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Government of Nunavut
Nunavut Kavamat
Gouvernement du Nunavut

February 21, 2019

Sophia Granchinho
Manager, Impact Assessment
Nunavut Impact Review Board
P.O Box 1360
Cambridge Bay, NU X0B 0C0

Sent VIA Email: info@nirb.ca

RE: NIRB 125418/16MN056: Conformity Determination for Agnico Eagle Mines Ltd.'s Final Environmental Impact Statement Addendum for the "Whale Tail Pit Expansion Project" Proposal and Commencement of the NIRB's Technical Review Period

Dear Sophia Granchinho,

On behalf of the Government of Nunavut (GN), I would like to thank the Nunavut Impact Review Board (NIRB) for the opportunity to submit Information Requests for Agnico Eagle Mines Ltd.'s (AEM) *"Whale Tail Pit Expansion Project"* proposal. The GN has reviewed AEM's Final Environmental Impact Statement addendum and has developed 28 Information Request's (see Appendix A & B) for the NIRB's consideration.

Following our mandate, *Turaaqtavut*, the GN has prioritized the development and management of our renewable and non-renewable resources for the long-term benefit of Nunavummiut. In regards to resources development, the GN will continue to work together with proponents, intervenors, and the NIRB to ensure approved projects effectively balance socio-economic benefits with the protection of Nunavut's vast environment.

The GN would like to acknowledge the efforts of AEM in developing this project proposal and looks forward to participating in all aspects of the impact review process.

Please contact me by phone at 867-975-7808 or by email at cspencer@gov.nu.ca if any concerns arise with the GN's submission.

Qujannamiik,

[Original Signed By]

Chris Spencer
Avatiliriniq Coordinator
Government of Nunavut

cc: Ryan Vanengen, Agnico Eagle Mines Ltd.
Jamie Quesnel, Agnico Eagle Mines Ltd.

GN Information Requests for AEM's *"Whale Tail Pit Expansion Project"* Proposal

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Appendix A: Environmental & Human Health Information Requests

GN IR #01 – TRAFFIC LEVELS ON WHALE TAIL HAUL ROAD	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent
Subject/Topic	Traffic Levels on the Whale Tail Haul Road
References	• Final Environmental Impact Statement Addendum (FEIS), Whale Tail Pit - Expansion Project. Project Description, Table 1.1-1: Definition of Scope • FEIS Addendum, Whale Tail Pit - Expansion Project. Project Description, Table 1.4-1: Mine Development Sequence and Key Activities • FEIS Addendum, Whale Tail Pit - Expansion Project. Appendix 4-B, Air Emission Inventory, Table 4-B-20 - Daily Vehicle Traffic on the Haul Road • AEM (2017). Agnico Eagle Mines Limited – Meadowbank Division. Whale Tail Pit Final Information Request Responses. January 2017. • NIRB (2017). Nunavut Impact Review Board, Final Hearing Report, Agnico Eagle Mines Ltd, Whale Tail Pit Project, NIRB file No. 16MN056. November 2017.

IDENTIFICATION OF ISSUE

The FEIS Addendum includes increases in the Whale Tail site infrastructure and the number of camp personnel (FEIS Addendum. Project Description, Table 1.1-1). Presumably these changes will result in some degree of increased traffic on the haul road to support this expansion. The FEIS Addendum does not provide updated traffic estimates for the haul road.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Traffic on the Project haul road is a potential barrier to the movement of wildlife. Understanding the current levels of traffic, as well as future changes in traffic as a result of the Project amendment, is important for informing the effects assessment. During review of the Approved Project, estimates of traffic levels on the haul road were provided by the Proponent. These estimates should be updated for the FEIS Addendum in the following areas:

1) The proposed expansion of the Project includes additional infrastructure and activities such as:

- Expansion of on-site facilities at Whale Tail Pit to accommodate a maximum of 390 persons.
- Installation of a larger maintenance shop and additional wings to the
- Expansion of main camp, to support additional personnel.

- Installation of an incinerator, compost site, and landfarm to support waste management activities.
- Service garages.
- Bulk Fuel Storage Facility will be expanded for an additional 0.5 million litre tank (FEIS Addendum. Project Description, Table 1.1-1).

It is also noted from the Project schedule that there will be concurrent mining activity at the Whale Tail Pit, IVR pit and underground sites for a period of 6 years (FEIS Addendum. Project Description, Table 1.4-1). This may involve increased transportation of explosives, equipment, and supplies necessary to support multiple mining operations.

Presumably, this expansion of the site infrastructure, mining activities and an increase in personnel on site from 210 to 390 persons will require additional traffic on the haul road. During review of the Approved Project, the Proponent provided estimates of daily traffic on the haul road (Response to GNIR 06, Table 4-B-2, AEM 2017). These should be updated to reflect changes in the activities associated with the expanded Whale Tail site. The traffic estimates presented in the FEIS Addendum (Appendix 4B, Table 4-B-20) are unchanged from those presented during the FEIS for the Approved Project.

2) Exploration-related traffic using the haul road is an additive (cumulative) effect on wildlife. During the review of the Approved Project, the Proponent provided estimates of daily exploration-related traffic on the haul road (Response to GNIR 06, Adaptation of Table 7-1, AEM 2017). The haul road has been used for exploration activity for several years. Monitoring of traffic on this road is conducted by the Proponent and was recently included as a requirement under the Approved Project certificate 008 (Term and condition 31). A commitment to monitor and report traffic, including exploration-related traffic, on the haul road was also made by the Proponent during the NIRB's review of the Approved Project (NIRB, 2017; Commitment 21, Appendix B). Data on current exploration related traffic levels on the haul road should therefore exist. These data should be presented and compared to levels that were estimated during the review of the Approved Project. This will confirm the accuracy of predicted traffic levels and provide updated information of exploration-related traffic on the haul road.

INFORMATION REQUEST

The GN requests the following information from the Proponent:

1. Provide an updated table of estimated daily haul road traffic levels following the same format as Table 4-B-2 in AEM (2017). In particular, the table should be responsive to the following:
    - It should reflect anticipated changes in traffic associated with the expansion Project. Please provide revised means as well as revised upper 95% and lower 5% percentiles to reflect the proposed plan to operate the Meadowbank mill at its maximum throughput capacity (of 13,000 tons per day) during the 8 years of operation of the Expansion Project; and
    - Please clarify whether this table includes all traffic anticipated to use the haul road (including exploration-related vehicles). Please express traffic levels in terms of number of one-way trips; and

2. Provide an updated table of exploration-related traffic on the haul road following a

format similar to that of Table 7-1 in AEM (2017). In particular, the table should be responsive to the following:

- Please provide actual mean daily traffic levels, as recorded over the last 2 years in comparison to predicted levels; and
- Please express traffic levels in terms of number of one-way trips.

GN IR #02 – MINE DEVELOPMENT SEQUENCE AND KEY ACTIVITIES	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent
Subject/Topic	Mine Development Sequence and Key Activities
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit - Expansion Project. Project Description,Table 1.4-1: Mine Development Sequence and Key Activities

IDENTIFICATION OF ISSUE

The proposed Expansion Project involves concurrent mining at multiple sites within the Whale Tail Project Development Area (PDA) (FEIS Addendum. Project Description, Table 1.4-1). This presumably involves increases in activities such as blasting and operation of heavy equipment, which are activities that could disturb wildlife. The FEIS Addendum does not provide information on the expected changes in frequency, timing, duration and/or intensity of these activities relative to the Approved Project.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Activities such as blasting, the operation of heavy equipment and circulation of traffic within the Whale Tale mine site have the potential to disturb wildlife. The proposed Expansion Project includes concurrent mining of the Whale Tail Pit, IVR pit and underground site for a period 6 years, excluding construction (FEIS Addendum. Project Description, Table 1.4-1). Relative to the single pit mining operation for the Approved Project, this multi-deposit mining will presumably involve increases in blasting, the movement of ore to stockpiles and waste rock to storage facilities and general circulation of other traffic within the Whale Tail Project Development Area. These activities may lead to increased disturbance of wildlife and a change in the Project's Zone-of-Influence. In-order to review the effects assessment, it is necessary to accurately understand changes in the frequency, timing, duration and intensity of these activities. This information is not presented in the FEIS Addendum.

INFORMATION REQUEST

The GN requests the following information from the Proponent:

1. Please provide information on the predicted changes in the frequency, timing, duration and intensity of blasting, operation of heavy equipment (above ground) and vehicle circulation within the Whale Tail (PDA) as a result of the proposed expansion; and
2. For blasting, please provide estimates of the number of blasts per day that will occur during the operations phase at the Whale Tail site as a result of the Approved Project and proposed Expansion Project. Please provide separate estimates for pit and below ground blasting.

GN IR #03 – ALTERNATIVES ASSESSMENT	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent
Subject/Topic	Alternatives Assessment
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit - Expansion Project. Table 1.4-1: Mine Development Sequence and Key Activities • AEM (2017). Agnico Eagle Mines Limited – Meadowbank Division. Whale Tail Pit Final Information Request Responses. January 2017. • Government of Nunavut (2017) Final written submission for Agnico Eagle Mines' environmental impact statement for the proposed "Whale Tail Pit" project

IDENTIFICATION OF ISSUE

The proposed Expansion Project extends construction and mining operations at the Whale Tail site by 3 years relative to the Approved Project (FEIS Addendum. Project Description, Table 1.4-1). It is unclear how the Proponent considered potential effects of the Project on wildlife, such as caribou, in the assessment of alternatives.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The intensity of traffic on the haul road was a key concern with respect to potential effects of the Approved Project on the movements of migratory caribou herds (e.g. Final Written Submission Comment 03, GN 2017) and remains a key concern associated with the proposed Expansion Project. With the proposed Expansion Project, use of the haul road will be extended by at least 3 years relative to the Approved Project (FEIS Addendum. Project Description, Table 1.4-1). If road traffic effects on caribou occur, the duration of these effects will be extended significantly relative to the Approved Project.

Most of the traffic on the haul road consists of haul trucks moving ore to the mill at the Meadowbank site (Response to GN IR 06, Table 4-B-2, AEM 2017). Consequently, haul road traffic intensity is primarily determined by mining and milling rate. The FEIS Addendum indicates that:

> "Project alternatives were evaluated for the Expansion Project according to the following criteria:
>
> - Environmental – potential impacts to the environment, project footprint, reclamation;
> - Engineering and Viability – best engineering practices, technology, permitting, risk, and flexibility;
> - Economy – cost implications, construction capital, operating costs, maintenance

cost for reclamation; and
- Society – community acceptance or preference, traditional knowledge (TK), health and safety, quality of life, employment, and socio-economic effects." (FEIS Addendum, Section 1.10 Alternatives to the Expansion Project)

Section 1.10 of the FEIS Addendum outlines several Project alternatives that were considered. However, there is no discussion regarding how the potential effects of the Project on wildlife, such as caribou, were considered in this assessment of alternatives.

The GN also notes that none of the scenarios discussed in this section includes alternatives for mining or milling rates, and, consequently, the resultant rates of haul road traffic.

INFORMATION REQUEST

The GN requests the following information from the Proponent:

1. Please explain how potential effects on wildlife such as caribou were considered in the assessment of alternatives; and
2. Please clarify whether, as part of the alternatives assessment, scenarios involving different mining and ore milling rates were analyzed from socio-economic and environmental standpoints. If analysis was undertaken, please provide a reference for the location of these alternative analyses in the FEIS Addendum.

GN IR #04 – SIZE OF LOCAL STUDY AREA	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent
Subject/Topic	Size of the Local Study Area
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit - Expansion Project, Section 1.0 Project Description, table 1.1-1 - Definition of Scope. • FEIS Addendum, Whale Tail Pit - Expansion Project, Section 3.0 Methods, table 3.2-1 - Expansion Project Study Areas • Whale Tail Final Environmental Impact Statement, Volume 5, Terrestrial Environment, section 5.1.3.1.2 - Vegetation and Wildlife

IDENTIFICATION OF ISSUE

As part of the proposed Expansion Project, the PDA will be expanded relative to the Approved Project. However, the Local Study Area (LSA) used for the assessment of effects on vegetation, terrestrial wildlife and birds remains unchanged in total area from that used for the Approved Project. For consistency in effects assessment methodology between the Approved Project and proposed Project, the expanded PDA should be associated with an expanded LSA.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The FEIS Addendum indicates that the PDA at the Whale Tail site will be expanded relative to the Approved Project as a result of additional pit/underground mining activities and additional borrow sites and haul road widening (FEIS Addendum, Section 1.0, table 1.1-1). The FEIS Addendum also indicates that the size of the LSA used for assessing effects on vegetation, terrestrial wildlife and birds is a 3 km buffer circle around Project facilities (i.e., 1.5 km from infrastructure). This is the same size of buffer used for the Approved Project's LSA. The expansion of the PDA combined with the use of the same size buffer means that the LSA for the proposed Project should be larger in total area than that used for the Approved Project. However, the LSA for the proposed Project is stated to be "approximately 28,215 ha" (FEIS Addendum, section 3.0, table 3.2-1). This is the same size of LSA as that used in for the Approved Project (FEIS, Volume 5, section 5.1.3.1.2).

Understanding changes in the size of PDA, LSA and the Regional Study Area is important for interpreting the results of the effects assessment.

INFORMATION REQUEST

The GN requests the following information from the Proponent:

1. Please explain why the area of the LSA used in the FEIS Addendum is the same as LSA used in the FEIS
2. Please provide a table comparing the size (in hectares) of the PDA, LSA and the Regional Study Area for the Approved Project versus the Expansion Project.

GN IR #05 – HAUL ROAD DESIGN	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent
Subject/Topic	Haul Road Design
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit - Expansion Project. Section 1.2.8 Haul Roads, All-Weather Roads, and Winter Roads • FEIS Addendum, Whale Tail Pit - Expansion Project. 1-B: Addendum Design Drawings /Conceptual Layouts • Government of Nunavut (2017) Technical Review Comments Final for Agnico Eagle Mines' environmental impact statement for the proposed "Whale Tail Pit" project.

IDENTIFICATION OF ISSUE

To some degree, the haul road may present a physical barrier to the movement of wildlife. This remains a concern with the proposed Expansion Project during which the haul road would be widened from 9 meters to 15 meters.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

As noted during the review of the Approved Project, the haul road may present a physical barrier to the movement of wildlife, such as caribou, dependent on its structural features (Technical Review Comment 15, GN 2017). These features include, but are not limited to, the road's height above surrounding ground, the slope of its embankments, the grain size of material used in construction and the presence of safety barriers or berms.

The FEIS Addendum states that with respect to widening of the haul road:

> "The design parameters to allow for caribou crossing of 4:1 slope will be adhered to. No additional changes from FEIS (Agnico Eagle 2016c) are proposed related to site access. The expanded road will be constructed using waste rock or aggregates from quarry and esker sites, and top-dressed with esker material…Typical cross-sections of the upgraded road based on underlying ground conditions are provided in Volume 1, Appendix 1-B." (FEIS Addendum, section 1.2.8)

The GN notes the following:

- With the widening of the haul road, there is potential for the slope of the road's embankments and its height above the surrounding land to change. The design drawings in the FEIS Addendum present representative cross sections of the widened road (FEIS Addendum, appendix 1-B). Most of the cross sections appear to have

steeper embankment slopes than the 4:1 slope proposed to facilitate caribou crossing. Heights presented in the drawing are minimum heights only;

- During review of the Approved Project, reviewers had to rely on similar haul road cross section design drawings in-order to understand how the physical structure of the road might affect wildlife. For examining the potential effects of the proposed Project, it would be informative to present data on the actual physical attributes of the existing road (i.e. height, slope, grain size) in-order to understand how the design drawings translated into an 'as-built' road;
- Although the existing haul road was designed to have side slopes of 4:1 (horizontally: vertically), information is not presented, in the form of post construction survey data, to verify the extent to which this design objective was achieved. Similarly, information on other 'as built' attributes of the existing road, such as height above surrounding land and grain size, are not presented.

INFORMATION REQUEST

The GN requests the following information from the Proponent:

1. Clarify whether a survey of the existing haul road has been conducted to estimate its height above the surrounding land at intervals along its length and to verify that side slopes of the road are 4:1 (horizontal to vertical). If available, provide this data for review;
2. Explain the apparent discrepancy between the statement that road sides will be sloped to 4:1 to facilitate caribou crossing and the design drawings presented in Volume 1, appendix 1-B;
3. Clarify whether the widened haul road embankments will be sloped to 4:1 along its entire length;
4. Confirm the grain size of the materials covering the existing road's embankments. Clarify whether the same grain size will be used to cover the widened road's embankments; and
5. Confirm whether the widening of the road will require the construction of safety berms or barriers at any point(s) along the road.

GN IR #06 – SNOW MANAGEMENT ALONG THE HAUL ROAD	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent
Subject/Topic	Snow Management Along the Haul Road
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit - Expansion Project. Section 1.2.8. Haul Roads, All-Weather Roads, and Winter Roads

IDENTIFICATION OF ISSUE

Snowbanks and drifts that form along the haul road via natural processes or road management practices may pose a barrier to wildlife movements. Widening of the haul road may increase the potential for this effect to occur.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Snow banks and drifts formed along the sides of roads, as a result of ploughing operations or natural drifting, may pose a barrier to wildlife movements if they are high or deep enough. This may be a particular problem during the spring when these banks and drifts soften thereby increasing the tendency for animals to sink when trying to cross them.

As part of the proposed Expansion Project, the haul road will be widened from its current 9.5 meters to 15 meters. The rationale presented for widening the road is as follows:

> "To support the Expansion Project, Agnico Eagle proposes to update the haul road from 9.5 m width to 15 m width to ensure safe passage of haul trucks. Efficiency of traffic movement on the haul road is dictated by safety. In 2018, Agnico Eagle conducted an assessment which included field trials with the long haul trucks to determine optimal safety, efficiency, and production of hauling from Whale Tail Pit site. It has been determined that a 15 m road width would allow long haul trucks to pass each other safely, which a 9.5 m road width does not allow. Furthermore, during wintertime, snow tends to pile up on one side of the road and, as such, the proposed expansion will improve driving conditions." (FEIS Addendum, section 1.2.8)

Presumably, with widening of the haul road a larger volume of snow will require removal from the road surface. This may present challenges in terms of snow management and increase the potential for the formation of snow banks and drifts. The FEIS Addendum does not discuss whether updates to the snow management procedures for the haul road are necessary or planned. Snow management procedures in the Haul Road Management Plan and the Terrestrial Ecosystem Management Plan (TEMP) are unchanged from the Approved Project.

INFORMATION REQUEST
The GN requests the following information from the Proponent: 1. Confirm what, if any, plans are in place to manage the additional snow removal required as a result of haul road widening; 2. Clarify how additional snow will be managed in-order to avoid formation of banks or deep drifts that could be barriers to caribou; and 3. Confirm how the effectiveness of snow management measures along the haul road will be monitored and verified (in terms of snow bank heights and drift depth present along the road side).

GN IR #07 – BLASTING AT THE MINE SITE	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Blasting at the Mine Site
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit - Expansion Project, Appendix 4-B - Air Emissions Inventory. Section 4.B-2 -Drilling, Blasting, and Explosive Combustion Emissions

IDENTIFICATION OF ISSUE

Section 4.B-2 states that there are two blasts per day, but data in Tables 4-B-1 and 4-B-2 imply six blasts per day. Emission Factors used for estimating emissions from explosive detonation assume an Ammonium Nitrate Fuel Oil mixture (ANFO) is used. Other explosives that are typically used for blasting (e.g. dynamite gelatin) can have much larger emissions of carbon monoxide and nitrogen oxides. If other explosives are used on site, the emission factors employed may be incorrect.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

If there is no commitment to use ANFO as the explosive onsite, then a more conservative emission factor is appropriate.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Clarification regarding the number of blasts that will take place on a daily basis and the type of explosive materials that will be used.

GN IR #08 – MATERIAL HANDLING EMISSIONS	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Material Handling Emissions
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4-B - Air Emissions Inventory. Section 4.B-3 (Material Handling Emissions) • FEIS Addendum - Whale Tail Pit - Expansion Project, Section 4-A: Air Quality Baseline. Section 4.A-2 (Existing Weather and Climate). • United States (US) Environmental Protection Agency (EPA) document – Air Pollutant (AP) 42, Fifth Edition, Volume I, Chapter 13.2.4

IDENTIFICATION OF ISSUE

The United States' EPA AP 42 methodology is used for estimating material handling emissions (Appendix 4-B, p. 4). A mean wind speed of 5 m/s (or 18 km/hr) is used for open pits even though the annual wind speed measured at the Baker Lake A Station is 5.5 m/s (20 km/hr) and can average wind speeds > 6 m/s from October through February (Appendix 4-A, Section 4.A-2, Table 4-A-4). Employing the annual average wind speed of 5.5 m/s results in a 13% emission factor increase.

After reviewing Table 4-B-4 it is still unclear what daily tonnes values were used for in-pit, underground material, and ore pad material handling. Values presented in Section 4.B-3 for daily ore and waste tonnage do not appear to identify all emission values.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The wind speeds employed for estimating material handling emissions may lead to an underestimate of emissions. Further, it is difficult to assess the emission rates presented in Table 4-B-4 without fully understanding the daily ore and waste tonnage.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Rationale for using a speed lower than the Baker Lake measured average for material handling emission predictions. Consideration may be given to the use of monthly emission factors; and
2. Daily ore and waste tonnages as they pertain to the daily emission rates presented in Table 4-B-4.

GN IR #09 – MINING AREA UNPAVED ROAD DUST	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Mining Area Unpaved Road Dust
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4-B - Air Emissions Inventory. Section 4.B-5 (Mining Area Unpaved Road Dust).

IDENTIFICATION OF ISSUE

Road dust from mobile equipment other than haul trucks was assumed to be minimal, causing the Proponent to not calculate road dust from these other sources (Appendix 4-B, Section 4-B-5, p. 8). Although it is true that any of the other mobile sources would generate emissions that are minimal on their own in comparison to the much heavier haul trucks, the total of all other mobile sources should be fully accounted for.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The sum of non-haul mobile source emissions has the potential to be significant. A complete assessment of mining area unpaved road dust cannot be made prior to the estimation of the contribution of non-haul trucks to unpaved road dust.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Revised estimates of mining area unpaved road dust which includes non-haul trucks.

GN IR #10 – WIND EROSION EMISSIONS: ORE PAD AND WASTE ROCK STORAGE	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Wind Erosion Emissions from the Ore Pad and Waste Rock Storage Facilities
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4-B - Air Emissions Inventory. Section 4.B-7 (Wind Erosion Emissions from Ore Pad and Waste Rock Storage Facility).

IDENTIFICATION OF ISSUE

When estimating wind erosion emissions from the ore pad and Waste Rock Storage Facilities (WRSF), the Proponent assumed no erosion emission potential when there is snow cover on the ground. (Appendix 4-B, Section 4.B-7). With the ore pad and WRSF being constantly disturbed, and fresh erodible material added, this assumption is likely invalid. Snow cover in these circumstances would be minimal.

Additionally, the Proponent separated the ore pad and the WRSFs into active and inactive areas (Appendix 4-B, Section 4.B-7). The active areas were disturbed every hour while the inactive areas were disturbed once in the unfrozen season. No rationale was provided for the size of the active areas.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The assumption of no erosion emission potential during periods of snow cover needs to be qualified, particularly considering snow cover months are those that have some of the highest maximum hourly wind speeds (Appendix 4-A, Table 4-A-4). Additionally, choosing too small of an active ore pad or WRSF area may lead to an underestimation of emissions.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Rationale for the assumption that there is no erosion emission potential during periods of snow cover; and.
2. Rationale for the chosen active area sizes for the ore pad and each of the Whale tail and IVR WRSFs.

GN IR #11 – AIR QUALITY MONITORING STATIONS	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Air Quality Monitoring Stations
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 8-E– Air Quality and Dustfall Monitoring Plan. Technical Summary. Section 1.2 (Monitoring Locations).

IDENTIFICATION OF ISSUE

Section 1.2 of Version 4 of the Air Quality and Dustfall Monitoring Plan (AQDMP) (December, 2018) discusses the future addition of station DF-5 and dustfall transects at approximately kilometers 18, 36, and 54 along the Whale Tail Pit Haul Road. The locations for these stations were selected in consultation with Environment Canada (Appendix 8-E, Section 1.2). However, it is unknown whether these stations have been established or not.

DF-5 will be moving once the IVR pit and the associated Waste Storage Rock Facility have been established. DF-5 will likely be re-located to the site of DF-6 but a move will interrupt the continuity of the data. It is not certain whether the Proponent has consulted with Environment Canada regarding the relocation of the station and the potential move of DF-5 to the proposed DF-6 site.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The relocation of the DF-5 station will result in the inability to maintain a continuous dataset at the site and would make monitoring long term trends problematic.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Clarify whether the DF-5 and transect locations have been established in 2018 as outlined in the AQDMP;
2. Rationale, considering alternatives, for the monitoring station placement at the Whale Tail expansion site; and
3. Information on whether there are plans to establish a more permanent monitoring station at the Whale Tail Expansion site to ensure the collection of a continuous long-term dataset.

GN IR #12 – PARTICULATE MATTER DEPOSITION METHODOLOGY	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Particulate Matter Deposition Estimation Methodology
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4-C – Air Quality Technical Summary. Section 4.C-5 (Particulate Matter Deposition). • FEIS Addendum - Whale Tail Pit - Expansion Project, Appendix 4-C – Air Quality Technical Summary. Section 4.C-7.3.4 (Total Suspended Particulate Predictions). • U.S. Environmental Protection Agency, AMS/EPA Regulatory Model (AERMOD). • EPA, 2017: Guideline on Air Quality Models, Appendix W to 40 CFR Part 51. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

IDENTIFICATION OF ISSUE

In section 4.C-5, the Proponent states that they employed the AMS/EPA Regulatory Model (AERMOD) method 1 to model the deposition of Total Suspended Particulates (TSP), Particulate Matter (PM), PM_{10}, and $PM_{2.5}$. Method 1 is used when particle size distribution is known or when a significant fraction of the total particulate mass has an aerodynamic diameter of 10 µm or larger (EPA, 2017). This is different from the method used to estimate deposition for the Approved Project, method 2, which is utilized when the particle size distribution is not well known and when a small fraction has a diameter of 10 µm or larger (EPA, 2017). Section 4.C-7.3.4 then states:

> "The use of method 2 for particulate matter deposition have resulted in higher deposition and thus more depletion of airborne particulate matter." (Appendix 4-C – Air Quality Technical Summary, Section 4.C-7.3.4)

The GN notes that, as written, it is unclear whether method 1 or method 2 was used for modelling particulate matter deposition. If method 1 was utilized why has the Proponent chosen to change the particulate matter deposition method employed? Has the Proponent characterized the size distribution of the particulate matter emitted at the site? Can the Proponent justify their choice of mean diameter size for particulate matter in the various size bins (i.e. <2.5 µm, 2.5 to 10 µm, and >10 µm)?

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The choice of AERMOD method 1 or 2 and the diameter and density parameters will change the modelling results for the deposition of TSP, PM_{10}, and $PM_{2.5}$. These parameters (i.e., TSP,

PM_{10}, and $PM_{2.5}$.) have both health and aesthetic implications.
INFORMATION REQUEST
The GN requests the Proponent provide the following information: 1. State which particulate matter deposition method was used. If a method different than that used for the Approved Project was used for the Expansion Project, the Proponent should provide information and rationale justifying the change; and. 2. Justification for the choice of diameter and density parameters presented in Table 4-C-5.

GN IR #13 – APPLICABLE AMBIENT AIR QUALITY CRITERIA	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Applicable Ambient Air Quality Criteria
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4-C – Air Quality Technical Summary, Section 4.C-2.2 (Ambient Air Quality Standards) • FEIS Addendum - Whale Tail Pit - Expansion Project, Appendix 4-C – Air Quality Technical Summary, Table 4-C-12 (Summary table of Model Predicted NO_2 Concentrations). • Canadian Council of Ministers of Environment (CCME) (2019) Canadian Ambient Air Quality Standards (CAAQS). Retrieved: https://www.ccme.ca/en/current_priorities/air/caaqs.html

IDENTIFICATION OF ISSUE

The Proponent has compared Project emissions to Nunavut Ambient Air Quality Standards (NAAQS).The Proponent did not use the more stringent Canadian Ambient Air Quality Standards (CAAQS) for Nitrogen dioxide (NO_2) that will come into effect in 2020 and 2025 during the lifetime of the mine and the proposed Expansion Project. Assuming standard temperature and pressure (STP), the 2020 1-hr NO_2 CAAQS will be 121.59 µg/m3 and the 2025 1-hr NO_2 CAAQS will be 85.11 µg/m3.

Additionally, there appears to be an error in Table 4-C-2. The Proponent lists sulfur dioxide (SO_2) and NO_2 NAAQS correctly as mass densities (in units of $\mu g/m^3$) but fails to list the corresponding mixing ratios parts per billion by volume (ppbv) values correctly.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

By 2020 when the new CAAQS come into effect the 1-hr NO_2, will have exceeded the threshold at the grave site 4, grave site 5, and caching area 2 health receptors. Furthermore, when the 2025 CAAQS come into effect the 1-hr NO_2 threshold will be exceeded at all health receptors with the exception of grave site 2 and the fishing marker (CCME, 2019). These exceedances will occur even though the Proponent has utilized the ozone limiting method (OLM), a less conservative method, for estimating their nitric oxide (NO) to NO_2 conversion rates.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Justify the use of the OLM method to estimate NO to NO_2 conversion; and

2. Identify mitigation measures to address likely threshold exceedances in order to remain compliant with ambient air quality objectives including the incoming 2020 and 2025 CAAQS, particularly at the sensitive health receptor sites.

GN IR #14 – PERMISSIBLE SOUND LEVEL VALUES	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Applicable Permissible Sound Level Values
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4E– Addendum Noise and Vibration Impact Assessment, Technical Summary. Section 4.E-3.3.1. Table 4-E-10: Applicable Permissible Sound Level Values • Alberta Energy Regulator (AER) Directive 038: Noise Control. February, 2007.

IDENTIFICATION OF ISSUE

The Alberta Energy Regulator (AER) Directive 038 is used as the basis for the noise impact assessment (Appendix 4E, Section 4.E-3.3.1). The Permissible Sound Levels (PSLs) have been set to 50 dBA L_{eq} Daytime/40 dBA L_{eq} Nighttime during the summer and set to 55 dBA L_{eq} Daytime/45 dBA L_{eq} Nighttime during the winter. It appears Adjustment A1: Seasonal Adjustment has been used to establish the wintertime PSL values. However, the AER Directive 038 clearly states that Adjustment A1: Seasonal Adjustment is not to be added when determining the PSL for design purposes. Adjustment A1 is intended to be used and may be allowed only in the case of a wintertime noise complaint.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The GN acknowledges that the use of AER Directive 038 is not a requirement, AER Directive 038 has been chosen by the Proponent to assess noise effects. The GN also acknowledges that the PSL values presented are most likely consistent with the values established during the noise assessments for the 2016 Approved Project FEIS for the Meadowbank Mine. It is not clear to the GN why the Proponent is claiming Adjustment A1. Using the PSL values established for the summer would change the assessments presented for the wintertime noise modelling results.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Justification for claiming the A1 Adjustment to establish wintertime PSL values during the design process for the Expansion Project; and
2. Information explaining whether using the PSL values established for the summer would change any of the assessments presented for the wintertime noise modelling results.

GN IR #15 – EXISTING AMBIENT NOISE LEVELS	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Representative Existing Ambient Noise Levels
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Appendix 4D–Noise Baseline Report. Prepared by Golder Associates. December, 2015. • FEIS Addendum - Whale Tail Pit - Expansion Project, Volume 4, FEIS Addendum. Section 4.4.2. Table 4.4-1: Representative Existing Ambient Noise Levels • Alberta Energy Regulator (AER) Directive 038: Noise Control. February, 2007.

IDENTIFICATION OF ISSUE

The Alberta Energy Regulator (AER) Directive 038 is used as the basis for the noise impact assessment. The existing ambient noise levels have been set to 30 dBA daytime/ nighttime and 45 dBA daytime/nighttime, based upon the 2015 baseline noise field survey. The Permissible Sound Levels (PSLs) in AER Directive 038 are premised on a 5 dBA L_{eq} allowance for industrial presence, with an assumed rural ambient sound level of 35 dBA L_{eq}. This results in a default nighttime PSL of 40 dBA L_{eq} for a rural environment with no adjustments. In AER Directive 038, Adjustment A2 (i.e. the Ambient Monitoring Adjustment) - is specifically designed to adjust the PSL based upon the measurements from a baseline sound survey such as the 2015 baseline noise field survey (Appendix 4D). If the PSL is not adjusted using the site-specific ambient sound levels, then the assumed ambient sound level should be used to calculate the cumulative sound levels to be compared to the default PSL. If the site-specific ambient sound levels are used to calculate the cumulative sound levels, then a site-specific PSL determined by application of the A2 Adjustment should be determined. The cumulative sound level calculated using the site-specific ambient sound level can then be compared to the site-specific PSL.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The GN acknowledges that the use of AER Directive 038 (AER, 2007) is not a requirement, yet it has been chosen by the Proponent to assess noise effects. The GN also acknowledges that the use of site-specific ambient sound levels based upon measured data should be an improvement over using assumed ambient sound levels. These site-specific ambient noise levels have been used to determine cumulative dBA noise levels in Tables 4.4-2, 4.4-5 and 4.4-7, but were not compared to the default PSL values as per AER Directive 38 (AER, 2007, Sections 3.3 and 3.4). The GN is concerned that an inconsistent approach is being used in the noise assessment.

INFORMATION REQUEST
The GN requests the Proponent provide the following information: 1. Justification for using the measured ambient noise levels instead of the assumed ambient sound level, yet not adjusting the PSLs by claiming the A2 Adjustment to establish site-specific PSL values; 2. Analysis with revised tables showing a consistent approach of using either 1) default values (assumed ambient of 35 dBA L_{eq} and default nighttime PSL of 40 dBA L_{eq}), or 2) site specific values (measured ambient of 30 dBA and the site specific PSL calculated using the A2 Adjustment); and Based upon the analysis requested in 2) above, the GN requests the following information: *3.* Whether the Expansion Project is predicted to comply with AER Directive 038.

GN IR #16 – NOISE ASSESSEMENT RECEPTOR LOCATION	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Noise Assessment Receptor Location
References	• Final Environmental Impact Statement (FEIS) Addendum - Whale Tail Pit - Expansion Project, Volume 4 • FEIS Addendum - Whale Tail Pit - Expansion Project, Volume 4. Appendix 4E – Addendum Noise and Vibration Impact Assessment Parameters. • Alberta Energy Regulator (AER) Directive 038: Noise Control. February, 2007.

IDENTIFICATION OF ISSUE

The Alberta Energy Regulator (AER) Directive 038 is used as the basis for the noise impact assessment (Appendix 4E, Section 3.1). All PSL assessments are focused on that point on the LSA boundary with maximum predicted Approved and Expansion Project noise level (i.e. Rmax). The LSA is defined in Appendix 4E as being a buffer surrounding the Expansion Project footprint at a distance of 5 km. The AER Directive 038 indicates that noise effects should be assessed at 1.5 km from the facility fence line in the absence of occupied dwellings. (AER, 2007)

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The GN acknowledges that the use of AER Directive 038 is not a requirement, yet it has been chosen by the Proponent to assess noise effects. The GN also acknowledges that the LSA boundary Rmax location is most likely consistent with the location established during the noise assessments for the Meadowbank Mine. The GN is concerned that a distance of 5 km is being used for all PSL assessments, rather than a distance of 1.5 km as specified in AER Directive 038.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Justification for choosing the Rmax point on the LSA boundary, where the LSA distance is 5 km, rather than the Rmax point on a 1.5 km boundary;
2. Analysis as to whether a revised PSL assessment using the Rmax point on a 1.5 km boundary still indicates compliance with AER Directive 038; and
3. An explanation as to why the assessment outlined in Meadowbank Mine does not indicate compliance with AER Directive 038.

GN IR #17 – LANDFARM DESIGN	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Landfarm Design
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfarm Design and Management Plan_ Version 1_NIRB October 2018 • FEIS Whale Tail Pit- Expansion Project, Landfill Design and Waste Management Plan_ Version 2_NIRB December 2018

IDENTIFICATION OF ISSUE

The landfarm facility design has been advanced to a conceptual level but more details with a supporting conceptual plan and Section figures are needed to understand the design intent. The landfarm facility design details require further support.

Landfarm Remediation Period:

Central to the facility design is the maximum anticipated landfarm capacity which is based on the time to remediate contaminated soils:

> "Based on experience, it is estimated that soils contaminated with light end PHCs will require four (4) full summer seasons for complete remediation." (Agnico Eagle, 2018, Section 2.*3*.1)

Evidence or support for the remediation period described below is not provided.

Berms and Liners:

No details are given regarding what the berms or the base will be made of or what kind of liner the Proponent recommends. The Proponent should consider if low permeability native material is available to construct the berms or if they will be rock fill berms with a liner:

> "While the landfarm will have an impermeable liner, visual inspections by the Environment Department will be conducted for seepage of contact water coming through the perimeter berm, or the accumulation of water within the containment berm." (Agnico Eagle, 2018, Section 3.6.2)

Water Management:

The Proponent has established that water in the landfarm will be managed using pumps to extract excess water but not how that water will be collected, directed, and stored (Agnico Eagle Mines, 2018a). If the water management is anticipated to be primarily handled through

evaporation off of the windrows then the anticipated precipitation and evaporation rates for the facility should be estimated. Most importantly, the Proponent has not:

- Specified a stormwater management plan for the facility that specifies the design storm for the facility;
- Specified how the stormwater be managed; or
- Specified whether there is a plausible risk of overtopping the containment berms.

Ground Ice / Permafrost Impacts to Liner:

The Proponent does not address the possibility of ground ice/permafrost or how ice melting could impact the impermeable liner, nor the possibility of damage resulting from machinery travel over top and freeze-thaw cycles:

> "In the event of water accumulation or seepage, the ponded water will be analyzed for Water License 2AM-WTP1826 Schedule 1 Table 1 Group 4 monitoring parameters prior to discharge to the adjacent IVR Attenuation Pond. Alternatively, ponded water will be sprayed on the windrows to increase moisture content, as required." (Agnico Eagle, 2018a, Section 3.6.2).

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The landfarm facility design has been advanced to a conceptual level but the GN needs more details with a supporting conceptual plan and section figures to understand the facility's design intent. Furthermore, the proposed facilities lack supporting stormwater management plans. This lack of detail, figures, and a stormwater management plan impede the GN's assessment of the Project's risks and potential impacts.

INFORMATION REQUEST

The GN requests that the Proponent provide the following information:

1. Justification for the stated remediation period for the contaminated soils in the landfarm;
2. Provision of plan and section profiles, illustrating the design intent and key features of the proposed facility;
3. Further details regarding the impermeable liner, berm fill, base and any other construction materials to be used in the facility;
4. Further details on how water within the facility will be managed or a water balance justifying why water management is not likely to present a challenge within the facility;
5. Provision of a stormwater management plan with accompanying design criteria for the facility; and
6. Contingencies to reduce or minimize any damage resulting from machinery travel over top the liner and freeze-thaw cycles.

GN IR #18 – LANDFARMING EXPERIENCE AT THE MEADOWBANK MINE	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Landfarming Experience at the Meadowbank Mine
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfarm Design and Management Plan_ Version 1_NIRB October 2018 Appendix 8-B.4: Whale Tail Pit – Landfarm Design and Management Plan (LDMP) • Golder (Golder Associates Ltd). 2007. Technical Memorandum: Landfarm Option Analysis, Meadowbank Gold Project, Nunavut. Prepared for: Agnico-Eagle Mines Ltd. August 23, 2007.

IDENTIFICATION OF ISSUE

The design and management plan document states that its focus is based on experience and research previously carried out at the Meadowbank Mine. Specifically, the document overview indicates that a landfarm at the Meadowbank Mine is already permitted, and that landfarm experience or research was gained at this mine and the Meliadine Gold Project site:

> "The Whale Tail Pit project, as approved under Project Certificate No.008 and Water Licence 2AM-WTP1826 does not include the use of a landfarm at the Whale Tail project site to manage waste but rather includes use of the landfarm located at the Meadowbank Mine." (Agnico Eagle, 2018a. Section 1.1)

And:

> "The Landfarm Design and Management Plan (LDMP), which is a component of the Responsible Mining Management System (RMMS), focuses on minimizing the waste footprint on-site, and maximizing remediation potential through implementation of bioremediation experience and research carried out at the Agnico Eagle's Meadowbank Mine and Meliadine Gold Project sites. Onsite storage and remediation has been established as the preferred method for treatment of petroleum hydrocarbon (PHC) contaminated soil that may be generated at the Project site. Specifically, remediation through landfarming has been identified as the primary treatment option and, as such, is the focus of this Plan." (Agnico Eagle, 2018a. Section 1.1)

The details of the landfarming experience at Meadowbank have not been provided.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Given that a landfarm at the Meadowbank Mine is already permitted, and that landfarm

experience or research was gained at this mine and the Meliadine Gold Project, the Proponent should provide details of the landfarming experience at Meadowbank. This information would increase the GN's confidence that a new landfarm to support the Whale Tail Expansion Project can be designed and operated in an environmentally sound manner.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. The Golder Associates Ltd. (2007) Technical Memorandum listed in the reference section for the rationale on landfarming activities for a similar project site.

GN IR #19 – SOIL TESTING FOR UNKNOWN CONTAMINANT SOURCES	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Soil Testing for Unknown Contaminant Sources
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfarm Design and Management Plan_ Version 1_NIRB October 2018. Appendix 8-B.4: Whale Tail Pit – Landfarm Design and Management Plan (LDMP)

IDENTIFICATION OF ISSUE

The LDMP document states that:

> "The landfarm facility will only treat and/or store light PHC contaminated soils that have been generated through mine-related activities at the Project. Material from other sites will not be accepted without approval from the NWB, Crown-Indigenous Relation and Northern Affairs Canada (CIRNAC) Water Resources Officers and the Kivalliq Inuit Association." (Agnico Eagle, 2018a, Section 3.1.1)

And:

> "In the event that the contaminant source is unknown, soil samples will be analyzed for PHCs and possibly additional contaminants prior to placement in the landfarm. These additional parameters could include total metals, oil and grease, and volatile organic compounds. Analysis for additional compounds will be determined by the Environment Department on a case-by-case basis. Concentrations of contaminants will be compared to the site background values (for metals) and/or criteria in the Government of Nunavut (GN) Guidelines for Contaminated Site Remediation (GN, 2009). If this analysis indicates soil contamination above background or GN guidelines with any substances not approved for landfarming (i.e. non-PHC contaminants), the spill material will not be placed in the landfarm. This is to ensure PHC contaminated soils are not contaminated with other products." (Agnico Eagle, 2018a, Section 3.1.1)

It is unclear from these two statements what was meant by the sampling of soils that contained an 'unknown contaminant source', which would be required to be sampled for characterization prior to being placed into the landfarm.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Information provided in the management plan describes situations where the origin of the material or impacts would be unknown from mining operations. The ultimate fate of soils that do not meet the landfarm's acceptance criteria is not clear.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Clarification respecting the purpose for the 'unknown source' sampling protocol; and
2. Clarification respecting how the soils that do not meet the landfarm's acceptance criteria will be managed.

GN IR #20 – SEWAGE SLUDGE CHARACTERIZATION	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Sewage Sludge Characterization
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfarm Design and Management Plan_ Version 1_NIRB October 2018. Appendix 8-B.4: Whale Tail Pit – Landfarm Design and Management Plan (LDMP)

IDENTIFICATION OF ISSUE

Sewage sludge generated from the mining operations was indicated to be used on an as-needed basis as a nutrient source for the landfarm (Agnico Eagle, 2018a, Section 3.4.4) but a characterization of the sewage sludge is not provided.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The landfarm will be restricted to petroleum or glycol impacted soil and tested for reducing concentrations of these parameters. The introduction of concentrated effluent (sludge) may contain unwanted parameters not screened for analysis during landfarm performance testing.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. An initial or representative characterization of the sludge that will be used as a nutrient source at the landfarm; or the protocol to be used to characterize the sludge prior to placement into the landfarm that is capable of detecting unwanted parameters in the sludge.

GN IR #21 – TESTING FOR PAH's	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Testing for Polycyclic Aromatic Hydrocarbons
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfarm Design and Management Plan_ Version 1_NIRB October 2018. Appendix. 8-B.4: Whale Tail Pit – Landfarm Design and Management Plan (LDMP) • Canadian Council of Ministers of Environment, 2006, 20013. Federal Guidelines for Landfarming PHC Contaminated Soils.

IDENTIFICATION OF ISSUE

Products such as diesel and aviation fuels potentially contain Polycyclic aromatic hydrocarbons (PAHs), which are known to be more difficult to treat without amendment (Federal Guidelines for Landfarming PHC Contaminated Soils, CCME 2006/2013). Table 3-1 displays soil remediation criteria for post-treatment soil (Agnico Eagle, 2018a, Section 3.5.1) but it does not list PAHs. Instead, it lists only lists BTEX compounds and PHC fractions F1-F4.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The presence of PAHs may affect landfarm effectiveness. Testing for PAHs in the contaminated soil is needed.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Justification for excluding PAHs from analytical schedule for screening of incoming material and from post treatment performance criteria.

GN IR #22 – WATER MANAGEMENT INSPECTIONS	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Water Management Inspections
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfarm Design and Management Plan_ Version 1_NIRB October 2018. Appendix. 8-B.4: Whale Tail Pit – Landfarm Design and Management Plan (LDMP)

IDENTIFICATION OF ISSUE

Under Section 3.6.2 (water management), a weekly inspection is noted as:

> "While the landfarm will have an impermeable liner, visual inspections by the Environment Department will be conducted for seepage of contact water coming through the perimeter berm, or the accumulation of water within the containment berm. This will be conducted on a weekly basis starting after freshet and continuing until October when water is likely to be present." (Agnico Eagle, 2018a, Section 3.6.2)

Table 3.2 following Section 3.8 (Summary of Activities) only lists visual inspections as occurring twice per summer.

Section 3.6.2 and Table 3.2 appear to be inconsistent with respect to the frequency of visual inspections.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The Proponent has committed to two visual inspections per summer. More frequent visual inspections are desirable, considering that the most likely time that seeps would occur is after winter or severe weather events during spring and summer seasons. Water management should be part of the Proponent's landfarm record keeping and annual reporting. This would increase the GN's confidence that an unforeseen problem at the new landfarm would be detected and resolved.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. The frequency of visual inspections to be conducted at the landfarm; and
2. Whether water management will be part of the record keeping and annual reporting schedule.

GN IR #23 – LANDFILL DESIGN	
Department	Environment
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Landfill Design
References	• Final Environmental Impact Statement (FEIS) Whale Tail Pit – Expansion Project, Landfill Design and Waste Management Plan_ Version 2_NIRB December 2018. Appendix 8-B.4: Whale Tail Pit – Landfarm Design and Management Plan (LDMP)

IDENTIFICATION OF ISSUE

The landfill facility design has been advanced to a conceptual level but the GN needs more details with supporting conceptual plan and section figures to understand the design intent.

Timing of Landfill and Waste Rock Storage Facility Development:

Embedding the landfill in the waste rock storage facility (WRSF) is a sound concept for reducing land use and overall impacts associated with this waste. However, the timing of the landfill and the waste rock dump development need to be described. According to the schedule, the landfill will be:

> "one of the last mine infrastructures to be closed as it will be used to landfill demolished waste" (Agnico Eagle, 2018b, Section 1.3)

Table 3.1 sets out the estimated waste that will accumulate in the landfill:

Table 3.1 Estimated Waste in Landfill

Project Phase	Waste Accumulated in Landfill (m^3)
Construction and Operations	10,694
Closure	66, 000
Total	76,700

(Agnico Eagle, 2018b, Section 3.4)

However, the landfill's position in the middle of the WRSF would mean that a large volume of the WRSF would not be available until after the landfilling was completed. The landfill and WRSF timelines need to be reconciled.

Sub-landfills and Rock Filled Berms:

The Proponent describes the use of sub-landfills, rock fill berms for wind shielding, and a cover as follows:

> "The sub landfills will have a rectangular shape with the length perpendicular to the

prevailing wind direction so that much of the waste can be protected from wind by the rock fill berm. The sub landfills will be built and buried according to the evolution of the WRSF. As mining progresses, the elevation and location of the sub landfills will change." (Agnico Eagle, 2018b, Section 4)

The design intent is not clear. The plan would benefit from a figure illustrating the conceptual plan, construction materials, and sections of the landfill.

Temporary Cover:

The Proponent describes the temporary cover as follows:

> "Areas where the waste has been placed to full height and levelled, will be progressively covered by placement of a minimum 0.3 m thickness of rock fill on top of the waste." (Agnico Eagle, 2018b, Section 5.1.3)

The GN has concerns that a temporary landfill cover of 0.3 m minimum thickness is too thin for run-of-the-mine rock fill.

Landfill Attendants:

The Proponent states that the landfill does not require a full-time attendant during placement, but rather, a dozer will spread the waste (Agnico Eagle, 2018, Section 5.1.4). There is no information provided regarding how long, on average, the waste can be expected to be exposed before being covered. Uncovered or uncompacted waste may blow away from the landfill site.

Stormwater Management:

The Proponent does not state the design of the stormwater inflow or how it will be managed. The GN has concerns that stormwater runoff could carry waste away through the rock fill or cause erosion at the interface between the rock fill floor and the native ground.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The landfill facility design has been advanced to a conceptual level but the GN needs more details with supporting conceptual plan and section figures to understand the design intent. Furthermore, the proposed facilities lack supported stormwater management plans. This lack of detail, figures, and stormwater management plans impedes the Government of Nunavut's ability to assess the Project risks and potential impacts.

INFORMATION REQUEST

The GN requests that the Proponent provide the following information:

1. A plan for how the Proponent will build the WRSF up and around the landfill after its completion;
2. Details regarding what material will be used to cover asbestos waste containing areas of the landfill;
3. Material specifications for the progressive cover used over the landfill facility and

consideration for how a 0.3 m cover would be constructed;
4. An estimate of the average period of time that the landfill waste could be exposed prior to being spread and compacted by dozer, and subsequently covered;
5. A stormwater management plan with accompanying design criteria for the facility; and
6. Contingencies to reduce/minimize any damage resulting from machinery travel over top and freeze-thaw cycles.

Appendix B: Socio-Economic Information Requests

GN IR #24 – FISCAL IMPACTS	
Department	Finance
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Fiscal Impacts to Government
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit – Expansion Project , Appendix 7-B Socio-Economic Assessment Update, Attachment 7-B-2 Detailed Economic Modelling Outputs

IDENTIFICATION OF ISSUE

In reference to *Table 7.B-2-2: Project-Generated Fiscal Impacts to Government, $ Million* (Appendix 7-B, Attachment 7-B-2, p. 41), this Table does not include Payroll Tax and Property Tax.

Accordingly, this Table indicates a total of $307.3M for Total Tax Revenue which appears to not be correct (an error of approximately $107M).

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Accurate data is crucial in order to properly review these impacts generated by the Project. This missing information on Payroll Tax and Property Tax and the error in Total Tax Revenue do not represent the accurate estimated impacts of the Project. In order to conduct further analysis of fiscal impacts to government generated by the project, the GN is requesting additional information.

INFORMATION REQUEST

The GN requests the following information:

1. Correction of Table Totals inclusive of all tax revenues to Government; and
2. Explanation why these particular areas of tax revenues were not included in Table 7.B-2-2.

GN IR #25 – ESTIMATED INCOME IMPACTS	
Department	Finance
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Estimated Income Impacts
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit – Expansion Project , Appendix 7-B Socio-Economic Assessment Update, Attachment 7-B-2 Detailed Economic Modelling Outputs

IDENTIFICATION OF ISSUE

In reference to *Table 7.B-2-4: Operations Labour Income by Year and Location, $ Million* (Appendix 7-B, Attachment 7-B-2, p. 42) and *Table 7.B-2-3: Project Operations Employment (Positions) by Location* (*ibid*, p. 42), the Nunavut Direct Labour Income Impacts divided by the Nunavut Direct Employment Impacts appears to reflect an average income per employee higher than anticipated. As stated in these Tables, Years 2020-2024 reflect an average income of <$155,000 annually.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

In order to conduct further analysis of income impacts of this Project, representation of the estimated income impacts of the project is crucial for the analysis of the beneficial local impacts of the Project.

INFORMATION REQUEST

The GN requests the following information:

1. Further clarification around the anticipated incomes for direct income in Nunavut.

GN IR #26 – WORKFORCE TRANSITION	
Department	Economic Development & Transportation
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Workforce Transition Into Expansion Project
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit – Expansion Project, Appendix 7-B Socio-Economic Assessment Update (December 2018) • Final Environmental Impact Statement (FEIS 2016) and Type A Water License Amendments – Whale Tail Pit, Volume 7 – Human Environment (June 2016)

IDENTIFICATION OF ISSUE

The Proponent notes that there will be operational requirements for the current workforce to transition between the Meadowbank, Meliadine, and Whale Tail project sites. Specific to the Expansion Project, the Proponent indicates:

> "Excluding the final year of operations when Project employment ramps down, direct average operational employment is expected to be 1,166 positions (Attachment 7-B-2, Table 7.B-2-3) Of these, nearly half (491 or 42%) are expected to be filled by Nunavummiut, the majority of which are employed at the Meadowbank Mine and will move over to the Expansion Project. This is a 25% increase (99 additional Nunavummiut employment opportunities) relative to the Approved Project operations workforce requirements. The Expansion Project therefore represents both an extension of employment opportunities for those currently working, and a source of new employment for Nunavummiut." (Appendix 7-B, Section 7-B-1.4.3, p.9)

In addition to the increase in employment opportunities for Nunavummiut, the Proponent notes:

> "With the Meadowbank Mine's workforce transitioning to the Approved Project and, later, to the Expansion Project, the Meliadine Mine will require a new operational workforce. The Approved Project is projected to generate 100 additional employment opportunities for Nunavummiut over those already employed at the Meadowbank Mine. The Expansion Project is projected to generate a further 99 opportunities for Nunavummiut for a combined total of 199 Nunavummiut opportunities extra to the Meadowbank Mine." (*Ibid*, p. 11)

However, as noted by the Proponent, this creates a competition for labour between projects. The Proponent states:

> "…while the Expansion Project creates employment opportunities (99) for Nunavummiut additional to those created by the Approved Project, ultimately it will compete with the

> Meliadine Mine for labour. With a limited labour pool to draw from in Kivalliq, it is expected that the Expansion Project and the Meliadine Mine will exhaust the regional labour force, necessitating a larger number of workers from outside the region. It is anticipated that the relatively small incremental demand for out-of-area workers extra to that already predicted for each project would be met, in part, by the southern labour force experienced in mining on a fly-in, fly-out rotation. This workforce would be housed in camp accommodations. In this scenario, the combined demand of the Expansion Project and the Meliadine Mine for Nunavummiut labour is not likely to result in the need for substantial numbers of workers from other regions of Nunavut. In the event that a small number of workers are drawn from other parts of Nunavut, they will be provided means with which to travel to site, and will be housed in camp accommodations." (*Ibid*, pg. 11-12)

Accordingly, the Proponent states in the FEIS Addendum:

> "Agnico Eagle will continue to prioritize residents of the Kivalliq Region for these positions, and to offer pick-up points in communities in an effort to prevent migration from other parts of the territory, or from within the Region to Baker Lake." (Appendix 7-B, pg. 9-10)

Attracting, training, and retaining Nunavummiut employees contributes to meeting overall local, and particularly Inuit, employment goals of the Project. However, it is unclear why the Proponent indicates both priority hiring from the Kivalliq Region, secondarily, Nunavut, and the need for southern labour force without establishing significant recruitment initiatives aimed at Nunavummiut outside of the Region for the Expansion Project.

As stated in the 2016 FEIS:

> "The Project will maintain current pick-up point in Kivalliq communities, and any incidental employment that arises via attrition will be filled with priority given to residents of the Kivalliq Region, and, secondarily, Nunavut." (FEIS 2016, Vol. 7, p. 7-45)

The Proponent predicts that the Expansion Project in competition with Meliadine Mine will exhaust the regional labour force, necessitating a larger number of workers from outside the Kivalliq Region. The Proponent has stated the combined demand for labour for the Expansion Project and the Meliadine Mine will create additional opportunities for Nunavummiut. Yet, this additional need for labour is not likely to result in substantial numbers of workers from the two other regions in the territory, therefore, resulting in a southern workforce meeting the demand for additional labour incrementally.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

Turaaqtavut, the GN's current mandate, prioritizes improving economic opportunities to encourage community self-reliance and provide local employment through the mining industry, amongst others, as well as developing and managing renewable and non-renewable resources for the long-term benefit of Nunavummiut. Economic development and resource development provide access to employment and training for Nunavummiut and the GN seeks strong partnerships between the GN and employers so that these opportunities are enhanced.

INFORMATION REQUEST
The GN requests that the Proponent provide the following information: 1. Clarification respecting the Proponent's recruitment strategy for hiring Nunavut residents outside the Kivalliq Region (i.e. Nunavut wide recruitment); 2. Whether the Proponent will offer transportation between all Kivalliq communities and the Expansion Project to potential employees; 3. Details of the Proponent's efforts (or rationale for lack thereof) to recruit Nunavummiut across the territory ahead of a southern labour force to fill the additional employment opportunities generated; 4. A breakdown of new employment opportunities generated by the Project, by skill-level; 5. A detailed plan for the transition of the current workforce between projects, including whether a communications plan exists to ensure current employees are aware of the workforce transition into the Expansion Project and the associated opportunities.

GN IR #27 – ROAD SAFETY	
Department	Economic Development & Transportation
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Road Safety
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit – Expansion Project, Volume 8, Appendix 8-C.1 – Whale Tail Pit Haul Road Management Plan

IDENTIFICATION OF ISSUE

The Whale Tail Pit Haul Road Management Plan notes:

> "The Whale Tail Pit Haul Road is a private road used solely by Agnico Eagle and its contractors. Agnico Eagle intends to keep the road closed for public use at this time. This is mainly due to the fact that the road is not entirely accessible from Baker Lake as there is restricted use near the Meadowbank mine site, which bisects the road." (Appendix 8-C.1, Section 4.1, p. 14)

However, the Proponent's Road Management Plan also states:

> "Traditional land users (i.e. hunters on ATVs or snowmobiles) crossing the Whale Tail Haul Road on identified ramps must yield to Haul Road Traffic; Haul Road Traffic approaching traditional land use crossings must be vigilant of the potential use by ATVs or snowmobiles. This intersection will have a stop sign on the traditional land use crossing locations to give way to the mine haul trucks. Hunters and traditional land users on snowmobiles or ATVs will have to stop, look both ways and yield to traffic before crossing the road. Traditional land use marked signs will be installed on the haul road to warn haul trucks and other vehicles on the road to ensure users protection and safety of traditional land users on ATVs or snowmobiles." (Appendix 8-C.1, Section 7.7.1, p. 25)

Section 9 of the Road Management Plan outlines the safety rules that will apply to all users of the Whale Tail Haul Road, inclusive of a reporting system for activity and monitoring of use of the Haul Road, as indicated in Appendix 8-C.1:

> "Agnico Eagle security personnel along with Agnico Eagle's road supervisor will monitor activity on the Whale Tail Pit Haul Road through radio contact with drivers on the road, and through periodic patrols of the road…This system will be used to report any unusual conditions along the road such as the location of other Agnico Eagle and contractor vehicles, presence of wildlife on the roadway, presence of snowmobiles, any unsafe practices noticed, any special road conditions, any special weather conditions, etc." (Appendix 8-C.1, Section 9, p. 32)

Accordingly:

> "Agnico Eagle will educate all its employees and all its contractor's employees on road safety rules during the safety induction [*sic*] training that occurs before they first drive the road. The safety rules developed for the road will apply to Agnico Eagle employees and Agnico Eagle contractor employees. The Whale Tail Pit Haul Road will be closed for public use." (Appendix 8-C.1, Section 7, p. 25)

Although the Proponent indicates the Haul Road is not entirely accessible from Baker Lake, the presence of two traditional land use crossings assumes there may be potential use of the road by the public. As the Whale Tail Pit Haul Road is closed for public use, save for these two traditional land use crossing locations identified in consultation with the Hunters and Trappers Organization (Appendix 8-C.1, Section 7.7.1, p. 25), it is unclear whether the Proponent will communicate with land users on the use of the road, and if so exactly which activities would be used to engage land users and the public on expected rules of the road, appropriate road use and crossing, and prohibited road use related specifically to the Whale Tail Pit Haul Road.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The GN is responsible for ensuring public safety under the *Public Highways Act*, RSNWT (Nu) 1988, c P-13, and is responsible for the overall health and wellbeing of Nunavummiut. Additional information is required in order to determine if the Road Management Plan remains adequate and that public safety mitigation measures are effective.

INFORMATION REQUEST

The GN requests the Proponent provide the following information:

1. Whether the Rules of the Road (or some variation), inclusive of the two traditional land use crossings, in Appendix 8-C.1 are shared with community residents;
2. The methods the Proponent currently undertakes and will undertake to communicate with the public or local land users on the use (and prohibited use) of the road; and
3. How often these rules are shared.

GN IR #28 – ARCHAEOLOGY	
Department	Culture and Heritage
Organization	Government of Nunavut
Directed to	Proponent (Agnico Eagle Mines Limited)
Subject/Topic	Archaeology Management & Discovery Protocol
References	• Final Environmental Impact Statement (FEIS) Addendum, Whale Tail Pit – Expansion Project , Appendix 8-E.8: Archaeology Management Plan, Section 7.0 Discovery Protocol

IDENTIFICATION OF ISSUE

The Proponent states that:

> "Sites could be identified or exposed during ongoing planning and design and during construction phase of activity. Any chance discoveries of archaeological features or artifacts, historic objects, or palaeontological resources (fossils) must be reported." (Appendix 8-E.8, Section 7.0, p. 9)

The Proponent refers to these identifications as "chance discoveries" that can occur during pre-construction, construction and/or post construction activities of the construction phase.

IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The Department of Culture and Heritage understands that the Proponent has not completed a comprehensive investigation of the entire Project footprint. However, following the planning and design stages, areas where activities will occur should be identified. The Proponent must assess these areas prior to commencement of any ground disturbance.

INFORMATION REQUEST

The GN requests the following additional information:

1. How the Proponent will ensure a site assessment is performed prior to any ground disturbance; and
2. Clarification of whether the Project Archaeologist will conduct an archaeological survey in all areas for which the Proponent has planned ground disturbance activities.