

Report Title: The Nunavut Impact Review Board’s 2019 Site Visit Report for Agnico Eagle Mines Limited’s *Meliadine Gold Mine Project* (NIRB File No. 11MN034)

Project: Meliadine Gold Mine Project
Project Location: Kivalliq Region, Nunavut
Land Tenure: Inuit Owned Land

Project Owner: Agnico Eagle Mines Limited
Meliadine Mine Site
Rankin Inlet, NU
X0C0G0

Proponent Contact: Dan Gorton, Environmental Coordinator

Telephone: (819) 759-3555, ext. 4603996

Visit conducted by: Sophia Granchinho, Manager, Impact Assessment
Phone: (867) 857-4829; email: sgranchinho@nirb.ca

Erin Reimer, Technical Advisor I
Phone: (867) 857-4566; ereimer@nirb.ca

Site visit date: August 20, 2019
Last site visit: August 17, 2018

Report prepared by: Sophia Granchinho, Manager, Impact Assessment

Photographs by: Sophia Granchinho & Erin Reimer

Cover Photograph: 1) Sign at main camp
2) Meliadine Mine Site
3) Excavator at landfarm
4) Itivia Bay at Rankin Inlet
5) Processing plant at Meliadine Mine Site

TABLE OF CONTENTS

1	Introduction.....	1
1.1	OBJECTIVE & PURPOSE OF A PUBLIC INFORMATION SESSION	1
1.2	OBJECTIVES & PURPOSE OF SITE VISITS	1
1.3	PREPARATIONS FOR THE SITE VISITS.....	1
2	Public Information Meeting.....	2
2.1	ADVERTISEMENTS	2
2.2	MEETING MATERIALS	2
2.3	SUMMARY OF THE MELIADINE PUBLIC INFORMATION SESSION	2
3	Meliadine Gold Mine Site Visit.....	3
3.1	OVERVIEW OF SITE VISIT	3
3.2	MELIADINE GOLD MINE PROJECT OVERVIEW	4
3.3	GENERAL OBSERVATIONS FOR MELIADINE MINE SITE	6
3.3.1	<i>Itivia Harbour</i>	6
3.3.2	<i>Bypass Road</i>	7
3.3.3	<i>All-Weather Access Road (AWAR)</i>	8
3.3.4	<i>Mine and camp infrastructure</i>	10
4	Site Observations Based on NIRB Project Certificate No. 006.....	16
5	Recommendations and Direction.....	18
5.1	REVEGETATION	19
5.2	DUST SUPPRESSANTS	19
5.3	CAPACITY ISSUES AT LANDFARM AND LANDFILL	19
5.4	WASTE MANAGEMENT.....	19
6	Conclusion	20

List of Figures

Figure 1: Meliadine Mine Site (from Agnico Eagle’s 2018 Annual Report; Figure 1).....	5
Figure 2. Overview of the Itivia site, bypass road, and community snowmobile trail. Source: Agnico Eagle's Roads Management Plan for Meliadine (March 2017).	6

List of Photos

Photo 1: Overview of Meliadine Mine Site	5
Photo 2: Overview of Itivia Site	6
Photo 3. Barge dock shared by both AEM and the community.....	7
Photo 4. Equipment at the laydown area	7
Photo 5. Seacan wall at Itivia separating public and private areas.	7
Photo 6: Saline Water Discharge tank	7
Photo 7: Bypass Road	8
Photo 8: Signs in English and Inuktitut at the start of the Bypass Road	8
Photo 9: Slope for snowmobile crossing at bypass road.	8
Photo 10. Gatehouse closest to the community of Rankin.	9

Photo 11: ATV’s travelling on the AWAR.....	9
Photo 12: Haul truck along the AWAR	9
Photo 13: Emergency Response Spill Seacan.....	9
Photo 14: Major Bridge on the AWAR	10
Photo 15: Landfarm A	10
Photo 16: Temporary Landfarm.....	10
Photo 17. Landfill within the Meliadine mine site.	11
Photo 18: Garbage awaiting incineration.....	11
Photo 19: Meliadine incinerator.....	11
Photo 20: Gates at Incinerator.....	12
Photo 21. Fuel Tank Farm #1 transfer station.....	12
Photo 22. Fuel Tank Farm#1.	12
Photo 23. Fuel Tank Farm #2 transfer station.....	13
Photo 24. Fuel tank farm #2.....	13
Photo 25: Site of old fuel transfer station at Fuel Tank Farm #2. Area cleaned up following February 2018 spill.	13
Photo 26: Meliadine Tailings Storage Facility	13
Photo 27. The temporary exploration fuel storage farm.	14
Photo 28: Temporary landfarm.....	14
Photo 29. Exploration mine camp at Meliadine.....	14
Photo 30: Sandwiches and salads in plastic containers in the cafeteria.....	15
Photo 31: Salads in single serving plastic containers	15
Photo 32: Construction material and waste material around site.....	15
Photo 33: Debris and garbage observed near CP1	15
Photo 34: Seacans and debris observed in water	15
Photo 35: Dust Sampling Station along the AWAR.....	16
Photo 36: Haul truck along the AWAR creating dust.....	16
Photo 37: Saline water pond, which stores saline water from underground operations at the Meliadine Gold Mine Project.	17
Photo 38: Saline discharge facility.	17
Photo 39: Test plots as part of the revegetation studies.....	17
Photo 40. Wastes unsuitable for the landfill are sorted and stored in seacans.....	18

1 INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and is responsible for post environmental assessment monitoring of a Project in accordance with Part 7 of Article 12 of the *Nunavut Agreement* and s. 135(4) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14 (*NuPPAA*).

This report provides the findings that resulted from the NIRB's site visits of Meliadine Gold Mine Project that took place on August 20, 2019 as well as a summary of the comment and concerns received from community members during the public information session held on August 19, 2019.

1.1 Objective & Purpose of a Public Information Session

Pursuant to the *Nunavut Agreement*, the *NuPPAA*, and the Meliadine Gold Mine Project Certificate 006, the NIRB monitoring responsibilities include providing periodic updates regarding its Monitoring Program for the communities most affected by Agnico Eagle Gold Mines' (Agnico Eagle) Meliadine Gold Mine Project (the Project). This meeting is also to further ensure ongoing awareness of Project-specific terms and conditions and encourage effective participation throughout the Board's monitoring process.

1.2 Objectives & Purpose of Site Visits

The objective of the NIRB's site visit was to determine whether, and to what extent the land or resource use in question, is being carried out within the predetermined Terms and Conditions as set out in the amended Project Certificate as issued for the Meliadine Gold Mine Project, in accordance with Section 12.7.2(b) of the *Nunavut Agreement* and s. 135(3)(b) of the *NuPPAA*.

The observations resulting from this site visit shall, wherever possible, be incorporated into the measurement of the relevant effects of the Project, provide the information necessary for agencies to enforce terms and conditions of land or resource use approvals, and will be further used to assess the accuracy of the predictions contained in the project impact statements in accordance with Section 12.7.2 of the *Nunavut Agreement*, and s. 135 (3) of the *NuPPAA*.

1.3 Preparations for the Site Visits

In preparation for the site visit, the Monitoring Officer reviewed the following items: the Meliadine Project Certificate No. 006; previous Site Visit Reports (where relevant); and Agnico Eagle's 2018 Meliadine Gold Mine Annual Report and associated appendices as well as follow-up correspondence relevant to the monitoring of the approved Meliadine Gold Mine Project.

2 PUBLIC INFORMATION MEETING

The NIRB hosted the information session which consisted an open house at 3:00 pm and an evening session at 7:00 pm located at the Siniktarviq Hotel Conference Room in Rankin Inlet with consecutive translation into Inuktitut.

2.1 Advertisements

The NIRB advertised the meeting through radio, poster, and online through Facebook in Rankin Inlet both in English and Inuktitut in the month prior to the meeting.

2.2 Meeting Materials

At the public meeting, the following materials were provided by the NIRB:

- The NIRB's PowerPoint presentation (in English and Inuktitut)
- The *Nunavut Agreement* (in English)
- The *NuPPAA* (electronic)
- NIRB Public Guide Brochures (in English and Inuktitut)
- Meliadine Gold Mine Project Certificate No 006 (in English)
- Agnico Eagle's Meliadine Gold Project 2018 Annual Report (electronic)
- Comment Forms (in English and Inuktitut)

Copies of the above listed consultation materials can be obtained from the NIRB's online public registry at www.nirb.ca.

2.3 Summary of the Meliadine Public Information Session

The NIRB's open house session and information session were open to all members of the public with refreshments and snacks provided. All in attendance, including government, industry representatives and media, were asked to sign in and identify the community or organization they represented. No one attended the open house session and the information session had a recorded attendance of six (6) people.

The NIRB gave a PowerPoint presentation that included discussion of the NIRB process with a focus on the NIRB's monitoring programs; an update on the Project, including an overview of the Meliadine Project activities and key components; and events and/or issues identified through the project specific monitoring programs. The presentation concluded with a discussion as to how interested parties and community members could participate in the NIRB's processes.

Both written and verbal comments were accepted at the meeting as the public was encouraged to ask questions and verbal comments were recorded by the NIRB staff. These comments were categorized by NIRB staff into the following categories: aquatic environment and wildlife and employment concerns related to the ongoing development of the Meliadine Project. These comments helped the Board identify items that need to be addressed or considered throughout the NIRB's monitoring program for the Project.

Aquatic Environment and Wildlife

- Question on the type of bird involved in the reported bird mortalities at site.
- Question on whether Agnico Eagle conducted caribou studies for the migration paths/corridors.

Employment

- Clarification requested on the percentage of Inuit employed at the site and how it is presented by Agnico Eagle.

3 MELIADINE GOLD MINE SITE VISIT

3.1 Overview of Site Visit

The 2019 site visit was conducted by the NIRB's Monitoring Officer for the Meliadine Project Ms. Erin Reimer and Ms. Sophia Granchinho (NIRB staff). In the morning of August 20, 2019 Ms. Reimer and Ms. Granchinho were met by Mr. Dan Gorton, Environmental Coordinator with Agnico Eagle (Agnico Eagle staff), in the Hamlet of Rankin Inlet and driven first to the Meliadine Mine Site with stops along the all-weather access road (AWAR), followed by a tour of the mine site and finally driven back to the Itivia site for a tour of the barge landing facility. Areas visited are outlined in [Table 1](#). During the tour, NIRB staff and Mr. Gorton also discussed the Meliadine Project in general and specific items related to the Project Certificate.

Table 1: Meliadine Site Visit Tour

All-weather access road sites	Meliadine sites	Itivia sites
Gatehouse	Water intake area	Bypass road including: <ul style="list-style-type: none">▪ Snowmachine crossing
Bridge near gatehouse	Permanent camp infrastructure	Fuel tank farm
Dustfall monitoring station	Landfarm	Laydown area and marshalling facility
	Fuel tank storage areas	Saline discharge area
	Incinerator	Community barge area
	Landfill and waste management areas	Snowmachine crossing at laydown area
	Waste rock storage facility	
	Tailings storage facility	
	Entrances to both portals	
	Saline evaporators	
	Laydown area	
	Water treatment facility	
	Saline water pond	

All-weather access road sites	Meliadine sites	Itivia sites
	Exploration site including: <ul style="list-style-type: none"> ▪ Old fuel tank farm ▪ Old landfarm at exploration site (still active) ▪ Dust and air quality monitoring station ▪ Waste and hazardous materials storage area 	

3.2 Meliadine Gold Mine Project Overview

The Meliadine Gold project involves the construction and operation of a gold mine located in the Kivalliq Region, approximately 25 kilometres (km) north of Rankin Inlet on Inuit-owned lands. There are five (5) separate deposits that the Proponent plans to develop in a phased approach. Phase 1 is focused on the Tiriganiaq deposit, which will include two (2) open-pit and one (1) underground mines. Phase 2 will make the road a two-lane road with appropriate turn offs and allow Agnico Eagle to open the AWAR to the public. Further, this phase would also include the construction of a twinned road and development of a spur road to the Discovery deposit in 2024.

The mine site is comprised of a camp, associated mining infrastructure and the Tiriganiaq underground mine. Construction of the Meliadine mine site was completed in early 2019 including the operation phase of the underground Tiriganiaq deposit. In addition to the mining infrastructure and activities, ancillary Project infrastructure is located at the Itivia Harbour in the Hamlet of Rankin Inlet and consist of barge unloading facilities, a laydown storage and marshalling area, a 37.5 million litre (ML) fuel tank farm and the Saline Water Discharge tank. The Itivia harbour area is connected with the mine site with bypass road (completed in October 2018) and a controlled all-weather access road (AWAR). The bypass road allows mine-related traffic from Itivia to bypass the community before joining up with the AWAR. The AWAR will be opened to all public traffic for Phase 2 of the project in 2024 when the Proponent begins developing the Discovery deposit, just to the east.

In 2019 after an amendment process, the NIRB approved the addition of saline discharge of a portion of the saline water from the Tiriganiaq Underground Mine to Melvin Bay. Saline effluent will be trucked from the mine to a discharge facility located at the Itivia Fuel Storage Facility where it will be placed in a tank to await pumping into a pipeline which extends to an engineered diffuser located in Melvin Bay. The saline discharge into Melvin Bay will only happen during the open water season and Agnico Eagle is still approved to continue managing saline water at site as approved.

See [Photo 1](#) for an overview photo of the Meliadine Mine Site. [Figure 1](#) and [Figure 2](#) provide a layout of the Meliadine Mine Site, and the marshalling facility at Rankin Inlet.



Photo 1: Overview of Meliadine Mine Site

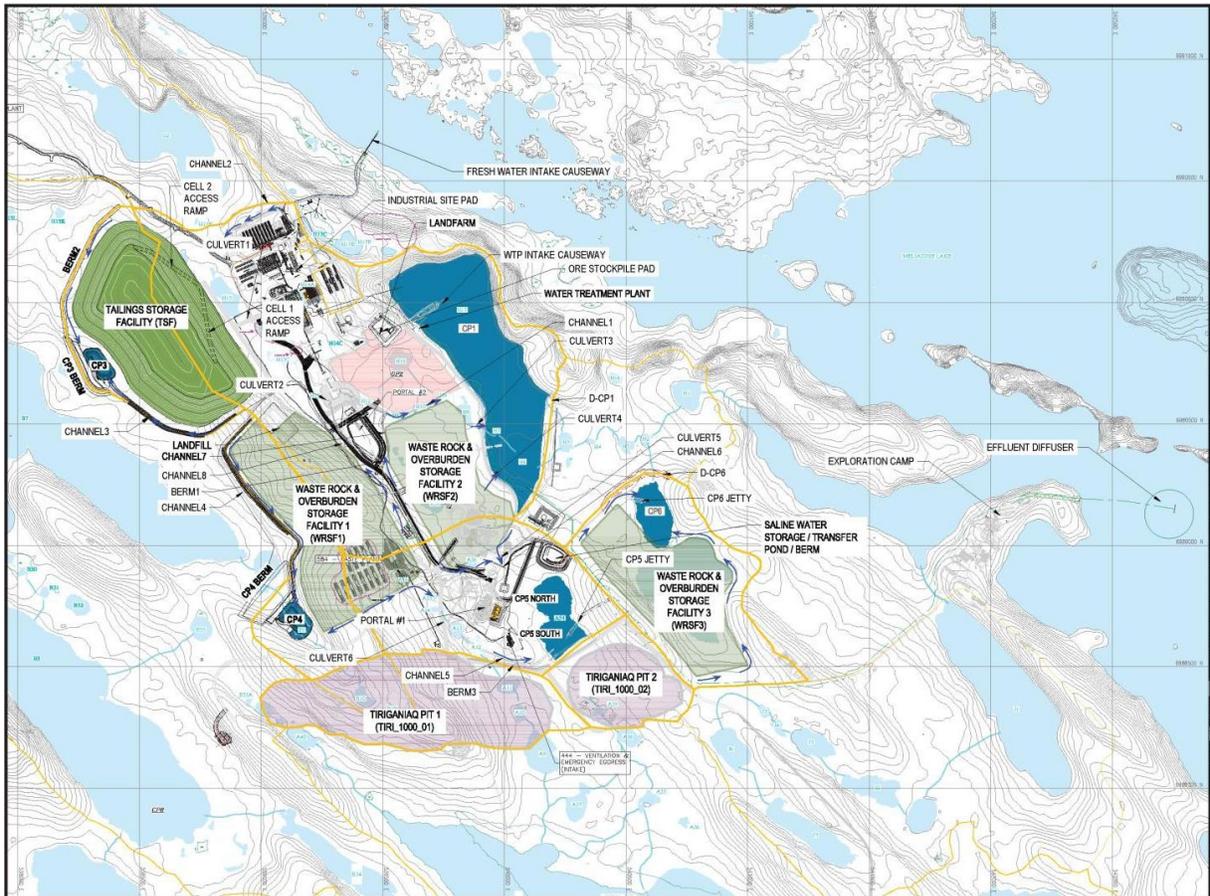


Figure 1: Meliadine Mine Site (from Agnico Eagle’s 2018 Annual Report; Figure 1)

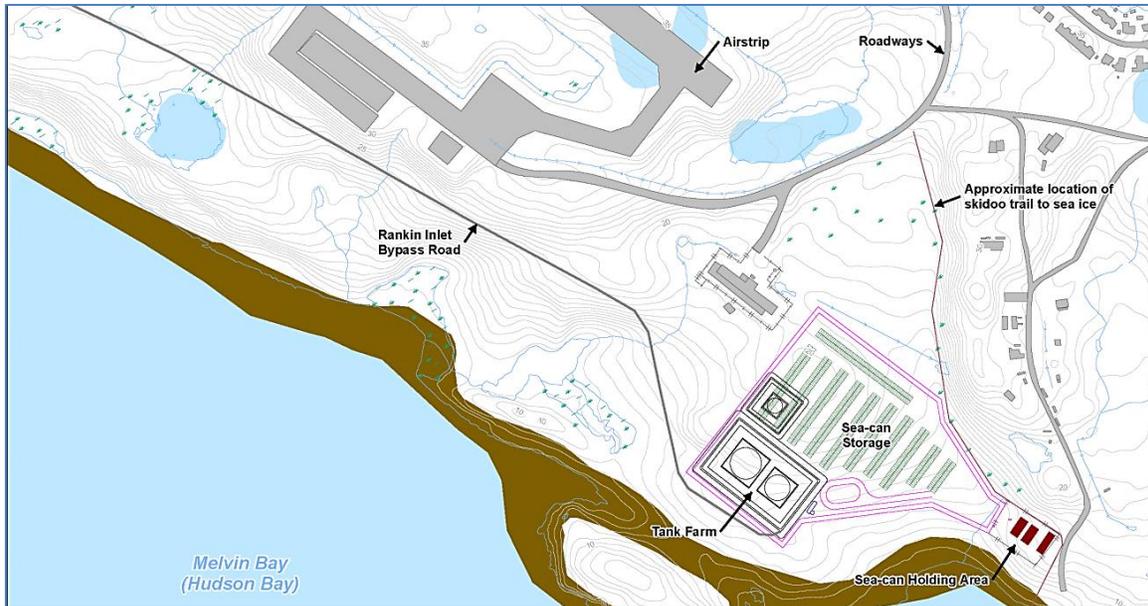


Figure 2. Overview of the Itivia site, bypass road, and community snowmobile trail.
Source: Agnico Eagle's Roads Management Plan for Meliadine (March 2017).

3.3 General Observations for Meliadine Mine Site

The following are general observations made during the site visit and do not pertain specifically to any particular terms or conditions of the Meliadine Project Certificate:

3.3.1 Itivia Harbour

The following observations were made at the Itivia harbour:

- a) Container ships that are associated with the Meliadine project anchor just inside or just outside of Melvin Bay and dry cargo is transported to shore on tug-barges, then lightered to shore using the gravel ramp in Itivia harbour. This ramp is also currently used by the Hamlet of Rankin Inlet during the annual sealift (see [Photo 2](#)). :



Photo 2: Overview of Itivia Site

- b) The Itivia site was busy with equipment and seacans being moved around and preparation for another barge to be arriving with additional equipment for offloading (see [Photo 3](#) and [Photo 4](#)).



Photo 3. Barge dock shared by both AEM and the community.



Photo 4. Equipment at the laydown area

- c) It was observed that the signage on the seacan wall was updated and clearly noted to the community the public dock access and the Agnico Eagle barge area (see [Photo 5](#)).
- d) The Saline Water Discharge tank was installed at the Itivia site and appeared to be in working condition (see [Photo 6](#)).
- e) The snowmobile crossing within Agnico Eagle’s Itivia area was also inspected and appeared to be in good repair.
- f) Overall the area appeared to be maintained in good order; however, debris was observed around the Itivia site.



Photo 5. Seacan wall at Itivia separating public and private areas.

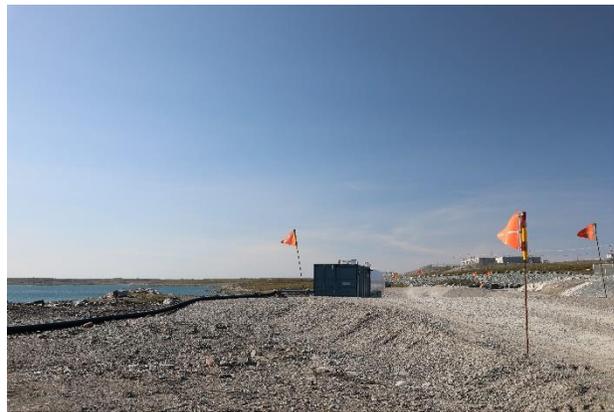


Photo 6: Saline Water Discharge tank

3.3.2 Bypass Road

The Bypass road is intended to connect Itivia Harbour with the AWAR to reduce/eliminate mine traffic going through the Hamlet of Rankin Inlet and was completed in October 2018 and the road includes a snowmachine crossing to allow access Itivia Bay. The following observations were made along the Bypass road:

- a) The Bypass road had clear signs noting that the road is private in both English and Inuktitut (see [Photo 7](#) and [Photo 8](#)).
- b) At the snowmachine crossing, there were no signs of extreme slopes or rocks along the side of the AWAR (see [Photo 9](#)).



Photo 7: Bypass Road



Photo 8: Signs in English and Inuktitut at the start of the Bypass Road



Photo 9: Slope for snowmobile crossing at bypass road.

3.3.3 All-Weather Access Road (AWAR)

The AWAR is a 25 km long road which connects the main mine site with the bypass road. Two (2) gatehouses are present along the AWAR and the gatehouse closest to the mine tracks all mine-related traffic entering and leaving the site, while the gatehouse near the community of Rankin Inlet maintains a log of mine related traffic and passing all-terrain vehicles (ATVs) (see [Photo 10](#)). Only private ATVs are allowed on the AWAR and are required to sign in and out and are asked where they are heading and how far they are planning to travel up the AWAR for safety reasons. No other private vehicles are allowed on the AWAR currently. The following observations were made along the AWAR:

- a) While travelling along the AWAR towards Meliadine, it was observed that the road was extensively used by Rankin Inlet community members (see [Photo 11](#)) along with mine traffic travelling to and from the Itivia area (see [Photo 12](#)).
- b) The NIRB staff requested an update on the plan to build a dedicated ATV/snowmobile connection trail during the site visit and Agnico Eagle staff commented that this trail may not be constructed but discussions are ongoing with the Hunters and Trappers Organization.
- c) The NIRB staff noted that the environmental emergency seacans were located at or near all bridge crossings (see [Photo 13](#) and [Photo 14](#))



Photo 10. Gatehouse closest to the community of Rankin.



Photo 11: ATV's travelling on the AWAR



Photo 12: Haul truck along the AWAR



Photo 13: Emergency Response Spill Seacan



Photo 14: Major Bridge on the AWAR

3.3.4 Mine and camp infrastructure

The following observations were made at the mine site:

- a) Agnico Eagle constructed a landfarm (referred to as Landfarm A) at the Meliadine mine site in 2018 and it was operational during the NIRB's site visit. Agnico Eagle has started treatment of contaminated hydrocarbon soil on site with nutrients like the Meadowbank Gold Mine site (03MN107) as Agnico Eagle was not having as much success with remediation as it was having at the Meadowbank site. NIRB staff were informed that this landfarm was at capacity (originally designed for a 10-year life) due to the spill that occurred in February 2018 at one of the fuel tank farms (Genset Fuel tank) and an overall increase in spills over the last two years. As such, Agnico Eagle has constructed a temporary landfarm next to Landfarm A which has been developed for overflow of contaminated hydrocarbon soil (see [Photo 15](#) and [Photo 16](#)).



Photo 15: Landfarm A



Photo 16: Temporary Landfarm

- b) At the landfill NIRB staff observed numerous wooden pallets in the debris and learned that it is due to the amount of materials being brought to site from the barge season. Last year it was noted by Agnico Eagle staff that plans were in place to send the wooden pallets to

the community of Rankin Inlet which has not yet occurred (see [Photo 17](#)). During the site visit, NIRB staff were informed that this landfill was at capacity (originally designed for a 10-year life) as they underestimated the amount of wastes that were produced during the construction and initial operation periods.



Photo 17. Landfill within the Meliadine mine site.

- c) NIRB staff noted that the incinerator appeared to be backlogged as garbage was stacked inside the incinerator building and were informed that the incinerator was not working properly and not reaching the appropriate temperatures for proper combustion and incineration of wastes. Agnico Eagle is working on improving this issue. In addition to the issues, Agnico Eagle has issues with the building that houses the incinerator overheating during incineration employees are required to open the doors. To prevent wildlife from entering the incinerator building, a temporary gate was installed (see [Photo 18](#) through [Photo 20](#)).



Photo 18: Garbage awaiting incineration



Photo 19: Meliadine incinerator



Photo 20: Gates at Incinerator

- d) During the site visit, NIRB staff noted that both fuel tank farms and the smaller fuel storage tanks located at various locations around the mine site were within appropriate secondary containment. Further, fuel storage tanks appeared to be handled in a safe and environmentally protective manner. Fuel tank farm #1 was not yet in commission during the site visit as final tests were required before it could be used, while fuel tank farm #2 was being used following improvements to the area and the installation of a liner under the transfer station as identified in 2018. At fuel tank farm #2, there was no evidence of the fuel spill that occurred in February 2018 except for some discernable hydrocarbon odours. Both fuel tank farms did not contain any water; however, there were discernable hydrocarbon odours at both fuel tank farms, and the liner at fuel tank farm #1 was exposed (see [Photo 21](#) through [Photo 25](#)).



Photo 21. Fuel Tank Farm #1 transfer station



Photo 22. Fuel Tank Farm#1.



Photo 23. Fuel Tank Farm #2 transfer station.



Photo 24. Fuel tank farm #2.



**Photo 25: Site of old fuel transfer station at Fuel Tank Farm #2.
Area cleaned up following February 2018 spill.**

- e) The NIRB staff also visited the tailings storage facility (dry stack) located west of the mine site (see [Photo 26](#)). The site appeared to be well managed but Agnico Eagle staff noted that the dry stack method for the tailings storage facility has had issues during the summer months due to dust related issues (i.e., high winds have blown the tailings dust around).



Photo 26: Meliadine Tailings Storage Facility

- f) The site visit also included the exploration/temporary fuel tank storage farm and temporary landfarm as following the 2017 site visit, Agnico Eagle noted that both locations would be decommissioned in the summer of 2018. During the current site visit, decommissioning work on the temporary fuel tank farm and temporary landfarm had not started and Agnico Eagle staff stated that remediation of the site had not commenced (see [Photo 27](#)).



Photo 27. The temporary exploration fuel storage farm.



Photo 28: Temporary landfarm

- g) Wildlife observed during the site visit included geese (white-fronted, snow, and Canada), loons, siksik (ground squirrel), ravens, arctic hare and tundra swans.
- h) During the site visit, the NIRB staff were informed that the 200 person exploration camp continued to be used but was being slowly decommissioned (see [Photo 29](#)).



Photo 29. Exploration mine camp at Meliadine

- g) NIRB staff had an opportunity to have lunch at the Meliadine cafeteria and noted that all food was pre-packaged into single serving plastic containers for the lunch crew including salads, sandwiches, and sliced pizza. The NIRB staff noted concern with this setup as it

could create a large quantity of plastic waste. Agnico Eagle staff indicated that they are working on reducing waste overall at the site (see [Photo 30](#) and [Photo 31](#)).



Photo 30: Sandwiches and salads in plastic containers in the cafeteria



Photo 31: Salads in single serving plastic containers

- h) Overall, the Meliadine mine site area appeared to be maintained in good order; however debris including windblown material was observed around the site (see [Photo 32](#) and [Photo 33](#)).



Photo 32: Construction material and waste material around site



Photo 33: Debris and garbage observed near CPI



Photo 34: Seacans and debris observed in water

4 SITE OBSERVATIONS BASED ON NIRB PROJECT CERTIFICATE NO. 006

The following provides a summary of observations made with respect to the relevant terms and conditions related to Project Certificate No. 006. [Appendix A](#) summarizes observations made during the site visit that pertain specifically to terms and conditions of Project Certificate No. 006 relevant to the pre-construction and construction phase of the Meliadine Project.

Condition 1: Air Quality Monitoring Plan and Condition 3: Dust Management and Monitoring Plan

Agnico Eagle staff noted that it continues to apply TETRA flakes (calcium chloride) along the AWAR and that dust monitoring continues to be conducted along multiple stations along the AWAR (see [Photo 35](#)). In response to questioning by NIRB staff, Agnico Eagle noted that the trial using new dust suppressants on a portion of the AWAR in 2018 were not effective and the plan is to continue to use calcium chloride as a dust suppressant.

Agnico Eagle staff also indicated that calcium chloride flakes are applied to the areas around the Meliadine Mine site. In addition, water is used as the dust suppressant on the tailings storage facility. During the site visit, NIRB staff noted that dust suppressants were not applied effectively along the AWAR (see [Photo 36](#)).



Photo 35: Dust Sampling Station along the AWAR



Photo 36: Haul truck along the AWAR creating dust

Condition 25: Saline Water Management Plan

At the saline water management pond, NIRB staff observed the saline water pumped water from the underground to one of the P-Area Containment Ponds. At Collection Pond 5, the three (3) evaporators were not being used to treat water as the saline water is re-used in drilling or trucked to the Saline Discharge Facility at Itivia for eventual release to the marine environment (see [Photo 37](#) and [Photo 38](#)).



Photo 37: Saline water pond, which stores saline water from underground operations at the Meliadine Gold Mine Project.



Photo 38: Saline discharge facility.

Condition 41: Reclamation and Re-vegetation

During the site visit, the NIRB staff visited test plots at one of the quarry sites that are being used as part of a revegetation trial in collaboration with Natural Sciences and Engineering Research Council of Canada Collaborative Research and Development grant with the University of Saskatchewan received in June 2019 (see [Photo 39](#)). However, the NIRB staff were informed during the site visit that some of the plots had been destroyed during the removal of soil from the quarry site.



Photo 39: Test plots as part of the revegetation studies

Conditions 61 & 74: Bird Deterrents

No wildlife deterrents were observed on the fuel tanks at the mine site nor at the fuel tank farm at Itivia during the site visit. NIRB staff were informed that wildlife deterrents are removed during the fall season and re-installed during the spring season to prevent damage to the deterrents. During the summer season, peregrine falcon and rough legged hawk were found nesting near the mine site.

Condition 75: Predatory Attractants

NIRB staff observed waste not suitable for the landfill or for incineration was sorted appropriately (e.g., sewage treatment sludge, batteries, electronics) and was stored in available seacans at the Exploration site for shipment to an appropriate facility in the south (see [Photo 40](#)). These seacans

were appropriately stored to avoid attracting wildlife to the site; however, it was discussed that in 2018 a total of 22 arctic foxes were trapped near the mine site and dispatched by the Government of Nunavut, Department of Environment officers. Agnico Eagle continues to work with the Department to find ways to minimize attracting wildlife to the site.



Photo 40. Wastes unsuitable for the landfill are sorted and stored in seacans.

5 RECOMMENDATIONS AND DIRECTION

Based on the observations made during this site visit, all Meliadine facilities in operation and all sites under construction continue to appear to be well managed, and generally are maintained with adequate environmental protection measures and procedures in place. However, it was noted that there was much debris around the site. The Monitoring Officer noted the following successes at the Meliadine site facilities:

- The removal and replacement of wildlife deterrents to ensure they are in appropriately maintained.
- Clear signage in the Itivia area, along the Bypass road in English and Inuktitut.
- Installation of liners under the fuel transfer stations.
- Segregation and storage of all domestic, hazardous, and combustible wastes appear to be conducted appropriately.

Agnico Eagle appears to be in compliance with a majority of the terms and conditions contained within the Meliadine Gold Mine Project Certificate No. 006; however, there may be certain situations in which the Proponent has not yet fully met the requirements of the Project Certificate and which require further consideration and attention. The Monitoring Officer will be looking at the following during the next site visit:

- Ensure the Meliadine mine site and the Itivia site is cleaned of debris and material to reduce amount of garbage and wind-blown material observed during the site visit.
- Implement a recycling program and a waste reduction program is in place at the mine site to reduce the amount of wastes ending up at the landfill by:
 - Finding alternatives to the use of plastic storage containers for single meals at the Meliadine cafeteria.
 - Working with the community and/or schools to create projects that could recycle the wooden pallets and wood.

- Reduce amount of dust created around the tailings storage facility by finding alternatives for dust suppressants or managing the moisture levels of the tailings.
- Incinerator function and building requirements.

Additionally, in order to fully meet the requirements of the Project Certificate terms and conditions as well as Community Member concerns related to wildlife and aquatic environment, and to ensure that potential adverse impacts to the environment are adequately mitigated, the NIRB Monitoring Officer has identified the following issues during the site visit:

5.1 Revegetation

Term and Condition 41 requires the Proponent to develop a progressive re-vegetation program for disturbed areas that are no longer required for operations. Unfortunately, due to unforeseen circumstance a portion of the research program were destroyed.

5.2 Dust Suppressants

Term and Condition 3 requires that the Proponent verify commitments to the utilization of dust suppressants along the AWAR, including any associated trails and trails associated with the Project. To date, this condition has not been fully met by the Proponent as dust suppressants have not been employed sufficiently along the AWAR as dust plumes were observed during the site visit as trucks were driving along the road.

5.3 Capacity Issues at Landfarm and Landfill

Both the landfarm and landfill were at capacity during the site visit. Agnico Eagle did not appear to have a plan on how these sites would be dealt with as both were at their design capacity. Further, no information was available on when the temporary fuel tank farm and temporary landfarm at the exploration site had not started even though the initial plan was to remediate and clean up these sites by 2018.

5.4 Waste Management

Term and Condition 75 requires the Proponent to implement mitigation measures and monitoring programs to limit the attraction of predators and scavengers to Project facilities. Even though it was noted during the site visit that segregation and storage of all domestic, hazardous, and combustible wastes appear to be conducted appropriately; however, the site still appears to be attracting predators.

6 CONCLUSION

Overall, Agnico Eagle appears to be in compliance with the majority of the terms and conditions contained within the Meliadine Gold Mine Project Certificate No. 006. As noted in previous years, dust suppressants have not been applied effectively to the all-weather access road between the community of Rankin Inlet and Meliadine, or not applied frequently enough.

Prepared by: Sophia Granchinho, M.Sc., EP
Title: Manager, Impact Assessment
Date: October 7, 2019

Reviewed by: Kelli Gillard, P.Ag.
Title: Manager, Project Monitoring
Date: October 7, 2019

Signature:



Signature:



Appendix A: 2019 NIRB Site Visit Observations for Select Terms and Conditions for the Meliadine Gold Mine Project

T&C No.*	Topic	Site Observations
Air Quality		
1	Updated Air Quality Monitoring Plan	<p>a) Air and partisol monitoring stations have been in place at two stations around the Meliadine Mine Site since 2017.</p> <p>b) As in previous years, Agnico Eagle staff noted that dust sampling stations were placed along multiple stations along the AWAR at various distances from both sides of the road in two (2) duplicate transects to monitor dust deposition distance from the road. Vehicles were observed producing dust along the AWAR.</p> <p>c) Speed limits were observed to be followed by Agnico Eagle employees, but it was noted that community members did not always follow the speed limits.</p>
2	Emissions monitoring	
3	Dust management and monitoring plan	
Hydrogeology and Groundwater		
25	Saline Water Management Plan	<p>a) Saline water is currently being pumped to a containment pond with water levels managed using evaporators when necessary until decommissioning of the evaporators.</p> <p>b) Saline water was also being transported to the Saline Discharge Facility at Itivia for eventual release to the marine environment.</p>
Terrestrial Environment & Hydrology and Sediment Quality		
16	Erosion Management Plan	<ul style="list-style-type: none"> • During the site visit, no obvious erosion was noted and all sites following construction appear to be well managed. • Generally, the site appeared to be well maintained with adequate environmental protection measures and procedures in place.
28	Sediment and Erosion Management	
Vegetation		
36	Invasive Species	<p>a) Current protocol to ensure that vehicles are not bringing in any invasive species to site is</p>

T&C No.*	Topic	Site Observations
		to inspect all vehicles prior to receiving at the barge in Quebec.
Terrestrial Wildlife and Wildlife Habitat		
48	Management of road access during caribou migration.	<ul style="list-style-type: none"> As in previous years, the AWAR was closed during the caribou migration period and Agnico Eagle worked closely with the Government of Nunavut - Department of Environment and the Kivalliq Inuit Association to ensure mine traffic did not impact caribou during large aggregations of caribou.
Birds and Bird Habitat		
59	Species at Risk	<p>a) No wildlife deterrents were observed to be installed around the mine site during the site visit.</p> <p>b) Agnico Eagle previously reported in the 2017 site visit that bird deterrents were previously used but were not effective at the tailings impoundment area. Bear bangers were bought for this use but will only be deployed if necessary.</p> <p>c) Wildlife deterrents are removed during the fall season and re-installed during the spring season to prevent damage during the winter season.</p> <p>d) Species observed and found nesting near the site included peregrine falcon, and rough legged hawk.</p>
61	Installation of nesting deterrents	
62	Protection of nests found with a buffer zone	
72	Minimize impact to sensitive bird species	
74	Minimize impact of project activities on water birds	
75	Minimize impact of predatory species on nesting birds	

T&C No.*	Topic	Site Observations
75	Minimize impact of predatory species on nesting birds	<p>a) As in previous years, Agnico Eagle continues to work with the Government of Nunavut - Department of Environment to find ways to deter foxes that are attracted to the site. Agnico Eagle re-iterated that employees are made aware of the Wildlife Policy and that feeding of any wildlife is prohibited.</p> <p>b) It was noted that wastes not appropriate for the landfill were sorted and secured in seacans or other closed containers for future disposal at southern locations.</p>
Marine Environment		
77	Spill Prevention	<p>a) As in previous years, spill kits were observed at various locations across the Project, including at road-side quarries, emergency sea cans on the side of the AWAR, and adjacent to fuel storage areas.</p> <p>b) Agnico Eagle also noted that trucks were equipped with spill response materials</p>
Accidents and Malfunctions		
125	Measures to protect public and mine traffic on all Project roads including the AWAR.	<p>a) Two (2) manned gates were operational and recording traffic, including ATVs.</p>
P1Exception #43	Operate AWAR as controlled access road.	<p>b) All public traffic is required to check-in with the employee at the gatehouse prior to proceeding along the road before proceeding on the AWAR.</p> <p>c) Road signs were posted in English and Inuktitut indicating access and safety requirements of AWAR.</p> <p>d) Observed speed limit signs along the AWAR.</p> <p>e) Agnico Eagle staff noted the difficulty in enforcing the speed limits on members of the public that use the road which is a safety concern.</p>