

and

As required by Water License 2BB-MEL1424 Part B Item 6d: ***Tabular summary of all data generated under the Monitoring Program,***

Sampling is no longer required from the Water Licence 2BB-MEL1424, explanation is provided in section 7.3.1.

7.1 AQUATIC ECOSYSTEM MONITORING PROGRAM (AEMP)

The AEMP is the monitoring program used to evaluate short-term and long-term effects of the mine on the aquatic environment. Other objectives of the AEMP include evaluating the accuracy of predictions in the FEIS and providing information to inform management decisions.

The scope of the 2021 AEMP for Meliadine Lake included water quality monitoring, a phytoplankton study, sediment chemistry and benthic invertebrate community monitoring, small-bodied fish and Lake Trout population surveys, and a fish tissue chemistry study. The scope of the Peninsula Lakes study focused on monitoring changes in water quality in Lake A8, Lake B7, and Lake D7.

Fish population and benthic invertebrate community studies conducted for the AEMP were harmonized with biological monitoring for the Cycle 2 EEM program where possible. However, the two studies have distinct requirements, and for this reason, the results are delivered in separate reports rather than in a harmonized report.

The complete AEMP report can be found in Appendix 18.

7.1.1 Effluent Quality Discharged to Meliadine Lake

The Mine discharged effluent (contact water) to Meliadine Lake from mid-July through mid-October. During this period, effluent was collected weekly and submitted for chemistry analysis. Toxicity tests were also conducted on Rainbow Trout and an aquatic invertebrate, Daphnia magna. Chemistry results were compared against limits in the Water Licence, and there were no exceedances in 2021. No effects to Rainbow Trout and Daphnia magna survival were noted in any of the weekly tests conducted in 2021.

Chronic (sublethal) toxicity tests were conducted in August and September to determine if effluent has the potential to affect growth of aquatic plants (Lemna minor), growth and survival of aquatic invertebrates (Daphnia magna and Hyalella azteca), and growth and survival of fish (Fathead Minnow). The August and September chronic toxicity tests confirmed that full-strength effluent discharged to Meliadine Lake does not affect survival and growth for fish and aquatic invertebrates. Minor effects to Lemna minor growth, as indicated by frond yield, were observed in the August and September tests. However, no effects were observed for biomass, which is a more relevant endpoint for assessing impacts to primary productivity.

Effluent was detected at concentrations above 1% throughout most of the near-field study area around the diffuser. Effluent was well-mixed in most areas as indicated by uniform conductivity readings from the surface to near the sediment. The extent of the plume extended as far as the esker to the north of the diffuser and approximately 1,300 m, to the northwest. Effluent concentrations between 2% and 3% were noted as far as 400 m to the sourtheast of the diffuser. The plume appeared to migrate in a northwest to southeast direction in a relatively confined area. Prevailing northwesterly winds in late August were likely a major factor influencing the dispersal of the plume. The normal flow for water in the east basin is from the southeast to northwest.

7.1.2 Water Quality in Meliadine Lake

Results from the 2021 AEMP confirm that the concentrations of some parameters have changed in Meliadine Lake coinciding with discharge of effluent to Meliadine Lake. The change in water quality is most evident in higher concentrations of some major ions, such as calcium, sodium, magnesium, and chloride in the east basin of Meliadine Lake. Other parameters that have increased in the east basin since the baseline and pre-construction period include arsenic, strontium, and uranium. The changes in water quality in 2021 for total dissolved solids (TDS) are well within what was predicted in the Approved Project and in the water quality model that was updated in 2020 as part of the Emergency Amendment. Furthermore, concentrations were measured at levels well below guidelines associated with adverse effects to aquatic life or health-based guidelines to protect drinking water quality.

7.1.3 Water quality in the Peninsula Lakes

Water quality monitoring at the Peninsula Lakes (Lake A8, Lake B7, and Lake D7) was completed twice in July and August to evaluate whether non-point source discharges (i.e., dust, or alteration of watersheds) is affecting water quality beyond the minor changes that were predicted in the Approved Project.

Results from 2021 indicate some parameters have increased relative to the baseline period consistent with timing and magnitude of changes predicted during the permitting phase. Importantly, the spatial extent of potential non-point source mine-related changes to water quality in lakes on the peninsula appears to be localized to the lakes near the Mine, and do not extend farther out to Lake D7. The current strategy for

water and waste management, combined with on-going efforts to control dust, will help keep water quality within the range of minor changes predicted in the FEIS.

7.1.4 Phytoplankton community

Phytoplankton, or algae, form the base of the aquatic food web, providing energy and nutrients for various aquatic invertebrates that are important sources of food for fish. A phytoplankton study is conducted annually in August at the near-field, mid-field, and reference areas to help understand if water discharged to Meliadine Lake is affecting the health of phytoplankton community.

Species richness – or the number of taxa – was within the range of results reported during the pre-construction and operations phases in the exposure and reference areas. Results from 2020 were lower across all stations, and the lake-wide increase in richness across all areas in 2021 highlights the inherent seasonal and annual variability in the phytoplankton community.

Chlorophyll-a trended higher at the near-field and mid-field exposure areas in 2021 compared to previous years. The pattern of change at MEL-01 and MEL-02 diverged from the reference areas where chlorophyll-a remained stable relative to previous years. Historically, chlorophyll-a concentrations in the near-field exposure area measured between 1 µg/L and 2.5 µg/L, whereas in 2021, concentrations were between 2.5 µg/L and 3.3 µg/L. Phytoplankton biomass was also slightly higher in the near-field area in 2021, although compared to chlorophyll-a, the year-over-year change was less evident.

The phytoplankton community in the east basin has consistently differed from other areas of Meliadine Lake dating back to the start of monitoring under the AEMP in 2015. The pattern of higher chlorophyll-a and biomass suggest the east basin may be becoming more productive over time, but whether this change is natural or related to mining activities is unclear. Discharge of effluent has resulted in higher loading for some nutrients, in particular nitrogen. However, concentrations of phosphorus and nitrogen parameters have not increased appreciably over time in the east basin. Overall, any minor change in nutrient concentrations in the near-field area aligns with predicted changes in the Water Licence Application that stated nutrient concentrations would increase relative to baseline, but there would be no adverse effects on aquatic life.

7.1.5 Benthic Invertebrate Community

Benthic invertebrates serve several important ecosystem functions and are an important food source for fish. Benthic macroinvertebrates provide insight into changes in water and sediment quality given their life history. Characterizing the benthic invertebrate community provides insight into the health of the lake ecosystem. Benthic invertebrate community and supporting sediment chemistry sampling was conducted at the two exposure areas (MEL-01 and MEL-02) and reference areas MEL-03 and MEL-05.

Sediment Chemistry

Sediment was collected to characterize the physical habitat and concentrations of metals in each area. Habitat characteristics such as water depth, grain size, and organic carbon influence the composition and abundance of the benthic invertebrate community. Sampling locations were established in areas that had similar habitat characteristics to avoid the confounding effect of grain size and total organic carbon (TOC)

when assessing differences in the benthic invertebrate communities among the exposure and reference areas.

Concentrations of arsenic, manganese, and strontium were higher in sediment collected in the east basin in 2021 compared to 2018. All three parameters are present in effluent discharged to Meliadine Lake. However, it is unclear if the increase is temporal (related to the mine) or spatial (indicative of natural variability). Concentrations of some metals in sediment – arsenic and manganese in particular – can vary significantly over small distances in lakes located in mineralized areas. For example, the highest measured concentration of arsenic in the east basin was 150 mg/kg in a sample collected in 2016. Another sample, collected in the east basin during the same sampling event had a 5-fold lower concentration of arsenic (30 mg/kg). Based on the available data, there is plausible evidence that concentrations of these three metals have increased slightly over time, although the magnitude of the change does not pose a risk to the health of the benthic invertebrate community.

Benthic Invertebrate Community

The 2021 sampling program found that the density of benthic invertebrates was higher at all locations sampled in Meliadine Lake relative to previous sampling years, and that most of the increase in total density was due to an increase in the density of chironomid (non-biting midge). The next most abundant taxa have been Mollusca (clams), particularly genera of the family Sphaeriidae (fingernail clams). Oligochaete worms and gastropods (snails) are also relatively common in the lake sediments.

The increase in invertebrate density was observed both in areas near the Mine and in reference areas and is unlikely to be related to effluent discharged to Meliadine Lake. The structure of the benthic invertebrate communities was similar in both reference and exposure areas and were typical of northern lakes. In summary, there was no evidence to suggest discharge of effluent to Meliadine Lake is adversely affecting the structure of the benthic invertebrate community in the east basin. Routine monitoring is scheduled for 2024 on the existing 3-year cycle.

7.1.6 Threespine Stickleback

Threespine Stickleback was the small-bodied sentinel fish species used for the AEMP as well as the Cycle 2 EEM study. Unlike Lake Trout that migrate throughout the entire lake, Threespine Stickleback have a small home range, which makes them well-suited for monitoring the health of fish exposed to effluent discharged to the east basin of Meliadine Lake. Threespine Stickleback were collected from the near-field exposure area (< 200 m from the diffuser) and reference areas MEL-03 and MEL-04.

Health Assessment

Measurements were collected from each fish (e.g., total length, total weight, liver weight, age). These measurements were compared among areas to determine if the health of the Threespine Stickleback population in the east basin is impacted by exposure to effluent discharged to Meliadine Lake. Mature females from the exposure area were very similar to mature females from the two reference areas. Mature males from the exposure area were older, larger, and heavier than the mature males collected at the two

other reference locations. The condition of the male fish at the exposure area was similar to the condition of fish from the reference areas. Condition is a measure of energy use that describes the weight of a fish relative to its length. Similar condition in Threespine Stickleback from exposure and reference areas provides direct evidence that changes in primary productivity in the east basin, if they are occurring, are not resulting in effects to Threespine Stickleback energy use.

The health of Threespine Stickleback in Meliadine Lake will continue to be monitored every three years coinciding with the EEM program. Recommendations to improve the AEMP study design for Threespine Stickleback will be developed after completion of the Cycle 2 interpretive report.

Chemistry

Tissue chemistry sampling of Threespine Stickleback was conducted in 2021 at the near-field (NF) area (MEL-01) and two far-field areas (MEL-03 and MEL-04). Threespine Stickleback were included in the study design for fish tissue chemistry to determine if mining activity is affecting bioaccumulation of metals into local fish populations. Historical data were collected in 2015 from the NF exposure area (MEL-01). References areas MEL-03 and MEL-04 were sampled in 2017. Tissue chemistry was analyzed for spatial differences between MEL-01 and the reference areas in 2021. Temporal changes in tissue metals concentrations were evaluated by comparing baseline chemistry results from MEL-01 in 2015 with results from MEL-01 in 2021. Higher concentrations of calcium, arsenic, manganese, strontium, and uranium were observed in Threespine Stickleback from MEL-01 in 2021 compared to the reference areas and compared to baseline tissue chemistry results from 2015. These parameters are constituents present in water discharged from CP1 to Meliadine Lake. However, the observed change in tissue chemistry for arsenic, strontium, and uranium may be partly related to natural changes in water quality over time at MEL-01.

These changes in tissue chemistry do not appear to be causing any adverse effects to the Threespine Stickleback. The detailed health assessment conducted in 2021 found no consistent adverse effects at MEL-01 relative to MEL-03 and MEL-04. Further, the main differences identified were higher survival and growth of males at MEL-01. Thus, while changes in tissue concentrations consistent with mining activity have been observed, these changes do not appear to be causing any adverse effects to the population of Threespine Stickleback living in the east basin of Meliadine Lake, near the Mine.

The program is clearly sufficiently robust to detect changes/differences in tissue chemistry over time and space. Given the lack of any adverse health effects to the local Threespine Stickleback population, the timing of the next study is scheduled for 2024.

7.1.7 Lake Trout

Health Assessment

Lake Trout were collected from the exposure area near the effluent diffuser in Meliadine Lake in 2015, prior to mine operations, and again in 2021, during operations. Measurements were collected from each fish for fork length, total weight, liver weight, and age. These measurements were compared between years to see if effluent was affecting the health of Lake Trout in Meliadine Lake. Lake Trout captured in 2021 were older,

larger, and heavier than those captured in 2015, although these differences may be a result of different types of fishing gear used between years. In 2021 Lake Trout also had higher condition, relative liver size, and relative gonad size (males only) compared to 2015, which indicates greater energy storage, and suggests greater availability, and/or quality of food for Lake Trout in Meliadine Lake in 2021 compared to 2015. The Lake Trout date from Meliadine Lake will be compared to two external reference lakes as part of the Cycle 2 EEM. The external reference area comparison will help determine if the increases in energy storage over time are unique to Meliadine Lake.

Chemistry

Samples of liver, kidney, and muscle tissue were submitted for metals analysis from 42 Lake Trout captured during the fish population survey in Meliadine Lake in 2021. Chemistry results from 2021 were compared against chemistry data from the baseline period in 1997/1998 and 2015 to determine if Lake Trout are accumulating metals present in effluent discharged to Meliadine Lake.

Sodium was the only parameter that was detected at higher concentrations in Lake Trout muscle, liver, and kidney in 2021 compared to Lake Trout from the baseline period – 1997/98 and 2015. Sodium is an essential mineral, and together with potassium, helps maintain a healthy ion balance. Sodium uptake is actively regulated at the gill to prevent net loss of sodium from the fish to the surrounding low TDS environment. From a fish health perspective, the apparent increase in sodium does not appear to be causing any adverse effects to fish condition, as noted in the health assessment. Lake Trout from two reference lakes were submitted for analysis as part of a regional assessment of Lake Trout tissue chemistry. Those data may be incorporated into the next study on changes in tissue chemistry in Lake Trout from Meliadine Lake tentatively planned for 2024.

7.2 MDMER AND EEM SAMPLING

This section relates to the monitoring programs conducted under the Metal and Diamond Mining Effluent Regulations (MDMER) and its Environmental Effects Monitoring (EEM) Studies. Reporting requirements for MDMER have been submitted directly to Environment and Climate Change Canada; list of the sampling location GPS coordinates can be found in Table 19.

Table 19. MDMER and EEM GPS coordinates

Station ID	GPS coordinates
MEL-14 (Effluent characterization)	63˚2'15.5"N 92˚13'06.3"W
MEL-13 (Water Quality Monitoring Exposure Area)	63˚01'44.6"N 92˚09'14.6"W
MEL-03-01 (Water Quality Monitoring Reference Area)	63˚06'52.2"N 92˚20'23.6"W
MEL-26	62˚48'01.99"N 92˚06'00.05"W
MWE-1/WC (Water Quality Monitoring Exposure Area)	62°47'49,24"N 92°05'52,97"W
MWREFA-2	62°46'55,38"N 92°07'0,43"W

In 2021, discharge of treated effluent from CP1 to Meliadine Lake started July 13th and ended October 16th. Discharge to Meliadine Lake was interrupted on August 8th and 9th.The Melvin Bay final discharge point

(MEL-26) was in operation between August 12th and October 5th, during which it was temporarily stopped twice : between August 13th to 14th and on August 19th.

As requested in Schedule 6 of the Metal and Diamond Mining Effluent Regulations, monthly mean concentrations, pH range and volume of effluent (generated) were submitted directly to ECCC and can be shared upon request.

7.3 MINE SITE WATER QUALITY

As required by Water Licence 2AM-MEL1631 Schedule B-16: ***The results and interpretation of the Monitoring Program in accordance with Part D, Part I and Schedule I.***

7.3.1 *Licenced Water Sampling Stations*

Below is a short description of each of the monitoring stations from the Water Licences 2AM-MEL1631 and 2BB-MEL-1424. All water sampling results can be found in Appendix 19. Also, for stations regulated by MDMER or Water Licence limits, graphs with critical parameters are presented.

7.3.1.1 *MEL-1 Raw water supply intake at Meliadine Lake*

MEL-1 is the raw water supply intake at Meliadine Lake for the exploration camp. No sampling is required, only volume records as provided in section 3.1.1.

7.3.1.2 *MEL-2 Raw water supply intake at Pump, A8 or other Lakes*

MEL-2 is the raw water supply intake at A8 or other lakes. No sampling is required, only volume records as provided in section 3.1.1.

7.3.1.3 *MEL-5 Bermed Fuel Containment Facilities*

MEL-5 was the point of discharge for the bermed fuel containment facilities for the exploration camp. Since it was decommissioned, sampling is not required any longer.

7.3.1.4 *MEL-6 Landfarm Treatment Facility*

MEL-6 is the effluent from the Landfarm B Treatment Facility prior to release. The landfarm is not decommissioned yet but no water was released since 2016 as the water is transferred to the Landfarm A oil separator system and treated before being discharged in CP-1.

7.3.1.5 *MEL-7 Effluent from Exploration camp STP*

MEL-7 is the final effluent discharge from the biodisk and the bionest at the exploration camp. Since November 2017, the treated water from the exploration STP is trucked to CP1 or to the Main Camp STP depending on recent water quality trends. Monitoring for this station still occurs to ensure the efficiency of the treatment system but discharge directly to Meliadine Lake no longer occurs.

7.3.1.6 *MEL-8 Point of discharge or runoff from the Non-Hazardous Waste Landfill*

MEL-8 was the point of discharge from the non-hazardous waste landfill for the exploration camp. Since it was decommissioned, sampling is not required anymore.

7.3.1.7 *MEL-SR-1-TBD*

MEL-SR-TBD are surface runoff sampling points pertaining to runoff downstream of construction areas at Meliadine Site and Itivia Site, seeps in contact with roads, earthworks and any runoff and/or discharge from borrow pits and quarries. These are regulated monitoring stations in the Water Licence which includes discharge limits that must be achieved to maintain compliance. Results are presented in Figure 22.

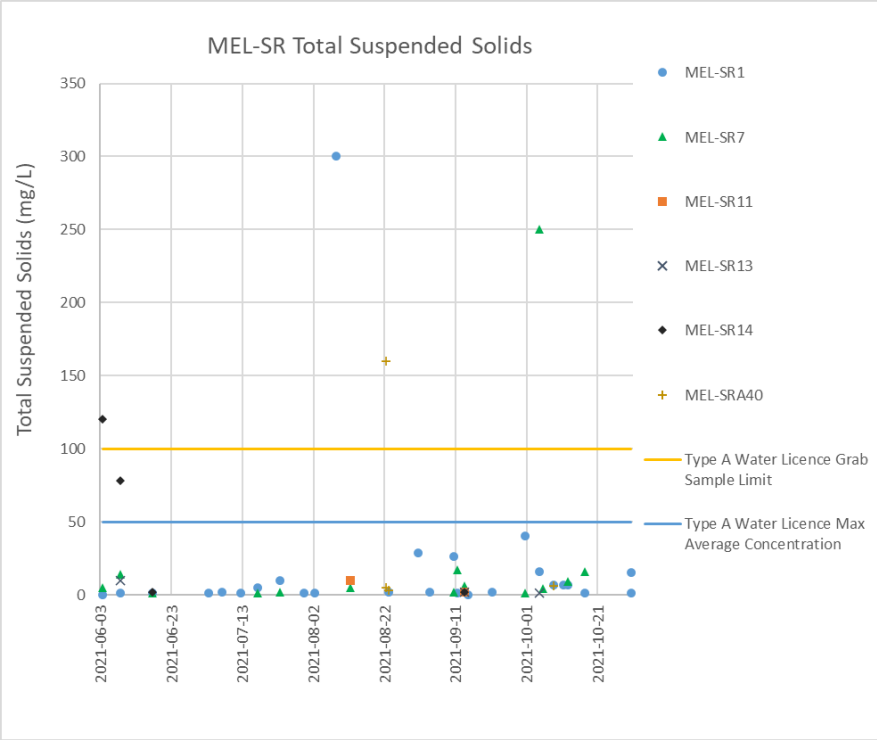

Figure 22. Total Suspended Solids (TSS) results for MEL-SR samples

A total of 4 TSS exceedances occurred in 2021 at stations MEL-SR14 MEL-SR1, MEL-SRA40 and MEL-SR7. Below follows a brief description of the event and the mitigating actions taken to prevent further exceedances at each location, the complete follow-up reports can be found in Appendix 16.

On June 3rd, during a routine inspection, surface runoff water was observed at compliance station MEL-SR14 and sampling was conducted. The Environmental Technician reported that:

- The water flowing at MEL-SR14 did not appear to be turbid, it was very clear;
- Very little TSS was observed in the water (sand or clay particles);
- Minimal flow was present, and as such submerging the sample bottle in the runoff flow brought it I very close to the soil; and
- With the shallow flow and the size of the bottle used to collect the sample, it is possible that during sampling the bottle disturbed sediments below the flow, capturing them in the bottle.

A review of the sampling procedure was completed with the entire crew to enforce correct sampling procedures and to raise awareness of SR sampling requirements.

On August 12th, during a routine inspection after a heavy rainfall, surface runoff water was observed at sampling station MEL-SR1. Samples of the runoff were collected at MEL-SR1 and at a location upstream of this designated MEL-SR1-US. The samples were then sent for routine external analysis at an accredited laboratory. On receipt of the results it was determined that the results were not within compliance. It should be noted that the water coming from Rankin Inlet was at 1000mg/L at MEL-SR1-US and 300mg/L at MEL-SR1 indicating there was a component of water from Rankin Inlet that contributed to the exceedance.

On receipt of the results, work was done on MEL-SR1 to rehabilitate and replace some existing sediment control measures such as straw and wood-chip logs. In October, two checks dams were constructed upstream of MEL-SR1. The dams were installed along the flow path originating from the east side of the MEL-SR1 culvert to reduce the velocity of runoff entering the area. Freeze up occurred shortly after completion of the check dams and as such the effectiveness of the new check dams are still being assessed.

On August 22nd the Environment Department was notified of an unapproved trench that had been cut within the overburden excavation zone of the Tiri-01 open pit footprint. The trench was cut to divert water, accumulated after heavy rainfall, away from the excavation zone. The turbid water flowed down hill and accumulated along the access road which lies in the final footprint of Tiri-01 open pit. A plume of turbid water began flowing downstream in pond A40, before mitigation measures were able to be deployed.

Immediate corrective actions were the deployment of wood chip logs and silt curtains to prevent sediment from proceeding any further downstream. Measures were put in place to capture the water upstream of A40 to manage it within the existing water management infrastructure. Following this event, an internal Environmental Permit was created, requiring other departments to assess potential impacts to valued environmental components before commencing a project. The criteria for a project requiring an Environmental Permit is generally aligned to the criteria requiring a Management of Change (MOC). This corrective action is intendent to prevent any other major infrastructure construction impacts by brining all concerned stakeholders together to discuss risks to the environment before the construction begins.

On October 4th, during a heavy rainfall event it was observed that water was flowing at both MEL-SR7 and MEL-SR1. Surface runoff passes through MEL-SR7 on its way to MEL-SR1 and as such sampling was completed at both locations. After the receipt of the lab results, MEL-SR7 had a concentration of 250mg/l while MEL-SR1 had a concentration of 40mg/l. As due diligence, Agnico reported the incident, even though MEL-7 sampling station is not a discharge to the environment but an internal monitoring station. The sediment reduction infrastructure between MEL-SR7 and MEL-SR1 was effective at reducing TSS concentration. As with the other sites, this site continues to be monitored closely.

7.3.1.8 ***MEL-11 Water Intake***

MEL-11 is the water intake from Meliadine Lake. It is an aquatic monitoring location which is subject to compliance assessment to confirm that sampling is carried out using established protocols, including quality assurance/quality control provisions, and addresses identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licencee, subject to approval by the NWB.

7.3.1.9 ***MEL-12 Water treatment plant (Pre-treatment)***

MEL-12 represents pre-treatment CP1 water located at the Effluent Water Treatment Plant in the Water Treatment Complex (EWTP-WTC). The sample is collected from an inlet pipe within the plant and is not

collected directly from the CP1. It is a verification monitoring program, which is to be carried out for operational and management purposes by the Licencee. Monitoring parameters and locations are internal for Licence.

7.3.1.10 ***MEL-03-01 Reference area in Meliadine Lake (MDMER reference station)***

MEL-03-01 is sampled in Meliadine Lake. It is also the MDMER reference station for final discharge. It is a general aquatic monitoring location which is subject to compliance assessment to confirm sampling is carried out using established protocols, including quality assurance/quality control provisions, and addresses identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licencee, subject to approval by the NWB. In 2021, all Total Suspended Solids (TSS) sample results were at or below 1 mg/L, and all Total Dissolved Solids (TDS) sample results were at or below 45 mg/L, with an average of approximately 31 mg/L. TSS and TDS results from sampling at this monitoring station in 2021 are presented in Figure 23 and Figure 24, respectively.

7.3.1.11 ***MEL-13 Mixing Zone in Meliadine Lake (MDMER exposure station)***

MEL-13 is sampled in the mixing zone in Meliadine Lake. It is also the MDMER exposure station for final discharge. It is a general aquatic monitoring location which is subject to compliance assessment to confirm sampling is carried out using established protocols, including quality assurance/quality control provisions, and addresses identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licencee, subject to approval by the NWB. In 2021, all Total Suspended Solids (TSS) sample results were at or below 2 mg/L, and all Total Dissolved Solids (TDS) sample results were at or below 160 mg/L, with an average of approximately 72 mg/L. TSS and TDS results from sampling at this monitoring station in 2021 are presented in Figure 23 and Figure 24, respectively.

7.3.1.12 ***MEL-14 Water treatment plant (Post-treatment)***

MEL-14 is the final discharge point (FDP) monitoring station and is sampled in the Effluent Water Treatment Plant of the Water Treatment Complex (EWTP-WTC) prior to the water being discharged to the environment. It is a regulated monitoring station in the Water Licence and in the MDMER regulation. It includes discharge limits that must be achieved to maintain compliance. The TDS Maximum Average Concentration (MAC) and Maximum Grab Concentration (MGC) were raised to 3500 mg/L and 4500mg/L, respectively, for the MEL-14 station as part of the Amendment to the Water Licence (NWB 2021).

In 2021, TSS results for MEL-14 did not show any particular trend, with no significant increase or decrease of concentration. The yearly average concentration was 3.2 mg/L and the highest result was 5 mg/L. No exceedance occurred in 2021 for this parameter with all grab sample and average concentrations within permitted limits (30 and 15 mg/L, respectively). TSS results from sampling at monitoring station MEL-14 in 2021 are presented in Figure 23.

With regards to TDS (calculated), all MEL-14 samples were compliant with the 3,500 mg/L maximum average calculated TDS concentration and 4,500 mg/L maximum grab calculated TDS concentration from the Amended Type A Water Licence. The average calculated TDS concentration at MEL-14 in 2021 was 1,494 mg/L and the highest measured calculated TDS concentration was 2,000 mg/L. TDS results from sampling at monitoring station MEL-14 in 2021 are presented in Figure 24. A discussion pertaining to the TDS loading sources on site can be found in section 3.1.7.

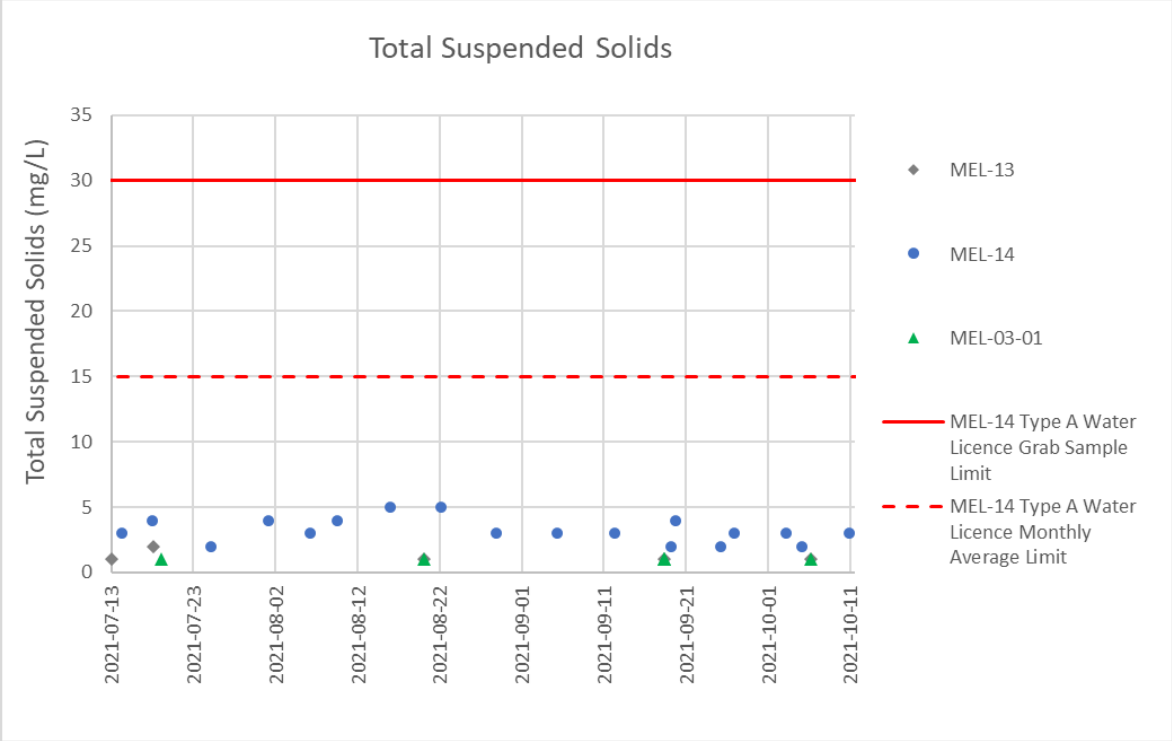

Figure 23. Total Suspended Solids (TSS) results for MEL-03-01, MEL-13, and MEL-14 monitoring stations.

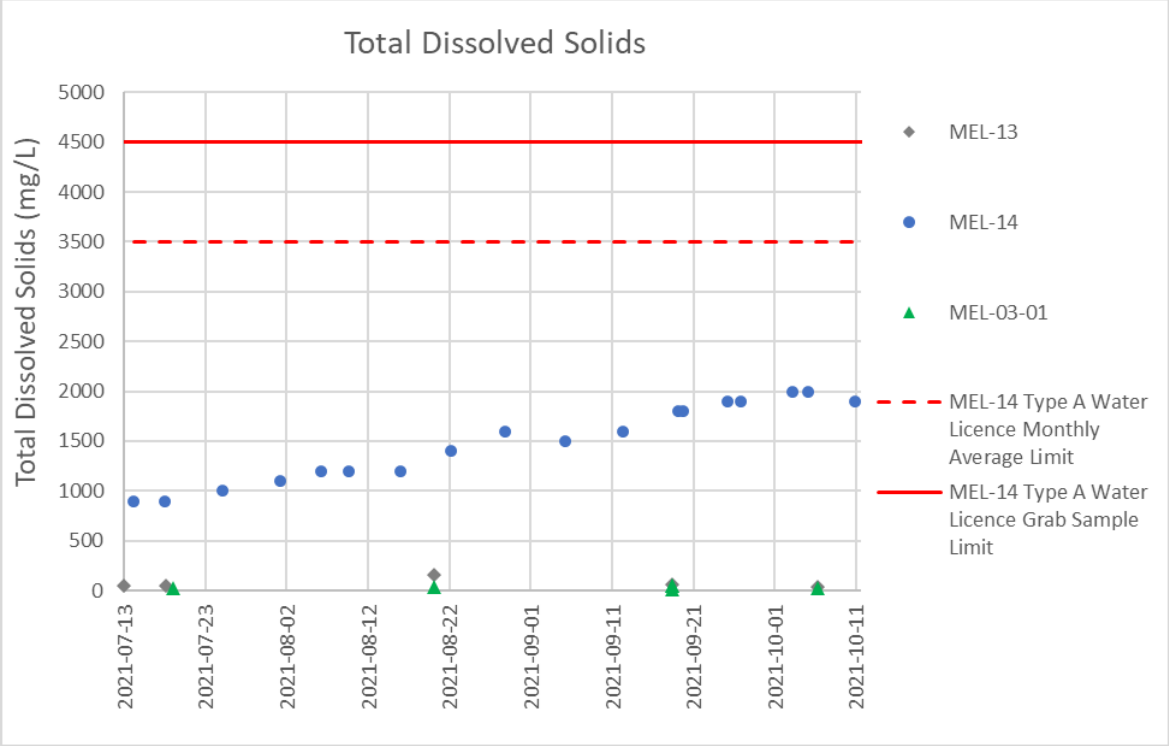

Figure 24. Total Dissolved Solids (TSS) results for MEL-03-01, MEL-13, and MEL-14 monitoring stations.

7.3.1.13 ***MEL-15 Local Lake E3***

MEL-15 is sampled in lake E3 located west of the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licencee.

7.3.1.14 ***MEL-16 Local Lake G2***

MEL-16 is sampled in lake G2 located north west from the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licencee.

7.3.1.15 ***MEL-17 Local Pond H1***

MEL-17 is sampled in lake H1 located east from the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licencee.

7.3.1.16 ***MEL-18 Local Lake B5***

MEL-18 is sampled in lake B5 located south-west from the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licencee.

7.3.1.17 ***MEL-19 CP2***

MEL-19 was a collection (or containment) pond identified as CP2 in the 2015 Water Management Plan and in the 2016 pre-Amended Type A Water Licence. This was planned as a small pond for the collection of the natural catchment drainage from the outer berm slopes of the Landfarm and industrial pad. However, CP2 was not required under the actual construction of the site and resulting runoff pathways and accumulation areas. In the amended Water Licence MEL-19 is identified as CP2 and serves as a collection pond for drainage from Waste Rock Storage Facility 3 (WRSF3). Construction of CP2 is scheduled for Q1 2022 and sampling at MEL-19 will commence during the 2022 open water season at the frequency specified in the Licence.

7.3.1.18 ***MEL-20 CP3***

MEL-20 is sampled in CP3 (collection pond) which is the collection of drainage from the Tailings Storage Facility (TSF; dry stack tailings) located west of the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licence.

7.3.1.19 ***MEL-21 CP4***

MEL-21 is sampled in CP4 (collection pond) which is the collection of the drainage from the Waste Rock Storage Facility (WRSF1) located west of the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licence.

7.3.1.20 ***MEL-22 CP5***

MEL-22 is sampled in CP5 (collection pond) which collects the drainage from WRSF1 and the Portal 1 area. CP-5 is located in the previous footprint of Lake A54 and is located south of the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licence.

7.3.1.21 ***MEL-23 CP6***

MEL-23 is sampled in CP6 (collection pond) which collects the drainage from WRSF3 located east of the mine site. It is a verification monitoring location which is sampled for operational and management purposes by Licencee.

7.3.1.22 ***MEL-24 Seepage from the landfill***

MEL-24 is seepage from the landfill between the landfill and Pond H3. The natural depression at this location can also drain water not related to seepage from the landfill. It is a verification monitoring location which is sampled for operational and management purposes by Licence.

7.3.1.23 ***MEL-25 Secondary Containment at the Itivia Fuel Storage Facility***

MEL-25 is sampled from the secondary containment area at the Itivia Site Fuel Storage and Containment Facility. It is a regulated monitoring station in the Water Licence. It includes discharge limits that must be achieved to maintain compliance.

Four notices for discharge from MEL-25 were sent in 2021 to the appropriate regulatory bodies. The dates discharge occurred and the amounts discharged are presented in Table 20.

Table 20: Dates of discharge and discharged volume from monitoring station MEL-25 to tundra.

Date of Discharge	Volume (m^3)
June 20th to June 21st	5250
August 3rd	440
September 5th to September 10th	390
October 22nd	450

Approximately 6530 m^3 was discharged over the open water season within compliance and in accordance of the Type A Water licence.

7.3.1.24 ***MEL-26 Melvin Bay Final Discharge Point***

MEL-26 is sampled at the Melvin Bay final discharge point (FDP; end of pipe before offsite release) for treated saline effluent. It is a regulated monitoring station under MDMER. It includes discharge limits that must be achieved to maintain compliance. Figure 25 below shows the TSS concentrations as a critical parameter for samples collected at monitoring station MEL-26 in 2021.

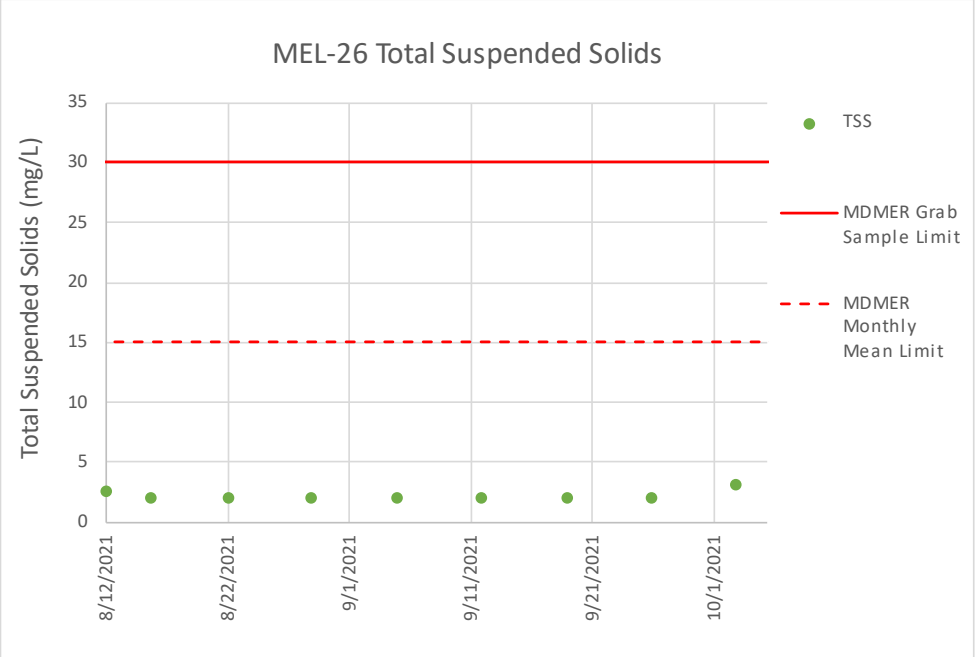

Figure 25. TSS results for MEL-26 samples collected throughout the 2021 discharge period.

In 2021, no TSS exceedances occurred during the discharge season. All samples respected the maximum authorized concentrations of prescribed deleterious substances by the MDMER.

7.3.2 *Underground sampling*

Water samples collected in the underground mine over 2021 include diamond drill hole (DDH) water intersects and underground saline contact water.

DDH water intersects are flushed prior to sample collection as a means to provide representation of "non-contact" groundwater within the fractured rock surrounding the underground mine. DDH water samples were collected as water was intersected (15 total samples over 2021) and analyzed for relevant parameters to provide a representation of the background connate groundwater quality, which is the primary contributor of saline water received by the underground mine.

Water quality results for DDH samples collected in 2021 are provided in Appendix 20. In general, results for the 14 samples indicate stable and consistent concentrations for most parameters. Results showed an average TDS concentration of 53,200 mg/L, with values ranging from 49,100 mg/L to 57,800 mg/L. This represents a decrease of 3% compared year-over-year to the average TDS from samples collected in 2020. The 2021 average is 8% lower when compared to the 2019 average, but only 3% lower when compared to the 2018 average.

All metals listed under MDMER Schedule 4 (arsenic (As), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn)) remain below the MDMER limits. In fact, concentrations for MDMER Schedule 4 total metals (As, Cu, Pb, Ni, Zn) are mostly below the laboratory detection limits for the 2021 DDH water intersect samples. Few samples showed total metal concentrations equal to or slightly above the laboratory detection limits.

Underground contact water samples were collected monthly for water quality analysis from a port located in-line with a suspended sediment treatment system located on level 300, prior to clarification treatment and redistribution. This sampling point is a combination of sump (contact) water originating from the various levels of the mine, including groundwater, make-up water, drilling water, and paste line flushing water. Further information about the groundwater quality monitoring program is available in Section 4.1.2 of the Groundwater Management Plan.

Underground contact water and non-contact groundwater sampling is a verification monitoring program carried out for operational and management purposes by the Licencee.

7.3.3 *QA/QC Sampling*

The objective of quality assurance and quality control (QA/QC) is to assure that the chemical data collected are representative of the material being sampled, are of known quality, are properly documented, and are scientifically defensible. Data quality was assured throughout the collection and analysis of samples using specified standardized procedures, by the employment of external Canadian Association of Laboratory Accreditation (CALA) laboratories, and by staffing the program with experienced technicians.

All analytical chemistry analyses are performed by an external CALA accredited laboratories. In most cases, these analyses are performed by Bureau Veritas (BV) Laboratories, an accredited facility located in Ottawa, Ontario. Agnico Eagle may also require the services of other laboratories, such as BV Laboratories in Edmonton (Alberta), ALS (BC), SGS in Lakefield (Ontario) and H2Lab in Val d'Or (Quebec). All data from these labs undergoes a rigorous internal QA/QC process, including the use of duplicate samples.

Sublethal toxicity tests were performed by AquaTox Testing & Consulting Inc. and Bureau Veritas Laboratories. Testing was conducted as stipulated in the corresponding Environment Canada Biological Test Methods. QA/QC measures implemented by the laboratory, including the use of reference toxicants. All tests met the acceptable limits, at the exception of one Daphnia magna test data, for which it was determined that the laboratory (negative) controls did not meet the test validity criteria for reproduction. Specifically, the test method states a test is considered unacceptable if the surviving Daphnids in the laboratory control do not produce, on average, at least 60 young in the 21 days. Since the test organisms did not meet the threshold for acceptable reproduction in the laboratory controls, the test was considered invalid and the data not reported.

Field blanks and field duplicates were collected in 2021 as part of the internal quality control procedures. A field blank is a sample prepared in the field using laboratory-provided deionized water to fill a set of sample containers, which is then submitted to the laboratory for the same analysis as the field water samples. Field blanks are used to detect potential sample contamination during collection, shipping and analysis. Duplicate field water quality samples are collected simultaneously in the field at the same sampling location and using identical sampling procedures. They are used to assess sampling variability and sample homogeneity. In 2021:

- MDMER and EEM monitoring programs consisted of: 7 duplicate samples and 7 field blanks which were collected from a total of 46 samples, representing 17.5% of samples taken;
- STP monitoring program consisted of: 3 duplicate samples and field blanks which were collected from a total of 19 sampling events, representing 15.7% of samples taken; and

- Surface water monitoring programs consisted of: 16 duplicate samples, 16 field blanks which were collected from a total of 133 samples, representing 12.0 % of samples taken.

Overall, collected and analyzed duplicate samples represent 13% of the field samples collected throughout 2021, which is higher than the QA/QC duplicate program objective of 10%.

Analytical precision is a measurement of the variability associated with duplicate analysis of the same sample in the laboratory. Duplicate results were interpreted using the relative percent difference (RPD) between measurements. The equation used to calculate the RPD is:

$$RPD\ (\%) = \frac{(A - B)}{(A + B)/2} \times 100$$

Where A is the field sample concentration, and B is the duplicate sample concentration.

Large variations in RPD values are often observed between duplicate samples when the concentrations of analytes are low and approaching the method detection limit. Consequently, a RPD equal to or higher than 20% for concentrations of field and duplicates samples that both exceed 10 times the method detection limit (MDL) is considered notable. The analytical precision of one QA/QC sampling event is characterized as:

- High, when less than 10% of the parameters have variations that are notable;
- Medium, when 10 to 30% of the parameters have variations that are notable;
- Low, when more than 30% of the parameters have variations that are notable.

Results of the QA/QC data (RPD calculations) are presented in the tables included in Appendix 19 for the MDMER and EEM, STP and Surface Water monitoring programs. The following is a brief summary of the QA/QC results, per sampling program:

- MDMER and EEM: All duplicate samples collected were considered as having high analytical precision. Some duplicate samples collected at stations MEL-26 (1 duplicate), MEL-03-01 (1 duplicate) and MWE-1 (1 duplicate) showed notable RPD values for less than 10% of analyzed parameters.
- STP: The three duplicate samples collected were considered as having a high analytical precision. Two duplicate samples showed a notable RPD value, representing less than 10% of analyzed parameters.
- Surface Water: All duplicate samples collected were considered as having high analytical precision. Duplicates collected at stations MEL-12, MEL-16, MEL-17, MEL-21 and MEL-23 showed notable RPD values, for less than 10% of analyzed parameters.

Results show that the QA/QC plan was followed and samples were collected by qualified technicians. QA/QC methods are further discussed in the Quality Assurance/Quality Control Plan.

Temperature, pH, dissolved oxygen, turbidity and specific conductivity are measured in the field using hand held meters such as HACH test kit – 2100 Q Portal Turbidimeter (turbidity), YSI (pH, dissolved oxygen, temperature and conductivity) and Eureka Manta II (pH, dissolved oxygen and conductivity). The instruments are calibrated before each sample event to ensure optimal performance and record of the

calibration are kept in a calibration log. The calibration data regarding these instruments is presented in Appendix 21.

QA/QC methods and results for specific field programs (i.e., AEMP, geochemical monitoring) are discussed separately in their respective reports.

7.3 SEEPAGE

As required by Water Licence 2AM-MEL1631 Schedule B, Item 11*:* Summary of quantities and analysis of Seepage and runoff monitoring from the Landfill, Landfarm, Waste Rock Storage Facilities, Borrow pits and Quarries.

In 2021, no seepage was observed from the landfill or the landfarm, no seepage was observed from borrow pits or quarries.

7.4 VISUAL AWAR WATER QUALITY MONITORING

Pre-freshet and freshet inspections were conducted at Itivia, crossings along the AWAR and the Bypass Road in 2021. These inspections are conducted to monitor for and document potential hazards such as blockages impeding free flow of water resulting in ponding, washing out of roads and unintentional rerouting of flow, detecting the presence/absence of flow, erosional concerns and turbidity plumes. Inspections were weekly at minimum over freshet. During inspections, areas for concern were noted and corrected appropriately (i.e., straw log deployment, notifying the Energy & Infrastructure (E&I) Department for maintenance requirements). A total of 6 Itivia inspections were carried out prior to and during freshet 2021, between May 12th and June 19th . A total of 7 All Weather Access Road (AWAR) and Bypass Road inspections were carried out prior to and during freshet 2021, between May 12th and June 19th.

On May 12th, higher temperatures increased snowmelt which had an impact on 2 areas on the AWAR/Bypass Road; marginal pooling was observed on the side of the road near km 5 and km 25, causing erosion. Similar observations were made during the following inspections that took place on May 19th and May 26th, 2021.

On May 28th, a section of the AWAR Road at km 9 experienced flow on top of the road, which caused erosion. Straw logs were deployed downstream (on the east side of the road) to mitigate sediment transport. Following the inspection, E&I Department pumped water across the road to mitigate erosion, until the road was repaired and a temporary PVC pipe was installed under the road on June 7th to facilitate flow. After the mitigation measures were put in place, the observed flow was slow and the water clear.

On June 8th, km 5 experienced flow on the top of the road. Straw logs were deployed downstream (south of the road) to mitigate sediment transport.

The inspection completed on June 18th indicates that most of the snow was melted from the increasing temperatures. Inspections were regularly conducted at Itivia, along the AWAR and Bypass Road throughout the year, and in response to rainfall. Any visual turbidity plumes or erosion at Itivia, along the AWAR/Bypass Road, at culverts or at bridges were documented by Environmental Technicians.

7.5 BLAST MONITORING

In compliance with Term and Condition 11 of NIRB Project Certificate No. 006, Agnico Eagle has developed a Blast Monitoring Program. The objective of the Blast Monitoring Program is to minimize the effects of blasting on fish and fish habitat, water quality and terrestrial Valued Ecosystem Components (VECs).

Peak particle velocity (PPV) and overpressure monitoring data were recorded throughout 2021 during blasting activities at Meliadine. During 2021, two surface locations were monitored: Tiriganiaq Open pit 1 (TIR01) and Tiriganiaq Open pit 2 (TIR02). The locations of the blast monitoring stations used in 2021 for each area are shown in Table 21 and Figure 26 and Figure 27 below.

Table 21. Tiriganiaq Open pits 1 & 2 (TIR01 & TIR02) Surface blast monitoring station coordinates

LOCATION	EASTING	NORTHING	DESCRIPTION
Location #1	539427.536	6988596.942	Temporary location used for TIR02
Location #2	541938.477	6989017.942	Temporary location used for TIR02
Location #3	540262.772	6988922.029	Temporary location used for TIR02
L75 Electrical Bay	539839.028	6988534.308	Permanent location used for TIR01 & TIR02
Explo Camp	541927.162	6989073.053	Permanent location used for TIR01 & TIR02 (installed 2020-08-20)
Comm Tower P1	539803.785	6988836.212	Permanent location used for TIR01 & TIR02 (installed 2020-08-20)

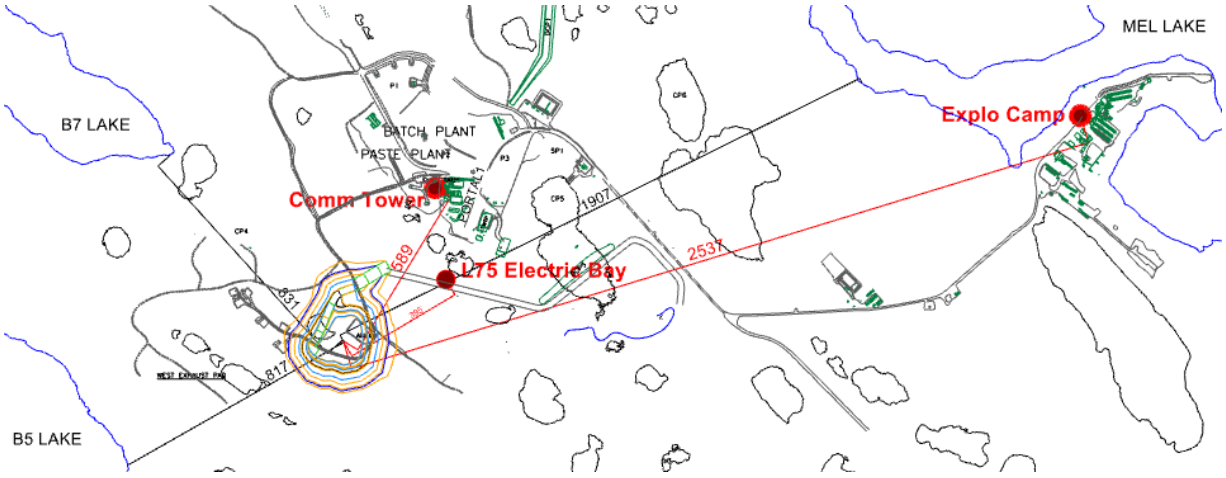

Figure 26. Surface Blast Monitoring Station Locations used for Tiri01 Blasts (Distance in Meters)

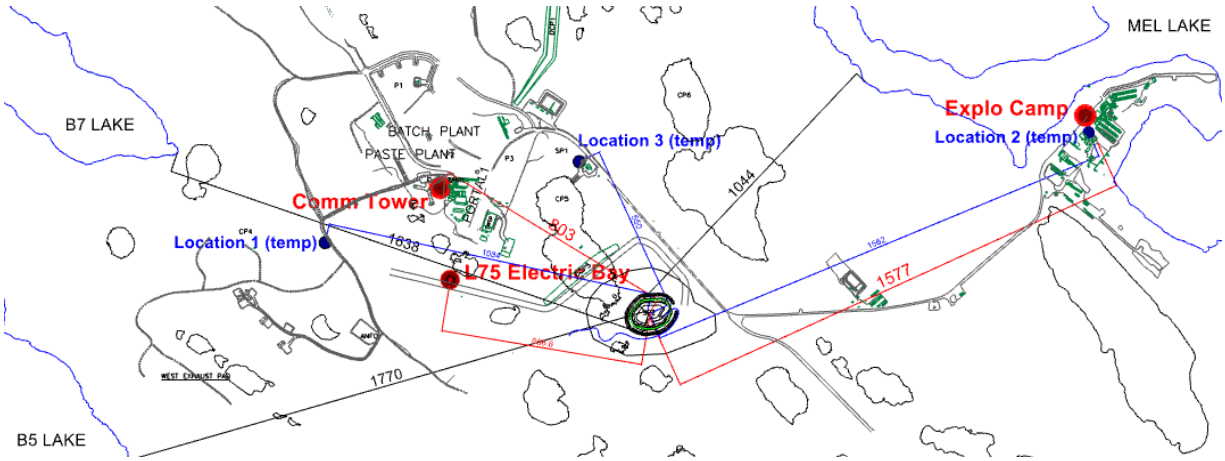

Figure 27. Surface Blast Monitoring Station Locations used for Tiri02 Blasts (Distance in Meters)

To improve vibration monitoring practices and data accuracy, permanent monitoring installations were commissioned on August 20th 2020, which allow the seismograph to be directly anchored into the bedrock via attachment to a steel rod drilled through the tundra. These permanent stations thereafter replaced the temporary locations used earlier in the year and throughout 2020. The L75 Electric Bay station has always been anchored in the bedrock as it is installed underground.

Blasts were monitored using an Instantel Minimate Blaster, which is fully compliant with the international Society of Explosives and Engineers performance specifications for blasting seismographs (Instantel, 2005). The transducer is installed as per the model specifications and measures transverse, vertical and longitudinal ground vibrations. Transverse ground vibrations agitate particles in a side to side motion. Vertical ground vibrations agitate particles in an up and down motion. Longitudinal ground vibrations agitate particles in a back and forth motion progressing outward from the event site (Instantel, 2005). The Minimate Blaster calculates the PPV for each geophone and calculates the vector sum of the three axes. The final result is the Peak Vector Sum (PVS) and is the resultant particle velocity magnitude of the event:

$$PVS = \sqrt{(T^2 + V^2 + L^2)}$$

Where:
T = particle velocity along the transverse plane
V = particle velocity along the vertical plane
L = particle velocity along the longitudinal plane

Detailed blast monitoring data compilation and results are available in Appendix 22. Of the data collected, one data point exceeds the threshold limits. This anomalous data set (which has a corresponding higher than average overpressure value) is most probably attributed to improper placement of the instrument; 'the most common result of an improperly placed transducer is an abnormally high reading' (Nomis Seismographs User Guide, 2018). This reading was the very first reading taken from the newly commissioned permanent monitoring installation at the Communication Tower location, and after analysis is was found the wind was triggering the seismograph constantly due to improper attachment to the anchor rod. The corresponding reading of the same blast recorded at the Exploration Camp location did not show

any abnormalities. Adjustments were made to the seismograph attachment for the next blast which consequently provided more consistent results.

The 2021 Meliadine Blast Monitoring Report for the Protection of Nearby Fish Habitat can is presented in Appendix 22.

7.6 NOISE MONITORING

The objective of the noise monitoring program is to measure noise levels at a minimum of three or four previously determined monitoring locations over at least two 24 h periods. Results are compared to FEIS predictions for the 24-h L_{eq}, the $L_{eq\text{-}nighttime}$ design target, and the site's noise monitoring criteria (24-h L_{eq}).

Since high winds in the area tend to significantly reduce the amount of available data, technicians aim to conduct two or more monitoring events for each station, lasting two to four days each. In 2021, two or three monitoring events were successfully conducted for all stations (NPOR006a, NPOR008, NPOR017a and NPOR014a).

Noise monitoring stations are illustrated on following Figure 28.

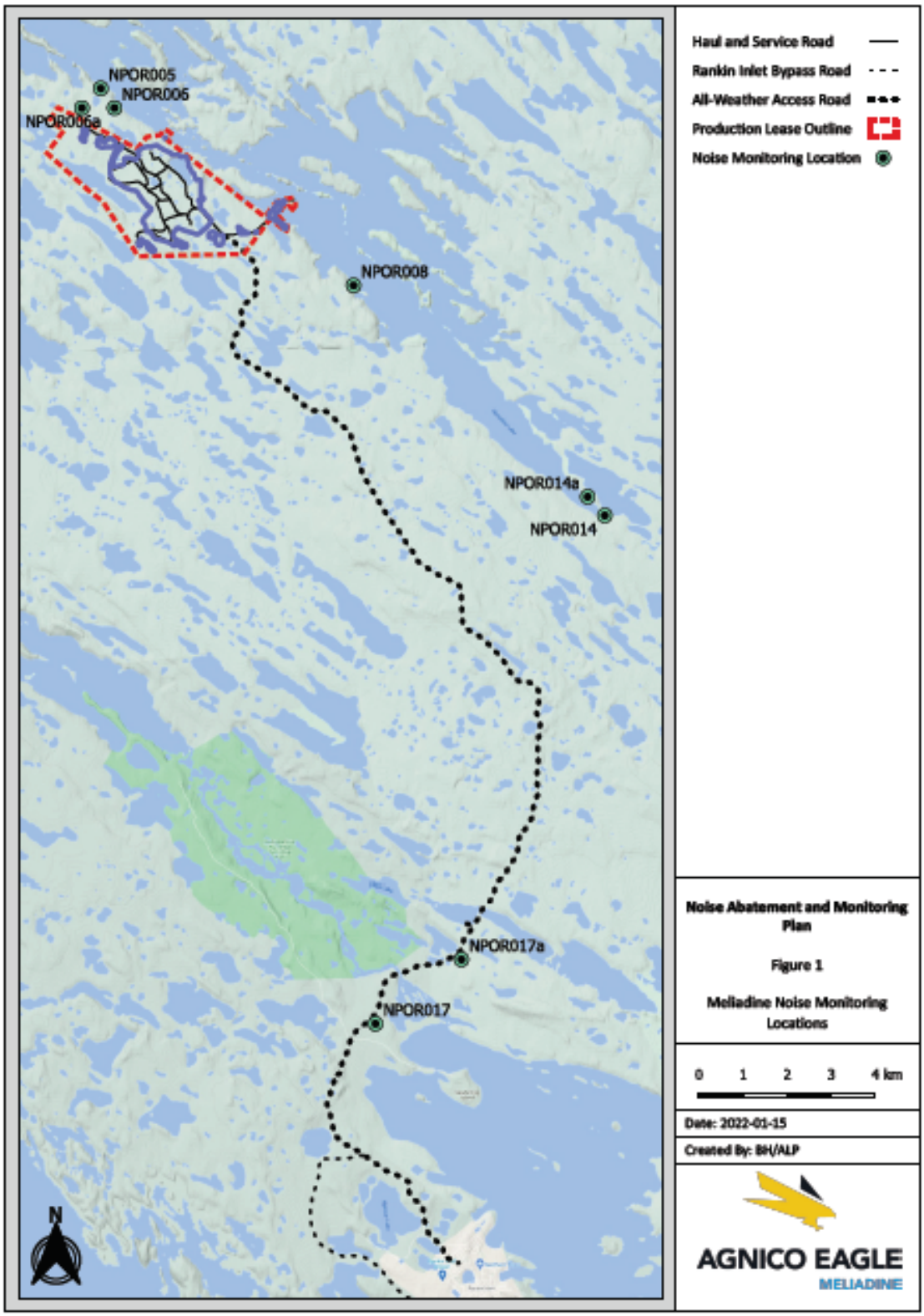

Figure 28. Meliadine Noise Monitoring Locations

Following processing of the data in accordance with standard methods (Alberta Energy Resource Conservation Board Directive 038), sufficient valid data was available for the calculation of at least two 24-h L_{eq} values for each monitoring station in 2021. Final values are shown in Table 22.

Table 22. Summary of noise monitoring results in 2021. Values exceeding FEIS predictions, criteria and/or design targets are in bold. A dash "-" indicates not applicable. *Exceedance related to helicopter traffic that is time-limited and/or exploration related (not suitable for comparison to FEIS prediction).

Location	Monitoring Start	Monitoring End	*Noise Monitoring Criterion $L_{eq(24\ h)}$ (dBA)*	*FEIS Prediction $L_{eq(24\ h)}$ (dBA)*	Measured $L_{eq(24\ h)}$ (dBA)	*Design Target L_{eq} (nighttime) (dBA)*	Measured L_{eq} (nighttime) (dBA)
NPOR006a	7/17/2021 5:03 PM	7/20/2021 5:25 PM	*45*	*39.8*	31.2	-	-
	7/31/2021 11:28 AM	8/03/2021 3:22 PM			37.1		-
NPOR008	7/18/2021 1:59 PM	7/21/2021 3:27 PM	*45*	*41.7*	33.0	*40*	33.3
	9/08/21 10:09 AM	9/10/21 11:59 PM			**(45.4*)**		34.3
NPOR014a	7/26/2021 1:56 PM	7/29/2021 8:04 AM	*45*	*44.7*	41.2	-	-
	8/09/2021 3:06 PM	8/13/2021 1:29 PM			41.0		-
	8/25/2021 10:58 AM	8/28/2021 7:21 AM			40.7		-
NPOR017a	7/21/2021 11:40 AM	7/24/2021 2:36 PM	*45*	*43.4*	37.7	-	-
	8/04/2021 8:08 AM	8/08/2021 6:59 AM			39.4		-
	8/29/2021 1:47 PM	9/01/2021 11:59 PM			41.9		-

For stations NPOR006a, NPOR014a, and NPOR017a, all monitoring results were below the associated FEIS prediction, noise monitoring criteria, and night-time design target.

For NPOR008, one exceedance of the FEIS prediction (41.7 dBA) and site's noise monitoring criterion (45 dBA) occurred during monitoring event 2 (September 8 - 10), with a measured 24-h L_{eq} of 45.4 dBA. Elevated sound levels during this event were caused by occasional helicopter flyovers (1-2 per hour, from 5 – 7 am and 5 – 7 pm) causing brief but significant sound peaks. As discussed in previous reports, no mine activity is ongoing in the area of NPOR008 but this location lies on the flight path between the Exploration Camp and the Discovery deposit area. For transparency in reporting, this helicopter-related noise is not filtered out of the dataset. However, it is noted that this traffic is largely related to exploration activities and not mine construction or operations as modeled in the existing Project FEIS, so direct comparison to those predictions is not considered appropriate. Results during monitoring event 1 for this

location (in the absence of exploration-related helicopter traffic) provide a more appropriate comparison, and did not exceed predictions or noise monitoring criteria.

To date, no noise-related complaints have been received for the Meliadine site. Based on these findings, no changes to existing noise monitoring plans and mitigation measures are proposed at this time.

The complete Noise report can be found in Appendix 23.

7.7 AIR

7.7.1 Air Quality monitoring

Through its ambient air quality monitoring program, Agnico Eagle aims to measure airborne particulates, dustfall, and the gaseous compounds (NO_2 and SO_2) using a combination of active and passive sampling methods. In accordance with the Plan, monitoring in 2021 included year-round passive measurement of dustfall at four onsite sampling stations, as well as NO_2 and SO_2 at two locations, over one month averaging periods. Monitoring of suspended particulates (TSP, $PM_{2.5}$, and PM_{10}) occurred year-round at two onsite monitoring stations. Agnico Eagle also conducted summertime dustfall transect sampling (25, 50, 100, 300 m distances from the road) at three locations along the All Weather Access Road (AWAR) and one location along the Rankin Inlet Bypass Road.

Dustfall Locations are identified in Figure 29.

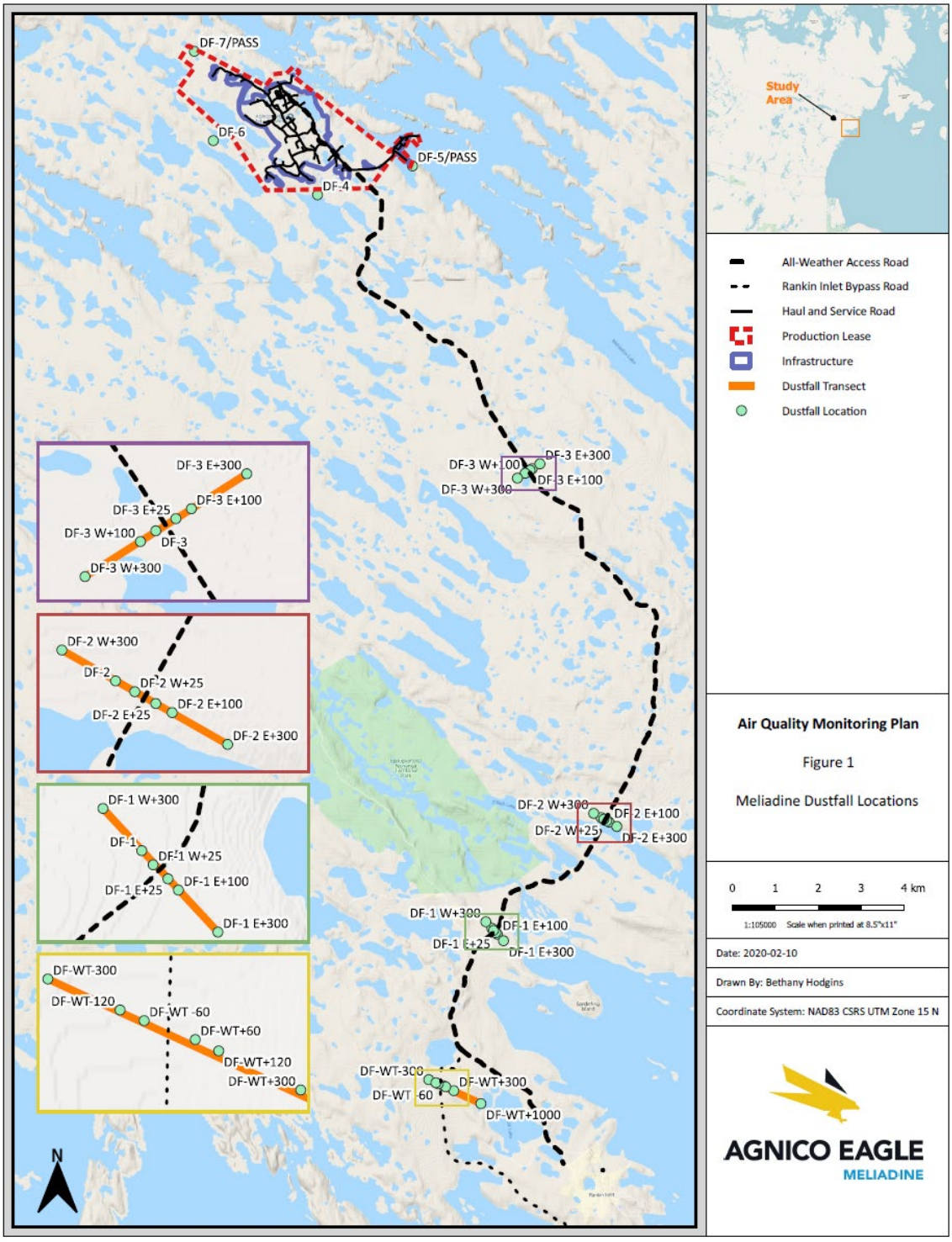

Figure 29. Dustfall Locations

Dustfall results are compared to Alberta's Ambient Air Quality Guidelines (Alberta Environment and Parks, 2019) for recreational and industrial areas (AB-Rec, AB-Ind), for context. These guidelines are based on nuisance concerns and are not in place for the protection of environmental or human health. It is anticipated that guidelines for recreational areas may regularly be exceeded in close proximity to the AWAR or mine site, and that guidelines for industrial areas may occasionally be exceeded. For onsite perimeter monitoring stations (DF-4 – DF-7), 37 of the 44 samples collected in 2021 met the AB-Rec guideline, and all samples met the AB-Ind guideline. Historically, an increase in measured dustfall rates has occurred since mid-2017 when the construction period began, as anticipated, but exceedances of even the AB-Rec guideline continue to be relatively uncommon (<12% of samples in 2021).

For AWAR and By-Pass Road transects (DF-1, DF-2, DF-3, and DF-WT, summer-only sampling), overall rates of dustfall were lower than ever observed previously, despite similar or increased traffic in 2021. Historically (2019 and 2020), annual average rates of dustfall have only exceeded AB-Rec at the 25-m distance, and in 2021, average dustfall was well below the guideline for all distances. In total, three of the 62 total dustfall samples from transects exceeded the AB-Rec guideline in 2021. Though sampling later in the season than previously (into October) may have reduced average rates due to effects of snow cover, there were limited differences across sampling months suggesting that dust suppression applied during round 1 (July – August) was as effective in controlling dust as any snow cover later in the season. Dust suppressant in the form of calcium chloride dry product was applied along the length of the AWAR 2 to 3 times per month in June, July, and August.

Suspended particulates (TSP, $PM_{2.5}$, and PM_{10}) were scheduled to be assessed every 6 d in two locations (DF-5 and DF-7) using four Partisol air samplers. Overall data loss was 22% (81 of 366 possible samples), primarily due to a single instrument downtime incident that took it offline for two months. All results for suspended particulates (285 samples) were below regulatory guidelines for the 24-h averaging time (Government of Nunavut Ambient Air Quality Standards (GN, 2011)/BC Ambient Air Quality Objectives (BC, 2020)) and maximum concentrations predicted in the Final Environmental Impact Statement (FEIS) for the Meliadine Gold Project (Golder 2014), with the exception of a single TSP sample. Annual averages were less than relevant regulatory guidelines and FEIS predictions. Concentrations of metals of concern to the Project in TSP (cadmium and iron) were also less than FEIS-selected health-based screening values and FEIS maximum model predictions in all samples.

Calculated annual average concentrations of NO_2 and SO_2 were well below the Government of Nunavut Ambient Air Quality Standards, and were also less than FEIS maximum predicted values. This was the fifth full year of monitoring for gaseous compounds, and no clear spatial or temporal trends were observed.

As described in the Air Quality Monitoring Plan, a permanent weather station was installed at the Meliadine site, and daily averages for wind speed, direction, temperature, and solar radiation are provided.

Incinerator stack testing was performed in October, 2021. Average measured concentrations of mercury and total dioxins and furans were below the GN standards for these parameters.The complete stack testing report is available in Appendix 15.

Since monitoring results in 2021 were within applicable air quality standards and FEIS predictions, and/or did not indicate any air quality trends of concern, no additional adaptive management measures are planned. Monitoring in 2022 will proceed according to the Air Quality Monitoring Plan
The air monitoring full report can be found in Appendix 24.

7.7.2 Greenhouse Gas Emissions

Agnico Eagle is required by Environment Canada's Greenhouse Gas Emissions Reporting Program (GHGRP) to track greenhouse gas emissions. Calculated emissions for the Meliadine site (including Rankin Inlet operations) were reported on June, 2020 for the 2020 year. Total emissions were 123,357 tonnes CO_2e, which is less than the FEIS-predicted maximum of 317,000 tonnes CO_2e.

Environment Canada's Greenhouse Gas Emissions Reporting Program for the 2021 year will be completed by June 1st, 2022.

7.7.3 Climate

A permanent weather station was installed at the Meliadine site. The station records various data including daily and hourly data for the average, maximum and minimum temperature, the average and maximum wind speed, wind direction and solar radiation. In November 2020, a new weather station was installed to the northeast of the camp, featuring a new precipitation gauge (Geonor T-200B), and sensors for temperature, barometric pressure, and solar radiation. Table 23 summarizes 2021 annual temperature and precipitations records (from both the site weather station and Environment Canada at the Rankin Inlet Airport weather station, for comparison).

As per NIBR Term and Condition 131, it should also be noted that Agnico Eagle also engages with the Kangiqliniq Hunters and Trappers Organization (KHTO) to confirm the commencement and ending of the open water season for marine effluent discharge every year.

Table 23. 2021 Climate Conditions

Environmental Variable	Environment Canada (Rankin Inlet Airport)	Meliadine Site Weather Station
Temperature (°C)		
Mean Annual Temperature	-7.92	-8.3
Min. Annual Temperature	-39.2	-39.8
Max Annual Temperature	26.8	27.4
Precipitation		
Total Annual Snowfall (cm)	149	-
Total Annual Rain (mm)	283.3	-
Total Annual Precipitation (mm)	417.2	490.14*

*****Sensors on precipitation gauge Geonor T-200B use vibrating wire technology, which is very sensible to movement or wind. High winds may induce erroneous data. Some negative erroneous values were observed in 2021 for precipitation; they could be due to high winds, or to evaporation of the anti-freeze solution in the container (used to melt solid precipitation and impede evaporation). Regular maintenance is carried out on the precipitation gauge by the Environment department. When taking out those negative values, total annual precipitation is equal to 499.25 mm. Data is considered representative even though there is a margin of error on the instrument.

The maximum annual temperature (from Meliadine weather station) of 27.4°C was recorded on July 15, 2021 and the minimum annual temperature of -39.8°C was recorded on January 4 and February 27, 2021;

the mean annual temperature was -8.3°C (Table 23). Total recorded annual precipitation at the Meliadine weather station was 490.14 mm and snowmelt began May 29, 2021 when the average daily air temperature exceeded 0°C. The precipitation data were available in real-time in 2021 and were used for year-round precipitation data. Environmental variables continued to be monitored on an ongoing basis.

7.8 WILDLIFE MONITORING

All Meliadine employees and contractors are required to report wildlife sightings. All supervisors ask their employees to report wildlife sightings; wildlife logs are posted throughout the Meliadine camp and are easily accessible to employees to facilitate wildlife reporting after work shifts. All observations, problematic interactions, wildlife surveys conducted weekly along the AWAR, caribou migration, operation shut downs related to caribou migration, aerial observations when helicopters are active, onsite audits (i.e. for wildlife attractants) conducted by third parties, and mitigation actions taken following problematic issues are reported in the monthly report to the Government of Nunavut, the Kangiqliniq Hunters and Trappers Organization and Kivalliq Inuit Association.

Department toolbox meetings were completed in 2021 for environmental subjects including wildlife and caribou migration. The toolbox presentations can be found in Appendix 25.

7.8.1 TEMMP

The objectives of the Terrestrial Environment Management and Monitoring Plan (TEMMP) annual report are to summarize annual data collected from wildlife and vegetation monitoring programs, and to describe natural variation and potential Project-related effects to wildlife populations within and adjacent to the Project. The data was collected according to procedures and sampling or monitoring intervals outlined in the Project's Standard Operating Procedures (SOPs) and the TEMMP. The 2021 TEMMP Annual Report describes monitoring objectives and methods, 2021 survey results, mitigation activities, and management recommendations (i.e., adaptive management). The complete 2021 TEMMP report can be found in Appendix 26. Complementary studies were conducted in 2021 and are included in Appendices 27 and 28 (Caribou Behaviour Study, Caribou Trail Camera Study). Wildlife observations can be found in Appendix 29.

Incorporation of Inuit Qaujimajatuqangit

Six meetings and site visits were held in 2021 where Inuit Qaujimajatuqangit (IQ) was collected. When possible, field programs in 2021 were guided by IQ, including the assistance of local field assistants. As per 2020, participation of local field assistants was limited in 2021 due to COVID-19 health and safety protection measures. Annual contributions from Inuit to the monitoring programs are presented in Section 3.0 of the TEMMP report (Appendix 26).

Direct Habitat Loss

Direct habitat loss is assessed every three years and was assessed in 2021 (next assessment in 2024). The project footprint is currently at 38% (633 ha) of the total approved footprint (1,682 ha).

Indirect Habitat Loss

Indirect habitat loss for caribou and wildlife habitat (soils and vegetation) is assessed every three years and was not assessed in 2021 (next assessment in 2022, tied to the Vegetation Health Program).

Wildlife Observations

Wildlife Sighting/Track Survey

- Wildlife sighting/track surveys were completed by Agnico Eagle personnel along the All Weather Access Road (AWAR) and infrastructure throughout the year.
- A total of 3,336 individuals from 16 identified wildlife species and 4 unidentified wildlife species groups (e.g., duck species) were recorded during surveys along the AWAR in 2021.
- A total of 445 individuals from 12 identified wildlife species and 5 unidentified wildlife species groups were recorded during surveys on the Mine site in 2021.

Wildlife Incidentals

There were 94 recorded incidental observations, representing 280 individuals of 10 species, around the Mine site (including the camp area) and the AWAR in 2021.

Den Sites

Two Arctic fox (*Vulpes lagopus*) dens were observed in 2021. One den was observed approximately 375 m east of km 29 of the AWAR, and one den was observed 1.3 km west of the Meliadine Mine.

Bird Nests

Four common raven nests, one sandhill crane nest, and one semipalmated plover nest were observed on Site 2021.

Incidents and Mortalities

A total of 37 mortalities and 2 incidents of wildlife across 4 different species was reported at the Project from February 1 to December 15 2021; 36 of these mortalities were suspected or confirmed to be caused as a direct result of Project activities. No caribou mortalities were reported in 2021.

Wildlife Deterrents

Wildlife deterrents (i.e., propane cannons and fake owls) were implemented at six locations to deter birds from nesting on site.

Barren-ground Caribou

Caribou Behaviour Monitoring

- In total, 46 behaviour monitoring sessions were completed in 2021. Analysis of data found caribou farther from infrastructure (>300 m) displayed lower proportions of response behaviours, however the relatively small sample size was noted.
- The proportion of response behaviours (i.e., alert or running behaviours) in groups increased following disturbances, but behaviours usually returned to baseline levels after six minutes.

Caribou Remote Camera Study

- As in 2020, a study was conducted in 2021 using motion-trigger cameras to study caribou interactions with the Project infrastructure during their annual migration, and particularly the AWAR.
- The cameras were successful at capturing crossing timing locations consistent with locations identified in 2020 and with locations identified by IQ from Inuit Elders and community members.
- Physical attributes of the road did not appear to influence crossing locations. All recorded caribou crossings occurred between 5 minutes and 8.75 hours of a vehicle passing, with an average of 1.3 hours.

Caribou Advisory

- The Qamanirjuaq herd caribou migration through the Project area was monitored from 22 June through 25 July 2021. 2021 was the longest caribou migration period on record for Meliadine.
- The AWAR was closed for 122.5 hours across 10 days. Vehicle traffic on site was restricted for 194.75 hours across 12 days.
- Open pit operations were shutdown for 211 hours across 12 days.
- The Exploration Camp was shutdown for 215.5 hours across 14 days.
- Activities at the Main Camp were restricted for 209.5 hours across 14 days.

Hunter Harvest

- 40 hunters participated to the 2021 Hunter Harvest Study; participants were interviewed in person three times during the year by the harvest study coordinator (June 2021, October 2021 and January 2022 to collect the remaining 2021 data).
- 30 participants reported harvesting Caribou (*Rangiger tarandus*).
- Fourteen (14) Muskox (*Ovibos moschatus*), two (2) Wolverine (*Gulo gulo*), and 18 Wolves (*Canis lupus*) were harvested in 2021. Other harvested terrestrial mammals included Arctic Fox (*Vulpes lagopus*) and Arctic Hare (*Lepus arcticus*). In the marine environment, Ringed Seal (*Pusa hispida*; 25 individuals) was the most common species harvested followed by Beluga (*Delphinapterus leucas*; 11), Bearded Seal (*Erignathus barbatus*; 2) and Walrus (*Odobenus rosmarus*; 3).
- A considerable number of bird species were harvested by Rankin Inlet participants in 2021 with Canada Goose (*Branta canadensis*; 134 individuals) and Snow Goose (*Anser caerulescens*; 126) harvested at the highest levels. Gulls (*Larus* sp.), ptarmigan (*Lagopus* sp.), Sandhill Crane (*Grus canadensis*), and Northern Pintail (*Anas acuta*) were also harvested.
- Arctic Char (*Salvelinus alpinus*; 628 fish) and Lake Trout (*Salvelinus namaycush*; 216 fish) were the most common species caught by fisherman. Relatively small numbers of Arctic Cod (*Arctogadus glacialis*), Arctic Grayling (*Thymallus arcticus*), Lake Whitefish (*Coregonus clupeaformis*), and Burbot (*Lota lota*) were caught.Birds

Birds

Shoreline Surveys

A total of 45 nests of 11 species were detected in 2021. Shoreline surveys in 2021 were spread over a longer number of days, in the middle of the season compared to other years.

Point Counts

- Species richness and diversity were similar among habitats and among years.
- Species density decreased with survey date. Distance from the AWAR and habitat did not appear to have strong influence on overall bird density.

PRISM

Agnico Eagle contributed to the Environment and Climate Change Canada (ECCC) PRISM surveys in 2018 and 2019 and will continue to do so every five years (next survey in 2023/2024).

Raptors

The 2021 Arctic Raptors Research Program was not completed in 2021 due to COVID-19 restrictions.

Soil and Vegetation Monitoring

Soil and vegetation health monitoring (dust and metals survey) is assessed every three years and was not assessed in 2021 (next assessment in 2022, tied to the Indirect Habitat Loss assessment).

Non-native Plants

Two occurrences of dandelion were found along the AWAR. It should be noted that all cargo is visually inspected prior to be loading on vessels at the Bécancour Port by QSL to make sure no soil that could contain plant seeds of invasive breeds is loaded on board. As per documentation available in Appendix 14, QSL confirms conduction of these visual inspections on the shipping manifests.

7.8.2 Marine Environment

A Marine Mammal and Seabirds Observation (MMSO) report was completed for all observations done during the 2021 sealift season by the shipping companies Groupe Desgagnés and Woodward Group of Companies (Woodward). The purpose of the MMSO program is to mitigate interactions between marine mammals and seabirds and Project vessels and to collect information on marine wildlife presence.

To manage potential cumulative effects on birds including other vessels and community resupply vessels, Agnico Eagle is minimizing its own effects on marine birds and mammals through mitigation measures outlined in the Shipping Management Plan. To date, there have been no marine spills and no evidence that marine birds are affected by Agnico Eagle lighting or vessels. Therefore, Agnico Eagle is continuing to ensure it is minimizing effects to marine birds.

Since 2020, the MMSO Report is coordinated for the shipping between the Meliadine Gold Mine Project and the Meadowbank Gold Mine and Whale Tail Pit Projects, contributing to cumulative effects monitoring.

In 2020, ERM provided updated training materials for vessel crew that were delivered by Agnico Eagle to all Groupe Desgagnés captains and bridge crew on vessels supplying Meadowbank and Meliadine. These

training materials were provided to Groupe Desgagnés and Woodward in 2021 and included updated instructions for vessel crew on:

- setbacks from sensitive marine wildlife habitats such as marine mammal haul-outs and seabird colonies,
- mitigation procedures should marine mammals or seabirds be observed in or near the vessel path, and
- training materials for dedicated MMSO crew observers including detailed methods for marine mammal and seabird surveys, data sheets, and training videos.

The 2021 MMSO program resulted in similar effort to 2020. Both 2021 and 2020 resulted in greater survey effort compared to previous years. A total of 29 Groupe Desgagnés and Woodward vessels serviced the Projects between June and October during the 2021 shipping season: 13 for Meadowbank, 9 for Meliadine, and seven serviced both Meadowbank and Meliadine. Datasheets were obtained from 23 of the 28 vessels in 2021, which is greater than all previous years, with 19 of the 25 vessels submitting datasheets in 2020, only six vessels provided datasheets 2019, and only two participating vessels in 2018.

The complete 2021 MMSO report can be found in Appendix 30.

Vessel Mitigation

Vessels are required to transit south of Coats Island whenever the weather is safe to do so. The majority (76%) of vessels servicing the Meadowbank and Meliadine projects in 2021 travelled south of Coats Island, with the exception of seven occasions, five of which occurred in June and early July due to ice conditions in Hudson Bay, and the other two occurred in September and October, both due to inclement weather.

Marine Mammal Monitoring

In 2021, 56 transects were surveyed for marine mammals. There was a total of 35 sightings (23 during dedicated surveys and 12 incidentally) of marine mammals during the 2021 shipping season, compared to 12 (surveys and incidentally) in 2020, 7 (all during surveys) in 2019, none in 2018, and 6 (all incidental) in 2017. The majority of all marine mammal sightings between 2017 and 2021 were recorded in the Eastern Hudson Strait or near Marble Island. There are an insufficient number of marine mammal sightings recorded to conduct a density analysis. No marine mammal-vessel interactions (e.g., strikes) were recorded by Groupe Desgagnés or Woodward in 2021, or in previous years (2017, 2018, 2019, or 2020).

Seabird Monitoring

No interactions between vessels and seabirds were recorded during the MMSO in 2021, or in previous years. Seabird survey effort on moving vessels in 2021 was double the average over previous years (2018-2020), with 173 surveys compared to a range of 72-87 surveys per year previously. Over four years of moving vessel surveys for seabirds between 2018 and 2021, 49 species and 6,296 individual birds were recorded. The most common species recorded in 2021 were thick-billed murre, common murre, northern fulmar, and manx shearwater. Common murre and manx shearwater were reported in large numbers for the first time in 2021; while both species can occur in the eastern portion of the shipping zone near Newfoundland, they are not common through the majority of the survey area. It is possible that identifications of common murre were actually thick-billed murre and that the manx shearwater was not identified correctly.

Seabird detectability and density were estimated using models which account for lower detectability of birds with greater distance from survey transects. Detectability estimates were mostly consistent between years, with higher estimates in 2019 and 2021, which reflects the fact that both years had relatively high bird observations relative to the survey effort. Predicted seabird densities varied across years, with the highest density predicted in 2019. The differences in estimated density are a reflection of variability in overall detection rate between years.

Ninety-five percent of stationary seabird surveys were conducted in 2020 and 2021, with a handful of surveys conducted in 2018-2019. A total of 1,828 individuals from 26 known species and five unknown species were recorded during stationary vessel surveys from 2019 - 2021. Nearly 70% of records were from 2021. Data from 2021, which represents the majority of the stationary vessel data, shows a higher detection rate.

7.9 VEGETATION

On June 1, 2018 Agnico Eagle and the University of Saskatchewan received a Natural Sciences and Engineering Research Council (NSERC) Collaborative Research and Development grant. The grant entitled "*Tundra Restoration: Niche construction in early successional plant-soil system*s" will support on-site and laboratory research from June 2018 to June 2022.

The primary objective of this research is to address Term and Condition 41 of the NIRB Project Certificate # 006 : "*Prior to the commencement of operations, the Proponent shall develop a progressive re-vegetation program for disturbed areas that are no longer required for operations, such program to incorporate measures for the use of test plots, reseeding and replanting of native plants as necessar*y."

To better understand the barriers for revegetation and to identify potential vegetative species for restoration natural colonization of drilling wastes and disturbed substrates by biological soil crusts and native vascular plants was examined from 2018-2021. Primary findings include:

- native plant communities on drilling wastes appear to recover 20-25 years after disturbance;
- bryophytes are key early colonizing species with generalist ruderal acrocarpous mosses found on boreal and Arctic disturbed substrates;
- biological soil crusts modify the environment by changing abiotic conditions at the soil surface, which in turn promote development of native vegetation communities; and
- native legumes appear to play an important role in plant-soil interactions in early successional habitats.

Active restoration trials including ex-situ and in-situ examinations of the efficacy of transplanting upland tundra heath turfs and shredded materials were conducted from 2019-2021. Growth chamber trials indicated that fertilization of adjacent substrates may reduce restoration timelines and highlighted the importance belowground expansion. In-situ restoration efforts at the Meliadine site revealed:

- turfs 40 cm2 by 10-15 deep support native plant-soil communities that can act as resources for revegetation;
- shredded materials had poor establishment and may not be appropriate at Meliadine;
- in general, evergreen shrubs should be avoided due to high transplanting morality; and
- graminoids should be targeted for transplanting due to extensive belowground expansion.

Soil invertebrate surveys were conducted in 2018 at Meliadine and found soil invertebrate communities, expressed as the density of collembolan, enchytraeids and mites, were relative constant across the upland tundra heath sites, although vegetation and soil characteristics appear to influence species density and should be considered when selecting materials for restoration. An extensive invasive plant species survey was conducted in summer 2019 and no non-native invasive species were observed or identified. In fall of 2019 a website: tundrarestoration.com that provides information on tundra ecology, scientific and traditional Indigenous knowledge of common tundra plants, details and videos of our restoration trials and information on youth education programs was launched.

Finally, on-going examinations of the plant-soil interactions of early colonizing Arctic legumes has identified nitrogen-fixing legumes as important early colonizers on disturbed substrates at Meliadine. Characterization of nitrogen fixing bacteria associated with these species is currently underway and will be complemented by radioisotope imaging of carbon and nitrogen uptake and translocation.

Together these studies indicate that tundra turfs, biological soil crusts and nitrogen fixing legumes are all candidates for active and passive restoration and both natural recovery and active restoration of local native vegetation can support the development of healthy functioning tundra ecosystems.

The March 2022 *Natural recovery and active restoration of tundra plant-soil systems at Agnico Eagle Mines Meliadine site, Nunavut* is provided in Appendix 31.

SECTION 8. CLOSURE

8.1 PROGRESSIVE RECLAMATION

8.1.1 Mine Site

As required by Water License 2AM-MEL1631 Schedule B, Item 18: ***A summary of any progressive closure and reclamation work undertaken including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling.***

And

As required by Water License 2BB-MEL1424 Part B, Item 6k: ***A description of all progressive and/or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;***

In 2021, no reclamation occurred at the mine site.

8.1.2 AWAR

In 2021, no reclamation occurred along the AWAR.

8.1.3 Quarries

In 2021, no reclamation occurred at quarries.

8.2 RECLAMATION COSTS

As required by Water License 2AM-MEL1631 Schedule B, Item 20: ***An updated estimate of the current restoration liability based on project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking.***

And

As required by Water License 2BB-MEL1424 Part B Item 6h: ***An updated estimate of the current Meliadine West Gold Project restoration and liability, as required under Part B, Item 3, based upon the results of the restoration research, project development monitoring, and any modifications to the site plan*****;**

A permanent closure and reclamation financial security cost estimate was prepared in March 2014 using the RECLAIM model, version 7.0. According to that estimate, the closure and reclamation of all Project facilities amounted to $47,449,337. This estimate was included in the Preliminary Closure and Reclamation Plan (April 2015) prepared as part of the Type A Water License application. In negotiations between CIRNAC, Agnico Eagle and KivIA the quantum of security was increased to $49,555,000.

On July 1, 2017, the Production Lease KVPL11D01 between KivIA and Agnico Eagle came into effect; the security was confirmed at $49,555,000. Agnico Eagle posted a Reclamation Security Deposit, equal to 50% of this estimate ($24,777,500) with KIA.

In 2019, an Interim Closure and Reclamation Plan (ICRP) was prepared. CIRNAC's RECLAIM Reclamation Cost Estimating Model Version 7.0 workbook has been used for this estimate, as per the Guidelines for Closure and Reclamation Cost Estimates for Mines, issued by CIRNAC, Mackenzie Valley Land and Water Board and the Government of the Northwest Territories (CIRNAC, MVLWB, GNWT, 2017). The 2019 estimated closure and reclamation costs for the Meliadine Mine represented a total of $ 59,514,717. This total includes $ 34,462,041 of direct costs and $ 25,052,677 of indirect costs.

In 2020, a second version of the ICRP was prepared (SNC Lavalin Inc., April 2021). The general purpose of this ICRP was to update the interim closure and reclamation plan produced for the development phase of the Project, including the activities part of the Meliadine Water Licence Amendment, which are approved in the Meliadine FEIS and in the NIRB Project Certificate 006 (NIRB, 2019). The detailed financial security cost estimate for the Meliadine ICRP 2020 was updated using the RECLAIM Version 7.0 workbook. The updated 2020 estimated closure and reclamation costs for the Meliadine Mine represents a total of $69,687,246. This total includes $40,887,775 of direct costs and $28,799,471 of indirect costs.

SECTION 9. STUDIES/REVISIONS/MODIFICATIONS

9.1 SUMMARY OF STUDIES

As required by Water License 2AM-MEL1631 Schedule B, Item 21: ***A summary of any studies requested by the Board that relate to Water use, Waste disposal or Reclamation, and a brief description of any future studies planned.***

And

As required by Water License 2BB-MEL1424 Part B, Item 6l: ***summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed;***

No studies were requested by the NWB in 2021.

9.2 SUMMARY OF REVISIONS

As required by Water License 2AM-MEL1631 Schedule B, Item 22: ***Where applicable, revisions will be completed as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals.***

And

As required by Water License 2BB-MEL1424 Part B Item 6g: ***Any revisions to the Spill Contingency Plan, Site Water Management Plan, Used Water Management Plan, Waste Management Plan, Waste Rock and Ore Storage Plan, Landfill and Landfarm Management Plans, Abandonment and Restoration Plan, as required by Part B, Item 12, submitted in the form of an Addendum;***

The following Table 24 provides a summary the management plans and identifies the ones updated and the main revisions brought to them. They are available in Appendix 32.

Table 24. Management Plan Revisions

Management Plan	Version	Revision
2021 Annual Report Update		
Aquatic Effects Monitoring Program (AEMP) Design Plan	2	Update to reflect recent results of the annual AEMPs completed to date from 2016 to 2020, including the results of the Amendment No. 1 monitoring program
Blast Monitoring Program	4	General Update
Explosives Management Plan	8	General Update
Incineration Management Plan	7	General Revision Update to include possibility to ship
Landfarm Management Plan	4	General Update
Landfill & Waste Management Plan	8	General Update
Mine Waste Management Plan	9	Update to reflect Meliadine operational status Update quantities according to latest mine plan
Mine Waste Management Plan	9	Update to reflect Meliadine operational status Update quantities according to latest mine plan

Oil Pollution Emergency Plan / Oil Pollution Prevention Plan (OPEP/OPPP)	6	General Update
Ore Storage Management Plan	4	Update quantities according to the latest mine plan
Quality Assurance/Quality Control Plan	4	General Update
Shipping Management Plan	9	General Update
Spill Contingency Plan	11	General Update
TEMMP	4	General Update
Water Management Plan	12	Update to include RO use strategy for treating marginally saline water
Current Management Plans Not Updated as Part of the 2021 Annual Report		
Air Quality Monitoring Plan	3	NA
Ammonia Management Plan	3	NA
Borrow Pits and Quarries Management Plan	6	NA
Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan	1	NA
Dust Management Plan	6	NA
Environmental Management and Protection Plan (EMPP)	9	NA
Freshet Management Plan	6	NA
Greenhouse Gas Reduction Plan	1	NA
Groundwater Management Plan	7	NA
Hazardous Materials Management Plan	5	NA
Meliadine Interim Closure and Reclamation Plan	2	NA
Noise Abatement and Monitoring Plan	3	NA
Ocean Discharge Monitoring Plan	4	NA
Risk Management and Emergency Response Plan	4	NA
Roads Management Plan	8	NA
Sediment and Erosion Management Plan	3	NA
Water Quality and Flow Monitoring Plan	2	NA
Water Quality Management and Optimization Plan	4	NA
Wildlife Protection and Response Plan	8	NA

9.3 MODIFICATIONS

As required by Water License 2AM-MEL1631 Schedule B, Item 15: ***A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities.***

And

As required by Water License 2BB-MEL1424 Part B Item 6e*: A summary of modification and/or major maintenance work carried out on the Water Supply Facilities, Bulk Fuel Storage Facility, Bermed Fuel Containment Facilities, and Wastewater Treatment Facility, including all associated structures, and an outline of any work anticipated for the next year*

In 2021, landfarm remediation work took place, as mentioned in section 5.

At this time, no major maintenance is planned for next year.

SECTION 10. OTHERS

10.1 ACTIVE PERMITS

Below is the list of all active permits and authorizations for Meliadine

Table 25. List of all active permits and authorizations for Meliadine

Issued By	ID	Description	Issue	Expiry
KIA	KVPL11D01	Production lease	2017/06/30	2027/06/29
KIA	KVCA07Q08	Tiriganiaq/Westmeg/Meliadine quarry permit	2018/07/19	2021/09/12
KIA	KVCA11Q01	Exploration road quarries	2021/08/18	2024/04/19
KIA	KVRW11F02	Exploration road right-of-way	2012/04/19	2027/06/29
KIA	n/a	Water Compensation Agreement	2016/02/11	2031/03/31
NWB	2BB-MEL1424	Bulk Sampling and exploration drilling water license	2009/07/31	2024/07/21
NWB	2AM-MEL1631	Mining undertaking water license	2021/06/23	2031/03/31
NIRB	006	Project certificate (Meliadine Phase 1)	2015/02/26	N/A
NIRB	16QN071	Screening decision (Itivia Quarry)	-	-
GN-NAD	102631	Land lease, laydown Itivia		2021/07/01
GN-CGS	L-51809T	Right-of-Way permit AWAR on Municipal land	2017/06/01	2027/05/31
GN-CGS	L-51808T	Right-of-Way Lease Bypass Road km 2-7	2017/06/01	2027/05/31
GN-NAD	102893	Right-of-way lease bypass road km 1-2	2017/07/01	2027/07/01
GN-ENV	2019-058	Wildlife Research Permit	2021/04/01	2022/03/31
CIRNAC	55K/16-42-2	Saline Effluent Discharge and Diffuser Lease	2019/07/19	15 years after issued

10.2 INSPECTIONS

As required by Water License 2AM-MEL1631 Schedule B, Item 24: ***A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector.***

Due to the COVID-19 pandemic, in person site inspections or site visits were limited in 2021. Agnico Eagle worked with regulators throughout the year to develop virtual site visits as well as in conducting non-contact site visits. During these non-contact site visits, Agnico Eagle's Detached Operation Protocol was strictly enforced, as well as all applicable public health guidelines. Table 26 summarizes inspections and site visits that took place in 2021. No Action Required or Non-Compliances were identified by the authorities who conducted the inspections in 2021. Follow-up information required by the inspectors was provided by Agnico Eagle when applicable.

Table 26: Inspections and site visits by regulators in 2021

Date	Authority	Topic	Feedback/Outcome
February 2, 2021	CIRNAC	Non-contact site inspection	A non-contact site inspection was conducted by CIRNAC Enforcement Officers and led by Agnico Eagle Environment Coordinator and Environment General Supervisor in a separate vehicle. The site visit started at the northern extent of the site, with the emulsion plant, using CP1 and Maintenance shop Roads and driving by the main camp, northern edge of the industrial pad, TSF, Tiriganiaq Open Pit 1 via paste plant road and Tiriganiaq Open Pit 2 via SP4. The visit concluded after driving though exploration camp. No follow-up was required and no concerns were raised by CIRNAC in their inspection report dated May 17th, 2021.
May 18, 2021	CIRNAC	Non-contact AWAR & Bypass Road inspection	A non-contact AWAR and Bypass Road inspection was conducted by CIRNAC Resource Management Officers and led by Agnico Eagle Environment General Supervisor, RMMS & Compliance Coordinator and Hydrology/Hydrogeology Technician in a separate vehicle. The inspection drive started at Itivia, to continue north on the Bypass Road and the AWAR. Culverts and bridges were observed, as well as areas of concern along the road during previous years' freshet.
June 11, 2021	CIRNAC	Non-contact site inspection	A non-contact site inspection was conducted by CIRNAC Resource Management Officer and led by Agnico Eagle RMMS & Compliance Coordinator, Hydrology Specialist and RMMS & Compliance Technician in a separate vehicle. The inspection drive started at the north end of the site, at the trench located directly downstream of the September 22nd, 2020 10,000 L diesel spill near the boiler emergency generator on main camp. Afterwards, the following water infrastructures were showed to the inspector: CP3, Culvert 1, Culvert 2, Snow Cell and P-Area, CP4, P3, CP1, SP1, CP5 and CP6. The inspection was concluded by a visit of Exploration Camp. No particular concerns were raised by the inspector at the conclusion of the site visit. Two follow-up questions were asked by CIRNAC via email on June 14th, concerning the amount of water that had been pumped from the trench mentioned above and sampling carried out at this location, and about the nature of sediment observed along Channel 3 along the TSF. The information required was provided by Agnico Eagle in an email on June 21st 2021. In summary, Agnico Eagle answered the fine sediment collecting on the southern toe of the TSF slope is tailings material brought by snow removal operations and/or from the wind. Any tailings materials along the outside slopes will be cleaned and placed back in the TSF as per usual yearly procedure. As for the volume pumped from the trench, Agnico Eagle answered approximately 410.5 m^3 of water had been pumped from the trench located downstream of the diesel spill (September 22nd, 2021) between May 11th and June 17th, 2021.
October 4, 2021	KHTO	Non-contact site inspection	A non-contact site visit was conducted by KHTO inspectors and manager and led by Agnico Eagle Water Management General Supervisor and Environment Coordinator. A general site tour was requested from HTO, for new employees (inspectors). The following locations were pointed out to them: Landfarm B, Meliadine Lake Diffuser Line, Tiriganiaq Open Pit 2, WRSF3, Discharge to sea truck loading station, 3M fuel farm, Warehouse laydown, CP1, OP2, WTC-EWTP, Crusher and Mill, Landfarm A, Freshwater Intake, WTP, Main Camp, Emulsion Road and Plant, TSF, Landfill, WRSF1, Portal 1 and Portal 2, Paste Plant, Tiriganiaq Open Pit 1 and Vent Raise. No follow-up was required after the site tour was concluded.

October 5, 2021	CIRNAC	MEL-14 Sampling	A MEL-14 sample was executed by Agnico Eagle RMMS & Compliance Coordinator and Hydrology Specialist and CIRNAC Resource Management Officer. CIRNAC Officer followed Agnico Eagle personnel in a separate vehicle to the EWTP. MEL-14 sampling station was sampled by both CIRNAC and AEM. No particular concerns were raised during the sampling.
October 21, 2021	CIRNAC	Non-contact site tour	A non-contact site tour took place for CIRNAC new inspector. Agnico Eagle Environment Coordinator, Environment General Supervisor, Hydrology Specialist and RMMS & Compliance Technician led the tour and the CIRNAC Officers followed in a separate vehicle. A general site tour was completed. The following locations were visited: Emulsion plant, TSF, CP3, Tiriganiaq Open Pit 1, Tiriganiaq Open Pit 2, Water intake, Main Camp, Exploration Camp and Partisol Unit. A stop was made on the AWAR (between KM 8 and 9), where inspectors asked about the use of logs that were put in place on the east side of the road and what would trigger the installation of a culvert versus the use of woodchips/straw logs. Agnico Eagle explained the logs were used as sediment transport mitigation measure, and that permanent measures such as culverts would be used for a re-occuring issue throughout the years. The inspection was concluded at Itivia. No follow-up was required after this inspection.

10.3 AWAR

In 2019, Agnico Eagle began transporting treated saline effluent by truck for discharge to sea, resulting in increased traffic on both the AWAR and the Bypass Road. Table 27 shows the 2021 traffic observed on the AWAR in comparison to the FEIS's predictions. Appendix 33 shows detail of the AWAR traffic data.

In order to monitor rates of dust deposition along the AWAR, Agnico Eagle has refined its dustfall monitoring by establishing 3 transects at kilometers 4, 10, and 23 (DF-1, DF-2, and DF-3, respectively). Each transect includes samples at 25 m, 100 m, and 300 m on the east (downwind) and west (upwind) side of the road. The use of transects rather than single samplers is in line with common practice and allows Agnico Eagle to verify if dustfall rates decline from the AWAR as predicted in the FEIS.

As discussed above in section 7.8, for AWAR and Bypass Road dustfall transects monitoring stations, overall rates of dustfall were lower than ever observed previously, despite similar or increased traffic in 2021. Historically (2019 and 2020), annual average rates of dustfall have only exceeded AB-Rec at the 25-m distance, and in 2021, average dustfall was well below the guideline for all distances. In total, three of the 62 total dustfall samples from transects exceeded the AB-Rec guideline in 2021. These results indicate low rates of dustfall overall, as discussed in the Air Quality Monitoring Report in Appendix 24.

Table 27. 2021 AWAR monthly traffic summary

Month	Total traffic	**Predicted traffic (FEIS)**
January	1321	1178
February	1061	1064
March	1153	1178
April	1129	1140
May	1319	1178
June	1434	1062
July	1866	1087
August	2375	1099
September	3889	1056
October	2243	1178

November	1413	1140
December	1050	1178
Total	20253	13538

10.4 MARITIME TRANSPORTATION

During the 2021 shipping season, a total of 29 vessels, two of which were tugs (19 cargo and 10 fuel) travelled to Meadowbank (13 vessels), Meliadine (9 vessels), or to both Meadowbank and Meliadine (seven vessels) between June 26 and October 29. All events occurred when the Melvin Bay was free of ice and the weather was not a risk to the activity.

A summary of Groupe Desgagnés and Woodward Vessels during the shipping season can be found in Table 28. No incident was reported during the 2021 maritime transportation. Agnico Eagle continued to implement in 2021, in accordance with the TEMMP, a protocol to ensure that all equipment and bulk supplies must arrive to Mine site free of soil or plant debris to minimize the risk of invasive plant introduction. Invasive plant inspection surveys was completed on cargo in Becancour, prior to being loaded onto shipping vessel. Carrier had closely follow the procedure and have confirmed that each equipment/sea can was free of invasive plant.

Table 28. Summary of Groupe Desgagnés and Woodward Vessels during the shipping season (June to October 2021)

Vessel Name	Fuel or Cargo	Project and Number of Trips			Total Trips
		Meadowbank	Meliadine	Meadowbank and Meliadine	
Kivalliq W	Fuel	1	-	1	**2**
Kitikmeot	Fuel	1	1	-	**2**
Tuvaq W	Fuel	2	1	-	**3**
Marlin Azurite	Fuel	2	-	-	**2**
Qikiqtalluk W	Fuel	-	1	-	**1**
Nordika Desgagnés	Cargo	-	1	3	**4**
Taiga Desgagnés	Cargo	1	1	-	**2**
Atlantic Elm Tug	Cargo	1	-	-	**1**
Atlantic Beech Tug	Cargo	1	-	-	**1**
Atlantic Marlin*	Cargo	1	-	-	**1**
Atlantic Sea Lion*	Cargo	1	-	-	**1**
Acadia Desgagnés	Cargo	-	-	1	**1**
UHL Passion	Cargo	1	1	1	**3**
Zélada Desgagnés	Cargo	-	1		**1**
Miena Desgagnés	Cargo	1	2	1	**4**
Total		**13**	**9**	**7**	**29**

SECTION 11. PUBLIC CONSULTATION

As required by Water License 2AM-MEL1631 Schedule B, Item 25: ***A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions.***

And

As required by Water License 2BB-MEL1424 Part B, Item 6m: ***A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted*****;**

And

As required by NIRB Project Certificate No.006 Condition 103: ***The Proponent is encouraged to consult with the Kangiqliniq Hunters and Trappers Organization and the Kivalliq Socio-Economic Monitoring Committee and to make all reasonable efforts to engage Elders and community members of the Kivalliq communities in order to have community level input into updates to its monitoring plans, programs and mitigative measures. This type of engagement will ensure that these programs and measures have been informed by traditional activities, cultural resources, and land use as such may be implicated or impacted by ongoing Project activities. All plans are to include a feedback mechanism for consulting with residents of the Kivalliq, including the provision of results from the Proponent's wildlife monitoring programs to each community. The Proponent shall submit updated plans to the NIRB within 30 days' of their revision and/or finalization.***

11.1 COMMUNITY MEETINGS IN CHESTERFIELD INLET

A teleconference was held on May 26th, 2021 with Chesterfield Inlet Hamlet representatives to present the 2021 Sealift Season schedule. Due to COVID-19 exceptional circumstances, Agnico Eagle was not able to hold the usual community information meetings in person. During the teleconference, the following topics were presented:

- Vessel routing from Quebec to Nunavut and routing to Rankin Inlet
- Monitoring of marine mammals and seabirds
- All Weather Access Road (AWAR) closure process
- Caribou Monitoring
- Process to find live information about the vessel routing
- Process to ask questions and raise concerns via Tusaajugut 'We are Listening'

Nunavut Sealink & Suppy Inc—DeGagnes Transarctik representatives and Agnico Eagle Environment team were present during the teleconference to answer any questions or concerns. DFO representative, Edyta Ratajczyk, was invited to attend the teleconference, however, no representative joined the call.

Despite COVID-19 challenges Agnico Eagle ensured Chesterfield Inlet community members and key stakeholders are continuously informed and consulted on various topics. In 2021, the following community engagement activities took place in Chesterfield Inlet:

- One (1) public consultation to collect and validate information for Meliadine Extension
- One (1) meeting with Elders to collect IQ testimony on Shipping route in Chesterfield Inlet.
- Five (5) Mental Health Interview with the Hamlet, Recreational Center and RCMP to present and collect answers for Nunavut Mental Health Project

The purpose and outcomes of the above engagement initiatives are summarized in Appendix 34.

11.2 COMMUNITY MEETINGS IN RANKIN INLET

As part of Agnico Eagle's ongoing engagement with Elders and members of the community of Rankin Inlet, on behalf of Agnico Eagle a representative from Azimuth Consulting Group Inc. travelled to Rankin Inlet in March 2021. The purpose of the site visit was to listen community concerns about potential impacts to the traditional uses and health of lakes and rivers near the Meliadine mine and Rankin Inlet, and to assess interest in initiating a community-based monitoring program for water quality and fish health. Activities in Rankin Inlet included:

- Two (2) public meetings on March 18, 2021 at 3pm and 7pm. The purpose of these meetings was to discuss previously raised community concerns related to changes in the water quality, identify drinking water/ice collection locations around Rankin Inlet, and to discuss community priorities for water quality and fish health monitoring programs. Ten (10) community members and (1) one translator attended the 3pm meeting, while six (6) community members (mostly HTO board members) and one (1) translator attended the 7pm meeting.
- Collection of ice and water on March 23rd and 24th from locations that were identified during the public meetings.
- Hosting an open community tea/water tasting event on March 26, 2021 from 10 am to 4 pm, where individuals were welcomed to provide comments on the tea/water from the four (4) different sources that were available. The event also provided a valuable opportunity in an informal setting to continue discussions on water quality, fish health, and community-based monitoring. Forty-one community members and one translator attended the tasting event.

The Rankin Inlet Community Meeting and Tea Tasting Event Summary Report is appended to the 2021 NIRB Annual Report in Appendix 35.

A teleconference was held on June 15th, 2021 with Rankin Inlet Hamlet representatives to present the 2021 Sealift Season schedule. Due to COVID-19 exceptional circumstances, Agnico Eagle was not able to hold the usual community information meetings in person. During the teleconference, the following topics were presented:

- Vessel routing from Quebec to Nunavut and routing to Rankin Inlet
- Monitoring of marine mammals and seabirds
- All Weather Access Road (AWAR) closure process
- Caribou Monitoring
- Process to find live information about the vessel routing
- Process to ask questions and raise concerns via Tusaajugut 'We are Listening'

Nunavut Sealink & Suppy Inc—DeGagnes Transarctik representatives were present during the teleconference to answer any questions or concerns.

A teleconference was held on August 17th, 2021 to present the 2021 Cyanide Transportation program. Due to COVID-19 exceptional circumstances, Agnico Eagle was not able to hold the usual community information meetings in person. The Rankin Inlet Hamlet and HTO, Fire Department, Health Center and RCMP representatives were invited for the teleconference. However, Rankin Inlet Hamlet and HTO did not join. During the teleconference, the 2021 Cyanide Transportation safety and monitoring procedures were presented as well as the communication plans. In addition, Agnico Eagle presented the COVID-19 measures undertaken during the transportation to ensure minimal impact on the surrounding community.

Despite COVID-19 challenges Agnico Eagle ensured Rankin Inlet community members and key stakeholders were continuously informed and consulted. In 2021, the following community initiatives took place in Rankin Inlet:

- Two (2), Open Houses
- One (1) Public Meeting –Coffee and Chat
- Two (2) Meliadine Community Bus Tours –Elders and General Public
- Rankin Inlet Fishing derby - Sampling activity
- 10 Group Consultations with various subgroups including the HTO, CLARC, Elders, Women, Kivalliq Wildlife Board, Cabin Owners and the Public to collect and validate information for Meliadine Extension

The purpose and outcomes of the above engagement initiatives are summarized in Appendix 34.

11.3 MEETINGS WITH RANKIN KHTO

In 2021, four (4) meetings, four (4) teleconferences, two (2) consultations, three (3) public meeting and one (1) event were held with the Rankin Inlet HTO. Agnico Eagle continued to have regular engagements on project activities throughout 2021, including regular communication between the Project Environment team and Rankin KHTO.

Meeting and teleconferences topics included:

- Meliadine Waterline and Saline Discharge at Itivia
- Spill Status Updates
- Virtual Meeting Room (VMR) for Meliadine Extension Projects
- Rankin Inlet Tea and Water Tasting Activity
- AWAR measures and Caribou migration season
- ICMC and Cyanide transportation

- Water Quality and Fish Habitat
- Updates on current and upcoming projects at the mine

The purpose and outcomes of the above engagement initiatives are summarized in the Engagement Table appended in Appendix 34.

In 2021, the Meliadine Environment department and KHTO Wildlife Coordinator kept communication regularly throughout the year through email and phone. General topics included renewal of the Memorandum of Understanding between Agnico Eagle and the KHTO, the role of the Wildlife Coordinator, reporting expectations, training of the new Wildlife Coordinator, wildlife monitoring, a major aspect of the wildlife monitoring agreement established with KHTO in 2019, and the hunter harvest study. Bi-weekly meetings were also scheduled from September 2021 and onward with new KHTO Wildlife Coordinator.

11.4 COMMUNITY LIAISON COMMITTEE MEETINGS – RANKIN INLET

In 2021, Agnico Eagle did not attend any meetings with the Meliadine Community Liaison Committee in Rankin Inlet due to COVID-19 pandemic restriction. The Committee is facilitated and chaired by the Hamlet of Rankin Inlet as a specific working group of the Hamlet and sometimes included representation from various groups and organizations. In 2020, Agnico Eagle planned to establish their own Community Liaison Committee to ensure that groups such as Elders, Youth, Hunters and Trappers Organizations, RCMP, etc. are regularly consulted on the operations, however, due to COVID-19 this initiative was paused. In 2021, Agnico Eagle planned to reconvene the initiative to establish their own Community Liaison Community but was impacted again by COVID-19.

11.5 ELDERS AND IQ VALIDATION

In 2021, Agnico Eagle developed a Kivalliq Inuit Elders' advisory committee comprised of 21 Elders from Baker Lake, Chesterfield Inlet, Rankin Inlet, Whale Cove and Arviat to integrate Inuit Qaujimajatuqangit (IQ), Inuit Societal Values (ISV) and community knowledge into our exploration, planning, workforce, wellness and operational plans. The selection of the committee members was led by Agnico Eagle's IQ Coordinator through extensive consultations with wildlife organizations and local leaders. The full report of the Kivalliq Inuit Elders Advisory Committee is appended in Appendix 36.

In 2021, engaging with Elders was ongoing – Agnico Eagle ensured to consult with Elders to collect and validate information. In 2021, following engagement initiatives took place with the Elders and members of the Kivalliq Elders Advisory Committee:

- One (1) consultations with Community Elders Group - Meliadine Extension
- Two (2) meeting on Melvin Bay Area and to collect IQ testimony on Shipping route in Chesterfield Inlet.
- One (1) Public Meeting with Elders and Woman Group on Meliadine Expansion
- Three (3) meetings with the Kivalliq Elders Advisory Committee on Nunavut and Rankin Inlet Mental Health project

- One (1) meeting with the Kivalliq Elders Advisory Committee on Meliadine and Meadowbank Complex operations update and Meliadine Extension activities.

The purpose and outcomes of the above engagement initiatives are summarized in Appendix 34.

11.6 SITE TOURS FOR RANKIN INLET RESIDENTS

Each year, Agnico Eagle offers a variety of ways for the residents of Rankin Inlet, as well as various other groups or individuals from the Kivalliq, to visit the Meliadine site. In 2021, Rankin Inlet community members were able to participate in a "no contact" site visit in October to the Meliadine operation. During the 'no contact' visit the residents of Rankin Inlet were brought to site via a bus, however, they did not enter any buildings or have direct contact with any employees on-site. The bus drove the community members to see parts of the site and they were able to step out at pre-defined spots.

11.7 COMMUNITY ENGAGEMENT INITIATIVES

Community initiatives that Agnico Eagle participated in during 2021 are summarized in Appendix 34.

Agnico Eagle and KHTO continue collaborating with regards to wildlife monitoring as supported by the Collaboration Agreement signed by both parties in December 2021. The KHTO participated to the 2021 Hunter Harvest Study (HHS), as well as other community hunters.

The 2021 HHS Report is in Appendix G of the TEMMP report (Appendix 26) and summarizes results of the 2021 HHS, accuracy of impact predictions and management recommendations. Consultations with local outfitters and guides will be further developed in the 2022 HHS.

11.8 COMMUNITY COORDINATORS PROGRAM

The Community Coordinators program consists of full or part-time Agnico Eagle Officer in all Hamlets in the Kivalliq Region, including Agnico Eagle’s offices in the communities of Rankin Inlet and Baker Lake.

The objective of the community based Agnico Eagle Officer is to provide a point of contact in each community to facilitate communications, provide services, and coordinate activities in the following areas:

- Support Human Resources (HR) department and the recruitment team.
- Assist HR and other Agnico Eagle departments to locate employees or potential employees as required.
- Provide advice and assistance to Agnico Eagle to organize and hold information sessions in the community on Agnico Eagle projects, initiatives, and engagement activities, including Labour Pool and business opportunities initiatives outlined in the Meliadine IIBA.
- Provide updates to the Hamlet Council and to other community stakeholders on Agnico Eagle activities.
- Distribute Agnico Eagle information and promotional materials.
- Participate in Agnico Eagle’s Nunavut donation initiatives and processes.
- Participate in organization community events and education initiatives.

This increased community involvement by the Community Officers will allow Agnico Eagle to achieve recruitment goals and the obligations for the NIRB and IIBA; therefore, rendering this position essential to Agnico Eagle's Nunavut operations. In 2021, all the seven (7) Kivalliq communities had a Community Liaison Officer. However, due to COVID-19 pandemic and subsequent restrictions, the new CLO Development Program was not fully launched. The aim of this program is to support Community Officers to develop new skills and advance in their positions.

11.9 COMMUNICATION

In 2018, Agnico Eagle launched a Facebook page for Meliadine which acts as another method with which it can inform the Kivalliq communities of important information, including road closures, recruitment information, and public meetings. This additional medium of communication was suggested by multiple stakeholder groups, including the Kivalliq Socio-Economic Monitoring Committee.

Agnico Eagle continues to use the Meliadine Facebook page as a key medium of communication with employees and Kivalliq communities. In 2021, the social media platform was used to keep communities of impact informed and build awareness on the following topics:

- COVID-19 related support available from AEM during the pandemic
- Return to work information for employees at home
- Baker Lake and Rankin Inlet community office hours of operation
- Employment information Session (EIS) dates in Kivalliq communities
- Business Opportunities Posts
- Job posting
- Sealift Season & Cyanide transportation
- All Weather Access Road – Awareness and Road Rules
- Nunavut Impact Review Board (NIRB) hearing dates
- Caribou Migration and related road closures

The above social media posts are outcomes of active management plans for example, the 'Sealift Season' posts are directly related to the Shipping Management Plan and the 'Caribou Migration' posts are product of the Wildlife Management Plan. Social media posts were used to encourage engagement from community members. In 2021 Agnico Eagle Nunavut Facebook pages made in total 420 posts, out of which 228 posts were for the Meliadine page and 192 for the Meadowbank Complex page.

In 2021, the Nunavut AEM website had blog posts on the following topic:

- Our Response to COVID-19 (7 blog posts)
- Spills Reports –total of one (1) blog post on this topic
- Agnico Eagle Helps Nunavut Revolutionize Firefight Training
- Information on fatal accident at our Hope Bay mine
- Update from Agnico Eagle Regarding Nunavut Posters
- Carved in stone story on soapstone donation
- Agnico Eagle provides assistance to Iqaluit during crisis by donating potable water

All the blog posts were re-shared on the Nunavut Facebook pages to reach wider community audience and to encourage engagement from the community of impact.

In 2020, a new webpage was developed: Water Management at Meliadine. This webpage consisted information on the following topics: Saline Water Diffuser, Meliadine Waterline Project, CP1 Discharge,

Meliadine Water License Amendment. In 2021, the webpage continued to be updated regularly with new monitoring data and other relevant information.

The AEM Nunavut team continues to use various social media platforms in an innovative manner to remain connected and engaged with the impacted communities.

- CP1 Discharge – specific website page
- Nunavut Labor Pool Facebook campaign – schedule shared on social media
- Virtual Meeting Room (VMR) – social media campaign for the “Future of Meliadine” session.

SECTION 12. SOCIO ECONOMIC

12.1 SOCIO-ECONOMIC MONITORING PROGRAM (SEMP, SEMC, SEMWG, SEMR)

As required by NIRB Project Certificate No.006 Condition 87: ***The Proponent is strongly encouraged to participate in the work of the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region, and to identify areas of mutual interest and priority for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the Kivalliq region as a whole.***

And

As required by NIRB Project Certificate No.006, Condition 88: ***The Proponent is encouraged to work in collaboration with other socio-economic stakeholders including for example, the KIA, GN, AANDC, and communities of the Kivalliq region, to establish a socio-economic working group for the Project to develop and oversee the Meliadine Socio-economic Monitoring Program. The working group should develop a Terms of Reference which outlines each member's roles and responsibilities with regards to, where applicable, project-specific socio-economic monitoring throughout the life of the Project. The Terms of Reference are to be provided to the NIRB upon completion, and within one year of issuance of the Project Certificate.***

And

As required by NIRB Project Certificate No 006, Condition 89: ***The Proponent shall develop the Meliadine Socio-economic Monitoring Program to monitor the predicted impacts outlined in the FEIS as well as regional concerns identified by the Kivalliq Socio-economic Monitoring Committee (SEMC). Where possible, the Proponent is encouraged to work in collaboration with all other socio-economic stakeholders such as the KIA, GN, AANDC and the communities of the Kivalliq region in developing this program, which should include a process for adaptive management and mitigation in the event unanticipated impacts are identified. Details of the Meliadine Socio-economic Monitoring Program are to be provided to the NIRB upon finalization, and within one year of issuance of the Project Certificate.***

In 2021, Agnico Eagle continued to meet the requirements in the above conditions through its work in the following:

- The Socio-Economic Monitoring Program (SEMP) acts as a framework for the monitoring program. It outlines the indicators, metrics, units of measurements, etc., including those that are mandated by the Project Certificates. Agnico Eagle commits to reporting on the SEMP annually. In 2022, Agnico Eagle proposed new indicators for Cultural and Traditional Lifestyle and Individual and Community Wellness (Housing and Food Security) Valued Socio-Economic Component (VSECs) to the Soci-Economic Monitoring Working Group (SEMWG). The motivation behind the review was to enhance Agnico Eagle's monitoring efforts and ensure subsequent community-based initiatives are based on immediate requirements. Based on the feedback from the SEMWG, the updated SEMP consists:
    - Two (2) new indicators under Cultural and Traditional Lifestyle VSEC
    - Four (4) new *housing* indicators under Individual and Community Wellness VSEC
    - Two (2) new *food security* indicators under Individual and Community Wellness VSEC

The updated SEMP can be found in Appendix 37.

- The SEMWG traditionally included GN and CIRNAC, however, in 2020 KivIA has officially joined the SEMWG. The aim of this working group is to support Agnico Eagle's SEMP and the Kivalliq Socio-Economic Monitoring Committee (KvSEMC). In 2022, Agnico Eagle organized one (1) teleconference with the SEMWG to propose: new indicators and metrics for the SEMP, Socio-Economic Monitoring Report re-design, and to receive an update 2021-2022 Kivalliq SEMC.

- The Kivalliq Socio-Economic Monitoring Committee (KvSEMC) meets annually to present data and consider socio-economic impacts and benefits of mining projects generally on the Kivalliq region. Members of the KvSEMC include Government of Nunavut (including specific departmental representation), Government of Canada, Kivalliq Inuit Association, Hunters and Trappers Organizations, Community representatives, community organizations and Project owners. The Government of Nunavut chairs the KvSEMC. Feedback provided in the KvSEMC informs the final Socio-Economic Monitoring Report. Additionally, the KvSEMC can recommend additional monitoring priorities. Agnico Eagle is an active participant in the KvSEMC. In 2021, due to COVID-19 pandemic and Kivalliq travel restrictions the 2020-2021 Kivalliq Socio-Economic Monitoring Committee meeting was not scheduled. Several email communications took place between Agnico Eagle and the SEMWG to host the 2020-2021 KvSEMC meeting. However, due to logistical challenges and community COVID-19 outbreaks the committee meeting could not be scheduled. Nonetheless, the Government of Nunavut and CIRNAC recognized that Agnico Eagle did their utmost to fulfill this Project Certificate requirement.

- The Socio-Economic Monitoring Report (SEMR) is the annual report on the SEMP. It is a comprehensive socio-economic monitoring report that contains Project-level data (data collected by Agnico Eagle at each Project site or regionally) and community-level data (data provided by or in communities), including data that is mandated by the Project Certificate. It is reviewed by the SEMWG prior to its submission, to allow for those groups to provide insight. In 2022, Agnico Eagle proposed a re-designed format of the SEMR to the SEMWG which was approved. In the new report formatted report, the sequencing of the Valued Socio-Economic Components (VSECs) has been re-ordered to enhance the flow from demographic through economic to social. Each VSEC section will be briefer and begin with a high-level summary, allowing sections to act as standalone documents. They will be written in more reader-friendly language, using simpler infographics and avoiding repetition or unnecessary technical detail. In the report, the data will be presented in singular graphs encompassing the three sites to simplify information and improve document flow.

- In 2020, at a SEMWG meeting Agnico Eagle proposed to move the deadline of the SEMR to meet the NIRB Annual Report submission deadline. This was based on past discussions with the SEMWG. This effectively moves the deadline from June 30 to March 31. The main impact of the change in reporting deadline is that some community-level data would not be available, and therefore some community-level data would be reported with a year-delay annually, however the benefit would be to better align reporting and review processes for Agnico Eagle and reviewers. The change was approved by the SEMWG. Therefore, Agnico Eagle is appending the 2021 Agnico Eagle Kivalliq Projects Socio-Economic Monitoring Report, in Appendix 38.

12.1.1 Socio-Economic Monitoring Report (SEMR)

As required by NIRB Project Certificate No.006, Condition 111: ***In its annual reporting to the NIRB, the Proponent is strongly encouraged to provide detailed descriptions of all employee programs and training including: a. Descriptions of the goals of each program offered; b. Language of instruction; c. Schedules and location(s) of when each program was offered; a. Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates; and, b. Completion rates for enrolled participants, noting Inuit and non-Inuit rates.***

And
As required by NIRB Project Certificate No.006, Condition 97*: The Proponent's project-specific socio-economic monitoring program should be updated to address the potential impacts to education and training which may arise from temporary, final and/or post-closure phases.*

And

As required by NIRB Project Certificate No.006, Condition 98: ***The Proponent is encouraged to work with the members identified as potential stakeholders in the socio-economic monitoring working group and with the Kivalliq Socio-Economic Monitoring Committee to review and monitor education utilization rate trends on an on-going basis to understand if the Project can be determined to be having an impact on the education system of the Kivalliq region and/or on any communities in particular.***

And

As required by NIRB Project Certificate No.006 Condition 108*: The Proponent is encouraged to consider providing access to counseling and treatment programs for substance and gambling addictions, and programs which address domestic, parenting, and marital issues that could affect employees and/or their families.*

And

As required by NIRB Project Certificate No.006, Condition 101: ***The Proponent shall include with its annual reporting to the NIRB a summary of employee origin information as follows: a. The number of Inuit and non-Inuit employees hired from each of the Kivalliq communities, specifying the number from each; b. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Qikiqtani regions, specifying the number from each; c. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.***

And

As required by NIRB Project Certificate No.006, Commitment 99*: The Kivalliq Socio-Economic Monitoring Committee and its membership are encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the Kivalliq communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effects of the Project on migration.*

And

As required by NIRB Project Certificate No.006, Commitment 109*: The Proponent is encouraged to work with the Kivalliq Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases and others as deemed appropriate.*

And

As required by NIRB Project Certificate No.006, Condition 110: ***The Proponent shall provide the NIRB with a description of wellness and cultural diversity/acceptance programming made available to employees and family or community members and shall report the following information with respect to each program to the NIRB annually: a. Language of instruction; b. Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates; c. Completion rates for enrolled participants, noting Inuit and non-Inuit rates; and d. Issues as may relate to program content which may have been noted or present either on site or in the community and which affect Project employment or employee wellness.***

And

As required by NIRB Project Certificate No.006, Condition 115: ***The Proponent is encouraged to work collaboratively with the Government of Nunavut Department of Health to monitor the impacts of the Meliadine Gold Project on health services within the LSA communities and specifically, Rankin Inlet***.

And

As required by NIRB Project Certificate No.006, Condition 93: ***The Proponent is encouraged to register all trades occupations, journey persons and apprentices working with the Project and to register any trades occupations listed in its forecast, as well as to provide the Government of Nunavut with information regarding the number of registered apprentices and journeypersons from other jurisdictions employed at the Project during each year of the Project's life.***

The section below summarizes Agnico Eagle's key socio-economic reporting, related primarily to employment and training. For the full report on the Project's socio-economic monitoring, please refer to Appendix 38.

Reports can also be viewed on the Socio-Economic Monitoring Committee website www.nunavutsemc.com or on Agnico Eagle's website http://aemnunavut.ca/media/documents/.

12.2 WORKFORCE

Agnico Eagle calculates the workforce based on headcount (snapshot of active employees taken at the end of the year, which includes full-time and part-time employees) and full-time equivalents (number of full-time positions based on hours worked, where one full time position is equivalent to 2,184 hours worked in a year).

- The number of active Agnico Eagle employees (headcount) working at Meliadine on December 31, 2021 was 631, of which 79 employees were Inuit employees.

- The number of contractors employed at the project is only calculated using full-time equivalents (FTEs) due to the cyclical nature of contractor work. Therefore, during 2021 there were approximately 691 full time equivalent (FTE) contractor positions, of which approximately 36 are filled by Inuit.

Taken together, there were 1,377 active employees (Agnico Eagle permanent, temporary, on-call, students and contractors), working full- and part-time jobs, at the end of 2021.

Agnico Eagle defines job statuses as follows:

- Permanent employee: an employee whose current job is not specifically tied to a short-term project and the position is expected to be required throughout the life of mine (LOM).
- Temporary employee: an employee whose current job will not continue beyond a specified period.
- On-call employee: an employee who has an undefined contract and is called upon when the need arises. It is expected that on-call employees will move to temporary or permanent positions as they become available.

The Table 29 below indicates the employment demographics for community of hire by headcount.

Table 29. Home communities of Agnico Eagle Inuit employees (by headcount)

Community of Hire	2021 Agnico Eagle headcount
Arviat	7
Baker Lake	5
Naujaat	3
Rankin Inlet	33
Chesterfield Inlet	3
Whale Cove	1
Coral Harbour	14
Kitikmeot	0
Qikiqtani	2
Outside of Kivalliq	16
Total	**84**

Agnico Eagle pays for the transportation of all Kivalliq-based employees from their home community to the mine for each work rotation. For employees coming from Arviat, Baker Lake, Chesterfield Inlet, and/or Whale Cove, Agnico Eagle has a service contract with Calm Air to transport employees by charter plane to Rankin Inlet. For employees coming from Coral Harbour and/or Naujaat, a commercial ticket is bought from their home communities to the Rankin Inlet airport. All employees are then driven by bus to site, including those from Rankin Inlet. For all other employees not located in the Kivalliq region, transportation is provided from Mirabel and Val-d'Or via a charter flight operated by Nolinor Aviation.

12.2.1 Employee retention

Based on Agnico Eagle's experience and testimonies of former employees, it was noted that many Inuit have never had full time work in their home communities, where full time employment opportunities are

potentially limited. Many such individuals want a job but working away from home for two weeks at a time in a structured industrial environment is a change that many have difficulty adapting. Furthermore, many Inuit employees have raised concerns about the lack of child support and family situations back home which makes it harder to stay away working for 14-days.

Exit interviews support this assumption and Figure 30 provides the reasons given for voluntary departures by gender.

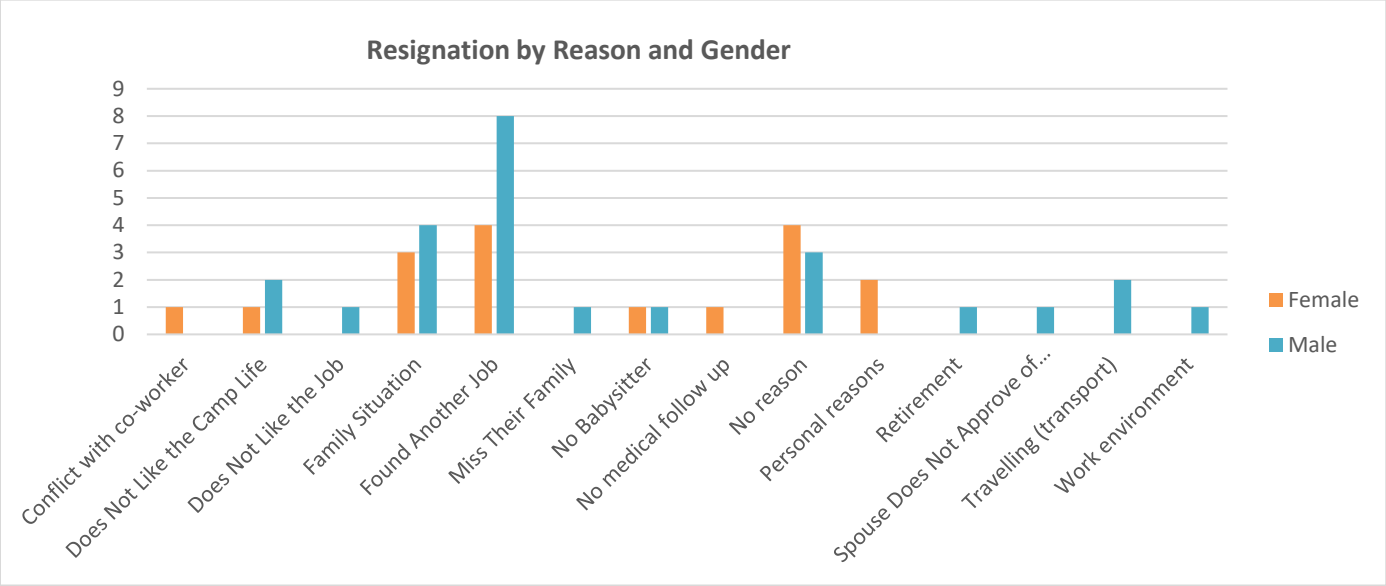

Figure 30. Reasons for voluntary departure

Agnico Eagle developed a new approach and has rolled out new initiatives with a focus on providing information, skills, and education to job applicants to ensure that they are better informed about what working life is like at a remote mine site, and to be better prepared to adapt, cope, and be successful in employment. The result is the development and implementation of a Labour Pool Process.

The Labour Pool Program consists of a suite of activities that provides future employees with information, skills, and education for working life and conditions in a remote, fly in/fly out, industrial workplace.

In 2021, the pre-employment program was reviewed. The revised two (2) weeks program is now a 10-days community based training consists of series of suite, including more practical workshops and training, incorporation of new technologies such as virtual reality to help guide new employees when they start working at the mine site.

12.2.2 Summer Student Employment Program

Agnico Eagle offers two summer employment programs that are accessible to students. Firstly, Agnico Eagle's company-wide policy offers a summer employment program to the children of all Agnico employees (both Inuit and non-Inuit) that are undertaking postsecondary education. Secondly, in 2019 Agnico Eagle also offered the Inuit Summer Employment Opportunities postings, which is targeted to Inuit students in high school or post-secondary and tries to match students to positions in their areas of interest. In 2021,

the Summer Employment program was offered only in the communities and not at the mine site to accommodate the COVID-19 situation. Advertisement was done in March and April however, AEM received very low number of applicants. A summer employment was provided to (1) one person at the Rankin Inlet office with the Community Relations team. In 2022, AEM and KIA will be working on a new strategy to encourage and support Inuit youths to participate in Agnico Eagle Inuit Summer Employment Program.

As per Agnico Eagle policies, students must be 18 years or over to work at the operation, and over 16 years old to work in the offices in Baker Lake or Rankin Inlet.

12.3 TRAINING

Agnico Eagle's Training Management System (TMS) and the Learning Management System (LMS) tracks and reports on training activities. The list of training provided can be found in Appendix 39.

12.3.1 Pre-employment training program

The Labour Pool Process, implemented in 2014 and revised in 2015 and 2021, is based on an agreement between Agnico Eagle and the KivIA through the IIBAs to offer pre-employment opportunities to Inuit from all Kivalliq communities. It is illustrated in Figure 31.

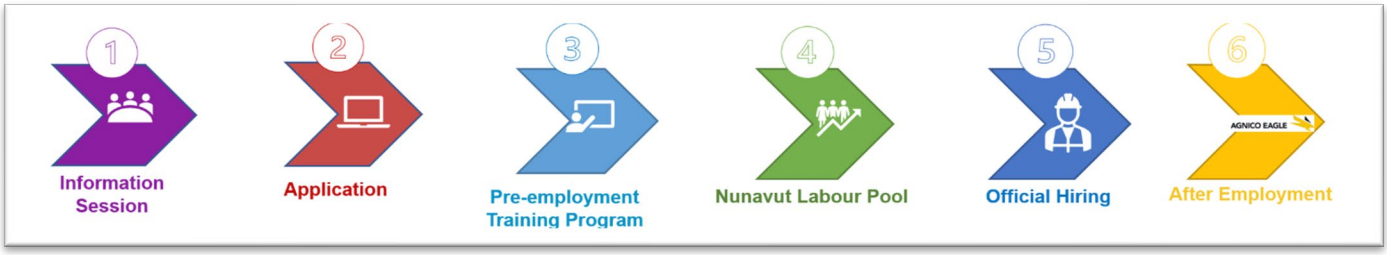

Figure 31: Labour Pool Process

The goal of the program is to pre-qualify candidates from Kivalliq communities through 4 steps:

1. Employment information sessions (EIS)
2. Online application which is facilitated by Employment Information Sessions
3. Pre-Employment Training Program (more details provided below)
4. Labour Pool List which is facilitated by the Labour Pool Coordinator

In 2021 Agnico Eagle and Kivalliq Inuit Association agreed to modify the Labour Pool Process via a Memorandum of Understanding (MOU). The Work Readiness and the Mandatory Trainings were merged to become the Pre-employment Training program (10-day community-based training). The modification will reduce the Labour Pool Process steps and decrease the length of delay for applicants to get employment.

Step 1: Employment Information Sessions (EIS)

As part of the Labour Pool Process, Employment Information Sessions (EIS) are to be conducted in all Kivalliq communities. The purpose of the information session is to provide information about the mine site, the work lifestyle requirements, career opportunities and understanding how to apply online.

In 2021, Agnico Eagle re-introduce the employment information sessions after the pause due to COVID-19 situation. In total, 11 employment information sessions were completed and in total 98 individuals attended those sessions. Three (3) scheduled sessions were canceled due to COVID-19 outbreaks.

Step 2: Online Application

The second step in the Labour Pool Process is to apply online. In order to facilitate online application in the communities, Agnico has a Community Liaison Officer (CLO) in each Kivalliq community who can deliver employment information sessions and provide one-on-one assistance to interested candidates with their online application.

In 2021, CLOs were present in the seven (7) Kivalliq communities. They were able to support the online application via the phone or in-person from the Agnico Eagle Hamlet offices. Also, in May of 2021, a new Labour Pool Coordinator was hired at the Agnico Eagle Rankin Inlet Office. The coordinator is available to support the applicants but also the CLOs in all the communities.

Step 3: Pre-Employment Training Program

Agnico Eagle continues to utilize the Work Readiness Training program that was developed as a pre-employment initiative. In 2018, the Work Readiness Training was delivered in collaboration between Aglu Consulting. The Work Readiness program is the next step of the Labour Pool Process for those individuals who have applied online and who do not have work experience relevant to the positions for which Agnico Eagle hires.

The objective of the program is for Inuit applicants to be better prepared for the work environment in an industrial setting. Mandatory trainings are now included in the Pre-employment training program which are delivered in the communities. The program provides coaching on a range of issues including: awareness of employers' unspoken expectations, communication in the workplace, and problem-solving skills for resolving workplace issues.

In 2021 AEM collaborated with Ilitaqsiniq (Nunavut Literacy Council) to review the program and adapt the curriculum to the Nunavummiut clientele. The training approach and teaching materials integrated IQ and Adult Education principles however, the themes and subjects remained the same. The training is now a 10-day community-based training. In 2021, Agnico Eagle delivered three (3) Pre-employment Training programs—One (1) in Baker Lake and two (2) in Rankin Inlet. In 2021, a total of 25 participants completed the Pre-employment Training program.

Step 4: Labour Pool List

The Labour Pool List is a list of candidates who have successfully completed the steps of the Labour Pool Process. These candidates are now eligible for opportunities with Agnico Eagle or Agnico Eagle's contractors. The list is managed by the Labour Pool Coordinator.

In 2021, the Labour Pool list remains updated following each step of the Labour Pool process by the Labour Pool Coordinator.

12.3.2 Training Hours

The following categories of training are available:

- Mandatory: Mandatory training related to compliance with the Nunavut Mine Act, as well as training that is mandated according to Agnico Eagle Health and Safety policies. Many of these training sessions are offered via e-learning prior to employee's arrival on site.

- General: Training activities required at a departmental level and covers many employees working in different departments. General training includes training on light duty equipment as well as enterprise software systems and cross-cultural training.

- Specific: Focused on developing individual competencies related to a specific position. This training qualifies individual workers for promotion following their progression through the Career Path. These training programs are provided by in classroom (theory) learning as well as practical (one-on-one) learning.

- Emergency Response Training (ERT).

The following Table 30 provides the training hours provided to Agnico Eagle employees at Meliadine (excluding contractors) in 2021:

Table 30. Training hours provided to Agnico Eagle employees at Meliadine

Type of Training	Inuit	Non-Inuit	Total
Mandatory	753.75	7567.25	8321
General	205	3455.25	3660.25
Specific	4654	18201	22855
Specific Practical Evaluation	99	721	820
Specific Primary Evaluation	3	66	69
ERT	110	4324	4434
Total	**5825**	**34335**	**40159**

Due to COVID-19 pandemic many Nunavut-based workforce and trainees were sent home to prevent community transmission. On June 25th, 2021, the first cohort of Nunavut-based workforce were reintegrated at Meliadine. The reintegration was completed by October 2021. In 2021, the focus of the training department was to provide support to the Nunavummiut to safely transition into their job position.

12.4 TRAINING PROGRAMS

12.4.1 E-learning

Before coming to an Agnico Eagle site for the first time, newly hired employees must complete their Mandatory Training online, which consists of six (6) modules: General Induction, WHMIS, Fire Suppression, Job Hazard Analysis and Work Card, Spill Response, and Occupational Health and Safety (Personal Protective Equipment, Ladder Safety, Surface Standard Operating Procedure). The General Induction chapter provides general information about Agnico Eagle and working life at the mines, waste management, as well as information on the IIBAs and archaeological awareness. The e-learning training material has been translated into English, French, and Inuktitut.

In 2020, an external firm started the development of all six (6) E-learning modules. The six (6) new modules that were in development in 2020 and early 2021, were launched in 2021 to replace the previous versions. In 2021, a new version of the Chemical Awareness and the Mill Induction courses has been developed and launched for Meadowbank. In 2021, the SOP Mine - Class module has been developed and launched for Meadowbank. This online module is the first part of a 3-part course with an objective to acquire the necessary knowledge to drive on the Meadowbank site, open pit and roads. In 2022, the new modules are planned to be launched in Meliadine.

12.4.2 Cross-Cultural

Implemented first at Meadowbank, the Cross-Cultural Training Program is a 5 hour in-class training course. This course allows employees from different cultures and backgrounds to understand each other’s culture to improve understanding and communication at the workplace.

The program was revisited with the assistance of the Nunavut Literacy Council in 2013, and a revised program was initiated in 2014. This s program is mandatory for all Agnico Eagle employees and contractors who will be on site for six months or more. Cross-cultural training began at Meliadine in 2017.

Spring and Summer of 2021, all supervisors re-took the Cross-Cultural course in preparation for the return of the Nunavummiut and to ensure a mindset of cultural awareness on-site. In 2021, Meliadine had 13 sessions and Meadowbank had 27 sessions. A total of 217 AEM employees and 75 contractors have completed the training.

12.4.3 Career Paths

The Career Path Program was designed in 2012 at Meadowbank, with the intention of supporting upward mobility of Inuit employees at Agnico Eagle’s Project sites. This program identifies the incremental steps that any employee is required to complete to advance in their chosen career of interest.

The objective is to have only internal promotions of employees, with external candidates being hired only as an entry level position to feed the trainee programs at the base.

In 2021, two (2) Career Paths have been launched: The Warehouse Career Path at Meadowbank and the Warehouse Career Path at Meliadine. Also, three (3) Career Paths have been reviewed: The Energy &

Infrastructure Career Path at Meadowbank, and the Underground and the Process Plant Career Paths at Meliadine.

12.4.4 Apprenticeship Program

The Apprenticeship Program combines on-the-job learning and in-school technical instruction to allow Inuit employees the opportunity to be educated and trained in the trade of their choice. By the end of the program, the apprentice is able to challenge their Certificate of Qualification (COQ) to become a Journeyperson and will have the opportunity to challenge their Red Seal Exam. Currently, Agnico Eagle offers (9) trades: baker, cook, carpenter, millwright, electrician, heavy duty equipment technician, welder, housing maintainer and plumber.

In 2019, the program was reviewed in order to substantially increase our support to apprentices while they are at school for their technical instruction. Logistical, material, educational and financial support is provided to our Apprentices.

In 2021, one (1) apprentice went to technical training in Alberta. Two (2) apprentices continued their training on-the-job during the year: one (1) apprentice at Meliadine and one (1) pre-apprentice at Meadowbank. All other apprentices stayed home due to COVID-19 pandemic restrictions until the site re-integration which started in June 2021. At the end of 2021, there were five (5) apprentices and pre-apprentices at Meadowbank and two (2) apprentices and pre-apprentices at Meliadine.

Since 2015, a total of eight (8) employees successfully completed their apprenticeship training within Agnico Eagle.

12.4.5 Adult Educator

In 2018, Agnico Eagle started an on-site education strategy at its Nunavut sites, starting with a permanent Adult Educator at Meadowbank. The objective of the Adult Educator is to support Agnico Eagle employees to develop numeracy, literacy, and soft skills which will assist employees to access higher job positions and be successful in their apprenticeship journey. The Adult Educator works with pre-apprentices to help them gain the academic skills and confidence to successfully pass their trade’s entrance exam, as well as apprentices to support them in their level exams. Instruction takes place during an employee’s workday and is specific to their learning needs.

The Adult Educator is also tasked with planning and implementing school-based initiatives such as TASK (Trades Awareness, Skills and Knowledge) week. The goal of TASK week is to motivate the students to think about their future after graduation.

In 2021, due to the absence of our Nunavummiut employees for half of the year, Meadowbank’s Adult Educator supported the management of the Leadership Development Program. Nonetheless, the Adult Educator was able to continue supporting one (1) Nunavummiut apprentice who was living in the south. In June 2021, once the Nunavummiut workforce returned to work the Meadowbank Adult Educator started to provide support to Nunavummiut on pre-trades skills and level exams.

In 2021, as planned the Adult Educator program was not launched in Meliadine. This program is included in initiatives to be implemented in the coming years.

12.4.6 Emergency Response Team (ERT) Training

At Agnico Eagle, the most important priority is to keep employees safe. Meliadine Emergency Response Team (ERT) consists of internal employees that volunteer to respond to emergencies such as fire. The ERT practice takes place weekly and each member must attend at least six (6) practices throughout the year. Currently, there are 79 active Emergency Response and Mine Rescue members and out of which two (2) are Inuit members. Due to COVID-19 pandemic response and isolation restrictions one (1) Inuit out of two (2) are not active. In 2021, two (2) basic mine rescue courses were given in order to on-board new ERT members. In total, 61 training sessions were given that included weekly practices, mock scenarios and specialized trainings.

12.5 GENERAL SOCIO-ECONOMIC PROVISIONS

12.5.1 Housing and Home Ownership

As required by NIRB Project Certificate No.006 Condition 112: ***The Proponent is encouraged to investigate measures and programs designed to assist Project employees with pursuing home ownership or accessing affordable housing options.***

And

As required by NIRB Project Certificate No.006 Condition 114: ***The Proponent is encouraged to collaborate with the Government of Nunavut – Nunavut Housing Corporation prior to the development and inception of its programs relating to financial literacy and planning to ensure that relevant and accurate information about housing and home ownership is available and considered for inclusion.***

Agnico Eagle Mines Ltd continues to support the growing AEM local workforce in the Kivalliq region of achieving home ownership. In 2019, Agnico Eagle received NR Can funding ending in December 2021 for a project called Kivalliq Region Energy Efficient Worker Housing Program (“Program”). This Program seeks to assess the current gaps in the arctic building supply chain so to introduce commercially available energy efficient innovation to shift regional construction paradigms towards Net-Zero energy efficient multiplexes. In cooperation with Kivalliq Inuit, local entrepreneurs and centres of industrial expertise, the Program will introduce the concept of Path to Net Zero open innovation to local builders.
This Program, funded in the amount of $200,000 matched by Agnico Eagle’s in-kind contribution of $200,000, has identified current supply chain gaps and has uncovered energy efficient and economical solutions to be made available for local builders. Path to Net-Zero housing will appeal to an underserved middle class market (single women, women with children and young couples) in Nunavut.

12.5.2 Labour Force

Agnico Eagle submitted the latest staff schedule on May 27, 2019. The 2021 Labour Market Analysis (LMA) is presented in Appendix 40.

12.5.3 Training and Development

Agnico Eagle works with training organizations and government departments regularly through the Kivalliq Socio-Economic Monitoring Committee, through the IIBA with the Kivalliq Inuit Association, through the Memorandum of Understanding with the Government of Nunavut, and through one-on-one partnerships

and collaboration with organizations such as the Hamlet of Arviat, the Nunavut Literacy Council, Nunavut Arctic College, Aglu Consulting, and more.

The listing of formal certificates and licenses was sent to NIRB on November 7, 2018. There have not been any updates since the last submission.

12.6 IMPACT ON THE SOCIO-ECONOMIC ENVIRONMENT FROM THE DISCHARGE TO SEA ACTIVITIES

In their 2020-2021 Annual Monitoring Report and Board's Recommendations, NIRB recommended Agnico Eagle provides the following on the 2021 continuation of the saline discharge strategy (Recommendation 1):

> "An analysis on the impacts on air quality, the terrestrial environment, the marine environment, and the ***socio-economic environment*** from the increased activities for the 2020 and 2021 open water seasons compared to previous years. The reporting of the data and analysis of these year-over-year comparisons should take into consideration that the results will feed into whether any additional management or monitoring would be required should the increased trucking and discharge need to continue."

Agnico Eagle provided the NIRB on February 7th, 2022 a preliminary report to address this recommendation with available monitoring results at the time of reporting. The preliminary report presented an update on trucking and discharge activities that occurred during the 2021 open water season, as well as a summary of the:

- 2021 Ocean Discharge Monitoring Program summary and the 2021 Discharge Season results, including an analysis of the impacts on the marine environment;
- 2021 Terrestrial Environment Management and Monitoring Plan (TEMMP) update;
- 2021 Preliminary Air Quality Monitoring report.

Socio-economic impacts of the discharge to sea activities were evaluated in the FEIS Addendum – Environmental Assessment of Treated Groundwater Effluent Discharge into Marine Environment, Rankin Inlet (Agnico Eagle, June 2018). Potential pathways through which the discharge to sea activities could affect Valued Socio-Economic Components (VSECs) are presented in this document submitted and approved by NIRB. Effects pathways were assessed as having a minor (i.e. negligible) effect on VSECs, through environmental design features and implementation of mitigation. No further or additional impacts are to be reported for the 2021 discharge to sea activities in comparison with previous years.

The contractor Kivalliq Contractors Group Ltd (KCG) was hired for the discharge to sea project in 2021 and previous years (2019-2020). KCG is part of Groupe Sana, trade name that refers to the various companies and partnerships in Nunavut created by Groupe Gilbert Ltee. KCG is a registered Inuit firm in the region of Kivalliq.

Furthermore, only Agnico Eagle owned property was used directly for the discharge to sea activities in 2021, with the exception of the boat launch area at Itivia which was used to launch Agnico Eagle's boat to install and remove the diffuser line prior to and at the end of the discharge to sea season. The socio-economic impact related to the limited use of the boat launch area is considered minor.

As for potential impacts on the environment from increased discharge to sea activities in 2021 that could eventually result in socio-economic impacts, they are also considered limited. The caribou migration near

Meliadine site took place in June and July 2021; while discharge to sea activities occurred afterwards, between August 12 and October 5, 2021.

The 2021 air quality monitoring did not indicate any air quality trends of concern, and results were within applicable air quality standards and FEIS predictions. Findings of the noise monitoring program did not indicate the need to propose changes to existing noise monitoring plans and mitigation measures. No noise-related complaints have been received for the Meliadine site. Finally, comparison of water quality monitoring results from the exposure and reference areas at Melvin Bay seem to indicate there is no appreciable difference between the 2 locations, which support the assumption there was no adverse impact from the increased discharge of effluent in 2021 on the marine environment.