



# **APPENDIX 8-C**

## **Addendums for Construction and Transportation Infrastructure Management Plans**



## **8-C.1: Whale Tail Pit Haul Road Management Plan**



**AGNICO EAGLE**

**MEADOWBANK DIVISION**

# Whale Tail Pit Haul Road Management Plan

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**JUNE 2016**

**VERSION WT**

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**DOCUMENT CONTROL**

Version	Date	Section	Page	Revision
WT	June 15, 2016	All	All	Whale Tail Pit Haul Road Management Plan

**Plan prepared by:**

Environment Department

Agnico-Eagle Mines Limited

**Plan approved by:**

Ryan Vanengen MSc.

Environmental Superintendent – Permitting and Regulatory Affairs

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## EXECUTIVE SUMMARY

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Agnico Eagle Mines Limited – Meadowbank Division (Agnico Eagle) is proposing to develop Whale Tail Pit (Project), a satellite deposit located on the Amaruq property, to extend mine operations and milling at Meadowbank Mine. The proposed Whale Tail Pit will be mined by truck-and-shovel operation and will require the hauling of material from the pit operations to the Meadowbank Mill. For the purposes of this document the Road Management Plan (RMP) applies to the Whale Tail Pit Haul Road and covers four phases to the development: 1 year of expansion of the access road to a haul road (construction), 3 to 4 years of mine operation, 8 years of closure, and the post-closure period.

The RMP was prepared as a companion document to the Whale Tail Pit Nunavut Impact Review Board (NIRB) Final Environmental Impact Statement (FEIS) and the Type A water licence amendment application to the Nunavut Water Board by Agnico Eagle. Other plans prepared for the Whale Tail Pit Haul road include an Emergency Response and Spill Contingency Plan and the Interim Closure and Reclamation Plan.

Land and environmental management in the area of the road are generally governed by the provisions of the Nunavut Land Claims Agreement. A list of current licences for the approved 6.5m wide surface and 64.1 km long Amaruq Exploration Access Road permits, licenses, agreements, authorizations, and approvals for the road are presented. If the Whale Tail Pit and Haul road are approved, Agnico Eagle plans to expand the road to be 9.5m in width, with a bypass bay every 400m to accommodate a single oversized vehicle along the approved 64.1 km alignment; many of the existing permits, leases and approvals will be applied to the haul road.

The Whale Tail Pit Haul road will not be publicly accessible rather only used by Agnico Eagle Meadowbank Division and employees of its contractors; furthermore, it will continue to be used by the exploration division. Agnico Eagle will educate all its employees and those of its contractors on road safety before they first drive the road. Daily traffic on the road will transport ore to the Meadowbank Mill, equipment, supplies, fuel and personnel.

The RMP presents mitigation measures and protocols to be implemented during the expansion (construction of the haul road) and operations to protect wildlife, prevent permafrost degradation, control surface runoff and sedimentation. Agnico Eagle will put in place operational procedures for daily operation and maintenance of the road including, if deemed necessary, dust suppression, snow removal and de-icing. Unmanned gates will be installed at both ends of the road. There will be occasions when access to the Haul road needs to be curtailed for short time periods for special reasons, such as bad weather, unsafe road conditions, maintenance activity on the road, heavy project related truck traffic, movement of oversized loads, and/or presence of large numbers of caribou or other wildlife incidences on or adjacent to the road. The road could also be temporarily

closed in the event of an incident, accident or other event requiring mitigation or response. Typically, these short-term closures will be required to ensure safety.

Protocols for accidents and anticipated use of police services are presented. Agnico Eagle has an established, Emergency Response Team based at the Meadowbank Project with trained first responders based at the Whale Tail Pit site whose combined responsibilities in part will include responding to emergencies on the road in a timely manner. Agnico Eagle will also report all reportable scale incidents to the appropriate Government authority.

The Whale Tail Pit road will be decommissioned and reclaimed by Agnico Eagle when operations at Whale Tail Pit cease and when exploration on the Amaruq property fails to find sufficient ore resources to support mining, or Agnico Eagle fails to obtain the necessary authorizations to proceed. Closure and reclamation of the road would be initiated within a year following the completion of closure and reclamation of the Whale Tail Pit operations infrastructure, Amaruq camp and exploration sites.



## ACRONYMS

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INAC	Indigenous and Northern Affairs Canada
Agnico Eagle	Agnico-Eagle Mines Limited
Amaruq road	Amaruq Exploration Access Road
ARD/ML	Acid Rock Drainage/Metal Leaching
ATV	All-Terrain Vehicle
CLARC	Community Lands and Resources Committee
DFO	Department of Fisheries and Oceans Canada
GN	Government of Nunavut
HTO	Hunters and Trappers' Organization
INAC	Indian and Northern Affairs Canada
IOL	Inuit Owned Lands
KIA	Kivalliq Inuit Association
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NTI	Nunavut Tunngavik Incorporated
NPC	Nunavut Planning Commission
NU	Nunavut
NWB	Nunavut Water Board
RCMP	Royal Canadian Mounted Police
RMP	Road Management Plan
TEMP	Terrestrial Ecosystem Management Plan
VEC	Valued Ecosystem Components
VESC	Valued Economic and Social Components
Whale Tail Pit	Whale Tail Pit Project which includes a pit, camp and ancillary activities.
Whale Tail Pit Haul Road	The haul road that connects the Whale Tail Pit to the Meadowbank Mill

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## SECTION 1 • INTRODUCTION

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### 1.1 Project Description

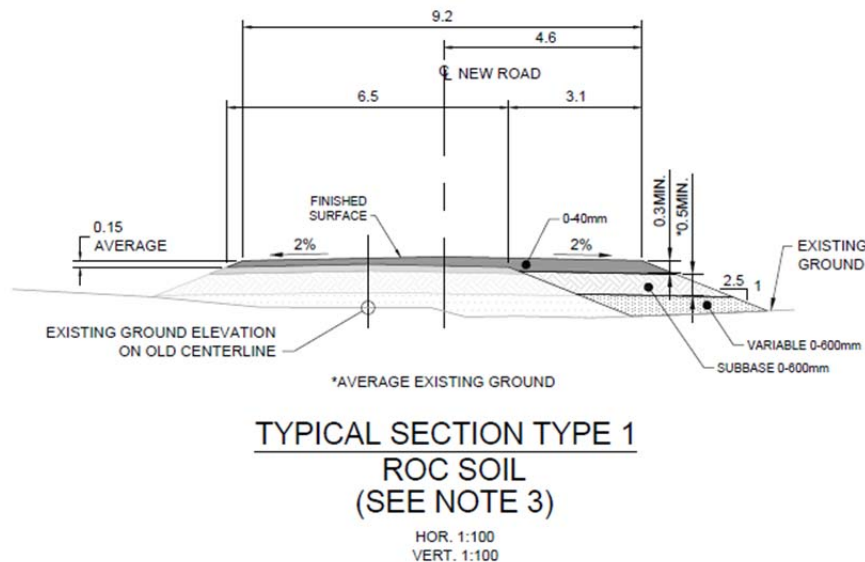
Agnico Eagle Mines Limited – Meadowbank Division (Agnico Eagle) is proposing to develop Whale Tail Pit (Project), a satellite deposit on the Amaruq property, to continue mine operations and milling at Meadowbank Mine. Agnico Eagle is seeking approval to expand Meadowbank Mine to include development of resources from Whale Tail Pit and requests the Nunavut Impact Review Board (NIRB) reconsider the terms and conditions set out in Project Certificate (No. 004) issued for Meadowbank Mine. Concurrent with the reconsideration of the Project Certificate by the NIRB, Agnico Eagle is seeking an amendment to Meadowbank Mine Type A Water Licence (No. 2AM-MEA1525) to include mining of Whale Tail Pit and construction and operations of associated infrastructure from the Nunavut Water Board (NWB).

The Amaruq property is a 408 square kilometre (km<sup>2</sup>) site located on Inuit Owned Land approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Mine in the Kivalliq Region of Nunavut. The deposit will be mined as an open pit (i.e., Whale Tail Pit), and ore will be hauled to the approved infrastructure at Meadowbank Mine for milling.

The proposed open pit mine, mined by truck-and-shovel operation, will produce 8.3 million tonnes (Mt) of ore, 46.1 Mt of waste rock, and 5.6 Mt of overburden waste. For the purposes of this document the Road Management Plan (RMP) applies to the Whale Tail Pit Haul Road and covers four phases to the development: 1 year of expansion of the access road to a haul road (construction), 3 to 4 years of mine operation, 8 years of closure, and the post-closure period. Land and environmental management in the area of the road are generally governed by the provisions of the Nunavut Land Claims Agreement. A list of current licences for the approved 6.5m wide surface and 64.1 km long Amaruq Exploration Access Road permits, licenses, agreements, authorizations, and approvals for the road are presented. If the Whale Tail Pit and Haul road are approved, Agnico Eagle plans to expand the road to be 9.5m in width, with a bypass bay approximately every 400m depending on the topography and safety considerations to accommodate a single oversized vehicle along the approved 64.1 km alignment; many of the existing permits, leases and approvals will be applied to the haul road. All approved Bridges will continue to be used to accommodate the hauling of ore from the Whale Tail Pit to the Meadowbank Mill (refer to Figure 1.2).

Information related to the construction and operation of the Whale Tail Pit is presented in the Project Description (Volume 1 of the FEIS) and amendment application documents in support of the Type A water licence. This document also addresses commitments made by Agnico Eagle during the NIRB screening of the Amaruq Exploration access road; all commitments to stakeholders are carried forward into this plan.

The 6.5m road routing is approved as a 64.1 kilometres long exploration access road. The road surface will be expanded to 9.5 metres wide, will continue to utilize the 11 bridges that are approved, and are proposing to extend the 28 corrugated round culverts to pass watercourse crossings and many other localized drainage culverts which will also need to be extended to prevent erosion, reduce thaw susceptibility and washout of the road during freshet. The bridges and round culverts will allow normal river and stream flow, and fish migration at road water crossings. The expansion to the Haul Road will require the use of approved quarries and approved seven borrow areas (referred to as Esker #1 to #7) and associated short spur roads, will use the Vault Pit as a Quarry and be a private road constructed on Crown Land and Inuit Owned Land by Agnico Eagle. Figure 1.1 is a cross sectional view of the expanded road.



**Figure 1.1. Plan view of the Whale Tail Pit Haul road. (metres)**

Safety will be emphasized in the use of the road, all road users, Agnico Eagle employees and contractors will undergo a road use orientation before being allowed to use it.

The routing of the Whale Tail Pit road is shown on figure 1.2 (**For construction drawing 6103-117-230-200**); it was selected to minimize possible effects of construction and operations on the environment. Considerations included the overall length of the road, a desire to minimize the number of water crossings, the availability of borrow material along the route, acid rock drainage/metal leaching (ARD/ML) potential of borrow and waste rock materials, and avoidance of archaeological resources. Unmanned gates will be installed at both ends of the road. These will be closed during periods of bad weather, in the event of a serious road accident or major spill, if circumstances require, and during major road maintenance.

After selecting the proposed route for the road, preliminary baseline studies were carried out in 2014 and 2015 including a traditional knowledge study, archaeological, aquatic and wildlife surveys, water crossing assessments and gravel borrow pits appraisals including geochemistry assessments.

The road will be constructed, inspected, and maintained by Agnico Eagle. Consequently, Agnico Eagle has sole responsibility for the construction, operation, and decommissioning of this road, including the road bed, bridges, culverts and borrow pits used in the construction of the road.



LEGEND

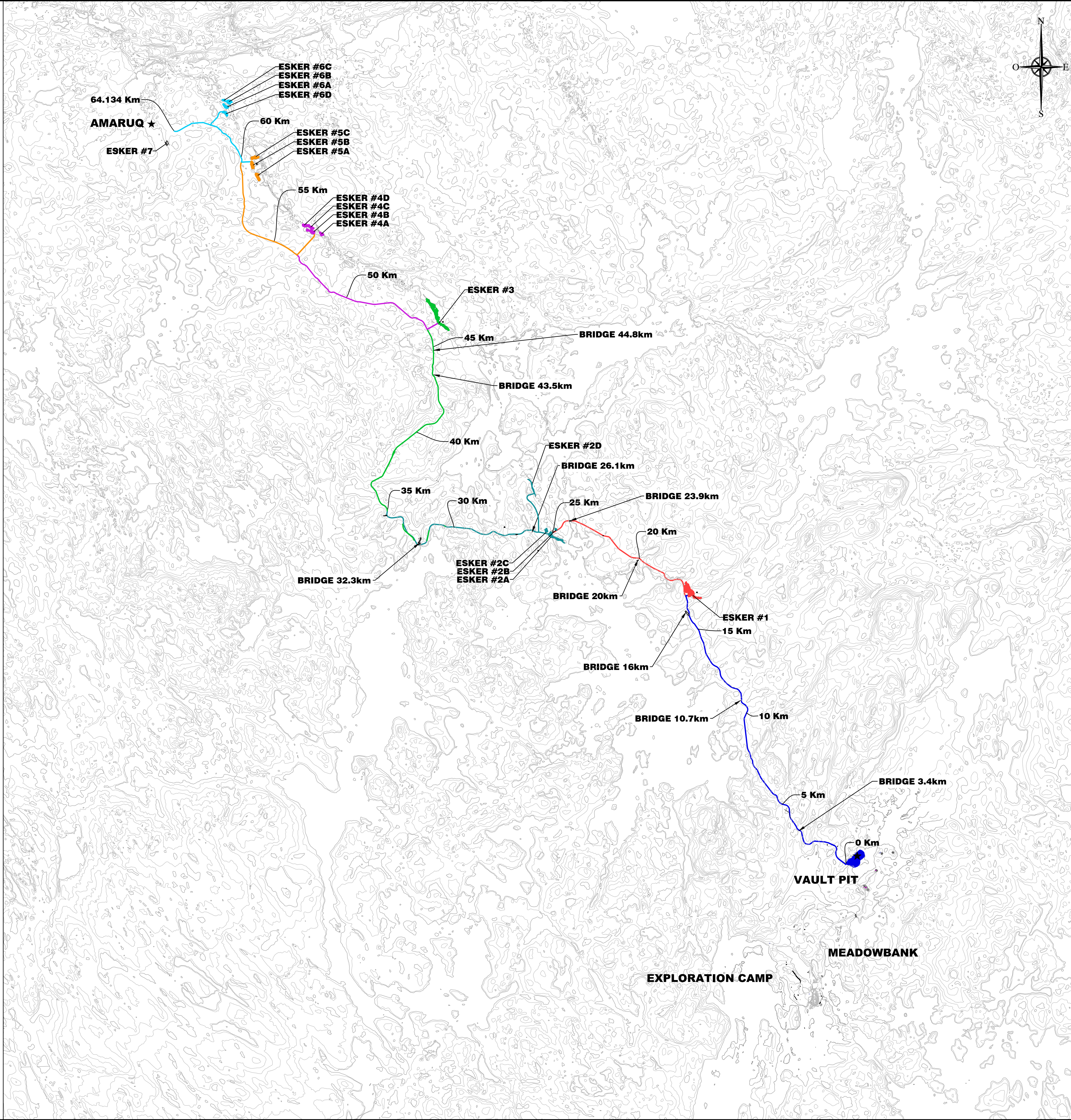
**BRIDGES:** 3.4km, 6M -DRAWING #212  
10.7km, 6M -DRAWING #217  
16.0Km, 40M -DRAWING #221  
20.0km, 6M -DRAWING #224  
23.9Km, 60M -DRAWING #227  
26.1km, 6M -DRAWING #228  
32.3Km, 40M -DRAWING #233  
43.5km, 6M -DRAWING #241  
44.8Km, 40M -DRAWING #241

**SECTION 1** = 16.8 km VAULT TO ESKER #1 (CH:16+800)  
**SECTION 2** = 8.2 km ESKER #1 TO ESKER #2 (CH:25+000)  
**SECTION 3** = 10 km ESKER #2 TO (CH:35+000)  
**SECTION 4** = 11 km 35+000 TO ESKER #3 (CH:46+000)  
**SECTION 5** = 7.7 km ESKER #3 TO ESKER #4 (CH:53+700)  
**SECTION 6** = 6.1 km ESKER #4 TO ESKER #5 (CH:59+800)  
**SECTION 7** = 4.334 km ESKER #5 TO AMARUQ (CH:64+134)

ESKERS Quantities		
Esker	Surface exploited (m <sup>2</sup> )	2 strips x 1 m (m <sup>3</sup> )
1	180 725	361 450
2A	84 985	169 970
2B	5 144	10 288
2C	24 745	49 490
2D	43 089	86 178
3	178 542	357 084
4A	17 434	34 868
4B	35 860	71 720
4C	32 933	65 866
4D	16 998	33 996
5A	41 140	82 280
5B	35 458	70 916
5C	34 591	69 182
6A	25 827	51 654
6B	32 637	65 274
6C	10 263	20 526
6D	22 922	45 844

Sections	Granular materials for road construction (m <sup>3</sup> )					
	From	0-40 mm	0-300 mm**	0-600 mm**	From	MG-112**
1	Vault	18 735	154 091	174 957		
2	Vault	9 078		N/A	Esker 1	183 722
3	Vault	3 928		N/A	Esker 2	489 115
4	Vault	21 726		N/A	Esker 3	108 650
5	Vault	8 656		N/A	Esker 4	70 368
6	Vault	6 920		N/A	Esker 5	34 467
7	Vault	5 257		N/A	Esker 6	34 492
Total m <sup>3</sup>		74 301	154 091	174 957		920 814

\*\* Increase of 0-300, 0-600 and MG-112 of 20%



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TITRE / TITLE	# DWG



AGNICO EAGLE


REV.	DATE	DESCRIPTION	PAR/ÉVAL.	APP.	CLIENT
1	2015/11/23	ISSUED FOR CONSTRUCTION	S.D.	S.D.	
0	2015/10/08	ISSUED FOR CONSTRUCTION	S.D.	S.D.	

REVISIONS

AMARUQ EXPLORATION  
ACCESS ROAD

TITRE / TITLE  
AGNICO EAGLE -- MEADOWBANK DIVISION  
117--ROAD, YARDS, FENCES AND OTHER  
230 EARTH WORK  
PLAN  
ROAD VAULT TO AMARUQ

DESSINÉ PAR  
DRAWN BY SYLVIE DUFOUR DATE 2015/11/23

VÉRIFIÉ PAR  
CHECKED BY ÉRIC TRUDEL, P.Eng. 2015/11/23

APPROUVÉ PAR  
APPROVED BY STEPHAN DUPUIS, P.Eng. 2015/11/23

ÉCHELLE  
SCALE 1 : 100 000 DATE 2014/07/07

NO. DESSIN  
DRAWING NO. 6103-117-230-200

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
6103	1	1 / 1



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**SECTION 2 • DESCRIPTION OF SUPPORTING INFORMATION**

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The Whale Tail Pit haul road is subject to land use planning and environmental screening/assessment established under Articles 11 and 12 of the Nunavut Land Claims Agreement, respectively. Based on a positive decision for the Amaruq Exploration Access road by NPC on July 17, 2015, and pending a subsequent conformity review of the Whale Tail Pit Project, the haul road is likely to conform to the Keewatin Regional Land Use Plan and if proposed mitigation measures are found acceptable in the environmental screening, applicable authorizations required for the construction, operation and closure of the road will be sought.

In preparation for the land use planning and environmental review, and subsequent authorizations for the construction, operation and closure of the road, Agnico Eagle has undertaken various baseline studies for the Whale Tail Pit Project. Baseline studies are presented as supporting documents in the Whale Tail Pit FEIS submission (refer to FEIS Volumes 1 to 7). The RMP was prepared as a companion document to the Whale Tail Pit Nunavut Impact Review Board (NIRB) Final Environmental Impact Statement (FEIS) and the Type A water licence amendment application to the Nunavut Water Board by Agnico Eagle. Other plans prepared for the Whale Tail Haul road include, but are not limited to: an Emergency Response, Spill Contingency Plan, Terrestrial Ecosystem Management Plan and the Interim Closure and Reclamation Plan.

Mitigation and monitoring programs will be reviewed through the regulatory process and these will form an integral part of operating the Whale Tail Pit Haul Road, and will assist in identifying changes in the environment that result from related impact assessment. Furthermore engineering for the road expansion has been completed, but detailed construction engineering is ongoing and final construction drawings will be submitted to the NWB prior to construction.

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## SECTION 3 • REGULATORY SETTING

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### 3.1 Land Tenure

The haul road will largely be located on Crown Land administered by Aboriginal Affairs and Northern Development Canada (AANDC) with approximately 38 percent of the road located on Inuit Owned Lands (IOL) administered by the Kivalliq Inuit Association (KIA). Approximately 14 kilometres of the road from its southeast end is located on Inuit Owned Land as is approximately 10 kilometres at its northwest end. In-between is Crown Land. The surface ownership of IOL encompassing the road right-of-way was transferred to the KIA when the Nunavut Land Claims Agreement (NLCA) came into effect. Land and environmental management in this area are generally governed by the provisions of the NLCA.

The Whale Tail Haul road will be expanded under land use permits issued by AANDC for crown land, and the KIA for IOL. Leases will follow the completion of construction and a legal survey of the road right-of-way. The width of the land leases is 30 to 40 m for the length of the road, wide enough to accommodate the expansion of the road to 9.5 metre road width plus associated bypasses.

### 3.2 Permitting Regime

Federal and territorial laws and regulations that apply to the construction, operation, and final closure of the road will apply. Table 3-1 outlines the current licences and permits held by Agnico Eagle in relation to Amaruq Exploration Access Road. Until approval of the expansion of the access road to a haul road is received, the Amaruq Exploration Access Road Management Plan version 2 (Agnico Eagle, 2016) remains in effect. A list of anticipated permits, licenses, agreements, authorizations, and approvals for the Whale Tail Pit Haul Road is presented in Table 3-2.

**Table 3 -1. Current Licenses and Permits held by Agnico Eagle for Amaruk Exploration Access Road**

Authorizations Number	Details	Work authorised	Issued By	Expiry	Status
Amaruk Access Road/ Quarries/ N2015F0026/ 8BC AEA	Conformity determination	Amaruk exploration road and borrow pits	NPC	-	Active
11EN010	Screening decision	Exploration works and Amaruk exploration road	NIRB	-	Active
KVCA15Q02	Amaruk exploration road quarry permit	Borrow pits on Inuit Owned Land	KIA	2017-11-22	Active
KVRW15F01	Amaruk exploration road right of way	Road on Inuit Owned Land	KIA	2018-11-30	Active
N2015F0026	Amaruk exploration road land use permit	Road on Crown Land	INAC	2018-05-09	Active
066H8-01-1	Lease for Amaruk exploration road borrow pits	Borrow pits on crown land	INAC	2026-12-31	Active
066H8-02-1	Lease for Amaruk exploration road	Amaruk exploration road, on crown land	INAC	2026-12-30	Active
8BE-AEA1325	Water licence for Amaruk exploration road	Amaruk exploration road	NWB	2025-12-31	Active
11-HCAA-CA6-00006	Letter of advice for fish habitat on the Amaruk exploration road	Watercourse crossings construction	DFO	-	Active



**Table 3 -2 Approvals and Authorizations required for the Whale Tail Pit Haul Road**

<b>Authorization</b>	<b>Authority</b>	<b>File #</b>	<b>Basis</b>
Conformity determination with Keewatin Regional Land Use Plan	Nunavut Planning Commission	NPC 148297	Allows Project to proceed to screening/ assessment
Article 12, Environmental Screening/ Reconsideration	Nunavut Impact Review Board		Allows Project to proceed to authorizations to build and operate the haul road
Type A Water License amendment	Nunavut Water Board		Allows for use of water and disposal of waste in constructing, operating and closing the haul road
Inuit Impact and Benefits Agreement	Kivalliq Inuit Association		Impacts are compensated and benefits provided to Inuit
Fisheries Authorization	Department of Fisheries and Oceans	Letter of Advice issued to AEM by DFO on March 14, 2016	A Project Authorization will not be required for the Haul Road as there is no serious harm to fish or fish habitat. Agnico Eagle intends to follow the letter of Advice issued on March 14 <sup>th</sup> , 2016.
Class 2 Permit for Heritage Sites (obtained by qualified professional archaeologist)	Department of Culture and Heritage, Government of Nunavut	In progress at the time of submission; work to be completed in July-August 2016	Unavoidable impacts of the haul road on heritage sites have been mitigated

**SECTION 4 • RELATED DOCUMENTS**

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Environmental management documents for the Whale Tail Pit Project are found in Volume 8 of the FEIS. The specific plans that provided input to the Road Management Plan (RMP) and are cited throughout this plan include the following:

- Emergency Response (Volume 8, Appendix 8-D.3);
- Spill Contingency Plan (Volume 8, Appendix 8- D.6);
- Terrestrial Ecosystem Management Plan (Volume 8, Appendix 8-E.7); and
- The Interim Whale Tail Pit Closure and Reclamation Plan (Volume 8, Appendix 8-F.1).

The Road Management Plan will be in effect for the expansion of the exploration access road to a haul road (construction), operation, and closure phases of the road. It will also be in effect during any periods of temporary closure of the Whale Tail Pit Haul Road.

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## SECTION 5 • CONSULTATION

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Public consultation and engagement is a legal requirement in Nunavut, an industry best practice, and an important corporate commitment. Effective public consultation and engagement helps ensure that community members are informed and knowledgeable about proposed projects, that community support for those projects is more readily obtained, and sustainable development goals are achieved. A key goal of Agnico Eagle's public consultation and engagement program has been to ensure the Company obtains a "social licence to operate", by securing the support of a majority of residents from potentially impacted local communities.

To obtain this goal, a number of process goals have been followed:

- identification and prioritization of communities and community stakeholder groups;
- developing an understanding of key community and stakeholder views regarding the Project;
- addressing community and stakeholder issues and expectations;
- identifying current and historical patterns of land- and resource-use;
- identifying VECs and VSECs;
- determining criteria for evaluating the significance of potential impacts;
- deciding upon mitigating measures;
- formulating compensation packages where necessary;
- identifying and implementing monitoring measures, including post-project audits; and
- continuous improvement.

Since operation of the Meadowbank Mine began, Agnico Eagle has continued public consultation by meeting with employees, especially local employees that live throughout the Kivalliq, meeting in the communities with local stakeholders and regulatory agencies which has allowed a better general understanding of the rights, interests, values, aspirations, and concerns of the potentially affected stakeholders, with particular reference to the local population. Through this continued consultation Agnico Eagle has developed an operational culture that recognizes and respects these relevant interests in the planning and executing processes. A record of consultation that included the Amaruq Exploration Access road and the Whale Tail Pit Haul Road (as part of the Whale Tail Pit Project) is provided in Volume 2 of the FEIS, Table 2-H. Agnico Eagle has and will continue to engage with regulatory agencies, the KIA and other stakeholders.

### 5.1 Road Use by Nunavummiut and Other Developers

The Whale Tail Pit Haul road will be 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. Agnico Eagle is unaware of any possible future developments in the vicinity of the Meadowbank Mine and Whale Tail Satellite Pit that could use the road.

However, it is Agnico Eagle's responsibility to decommission and reclaim the road once its activities in the area are complete. For a third party to take over the road(s), that third party would have to complete its own arrangements with the land owners (KIA and Crown) and then complete its own environmental screening/assessment and permitting process covering future use. Agnico Eagle does not own the land on which the access road is constructed on and, thus, cannot transfer future ownership or use privileges to any third party. Agnico Eagle must complete its obligation to decommission and reclaim the road unless directed otherwise by a combination of the landowners and other regulatory agencies who issued permits/authorizations for it.

## SECTION 6 • MEASURES TO PREVENT PERMAFROST DEGRADATION

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The Whale Tail Pit Haul road has been designed with a minimum fill thickness to maintain permafrost conditions within the subgrade soils. To the greatest extent possible, the road will be constructed in the winter when the subgrade soils are frozen in order to prevent thawing of subgrade soils. The rough base will be advanced at the full road width. Depending on when the permits are received, Agnico Eagle intends to construct the extension of the base of the road under frozen ground conditions. Since the approved bridges for the Amaruq Exploration Access Road will continue to be used, the majority of the remaining watercourse crossing culvert extensions will be installed in the winter; installation of extensions to embedded culverts may be required to be installed in the fall to ensure proper embedding<sup>1</sup>. Once the rough base will be completed under winter conditions placing of the final topping materials during the spring and early summer will take place.

Mitigation and environmental design features to reduce the potential for permafrost degradation are as follows:

- The road alignment avoids, where possible, fine-grained, poorly drained, ice-rich, frost susceptible soil conditions due to susceptibility to thaw related settlement;
- Regions of high ground relief (higher elevations) were sought to provide better drainage conditions, to minimize the potential for snow drifting on the road and to avoid organic depressions and/or other poor ground conditions, which are more abundant in the low lying areas;
- Road fill material will be placed directly over the existing soil layer without cutting, stripping, or grubbing to avoid disturbing the subgrade soils;
- Only thick drifted snow will be removed before the road fills are placed;
- Road fill used will be dependent on the underlying ground conditions; these are:
  - soils very susceptible to freeze and thaw induced settlement where thawing of the near-surface sub-grade is expected to result in significant strength loss and excessive settlements. The road fill thickness in this situation will be a minimum of 1. metres plus sub-base<sup>2</sup>, and will employ the use of geogrid, woven geotextile and expanded polystyrene to protect the soil (see figure 6-1 for details);
  - soils relatively susceptible to freeze and thaw induced settlement where thawing of the near-surface sub-grade is expected to result in significant strength loss and

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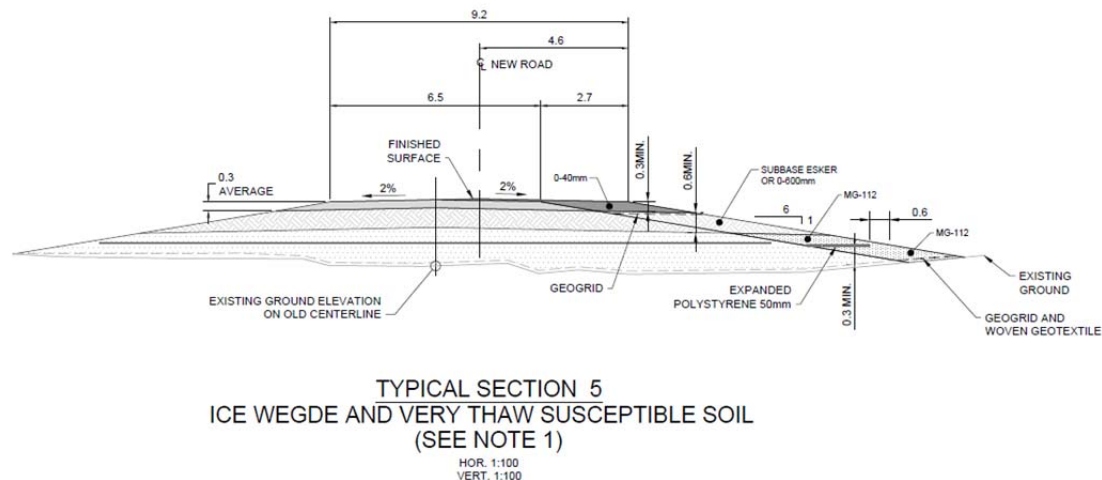
<sup>1</sup> This will be done according to DFO timing windows and in accordance with the DFO letter of advice for the Amaruq exploration access road.

<sup>2</sup> The thickness of the sub-base will be variable and will in part be dependent on the topography of the ground surface where the road is to be constructed.

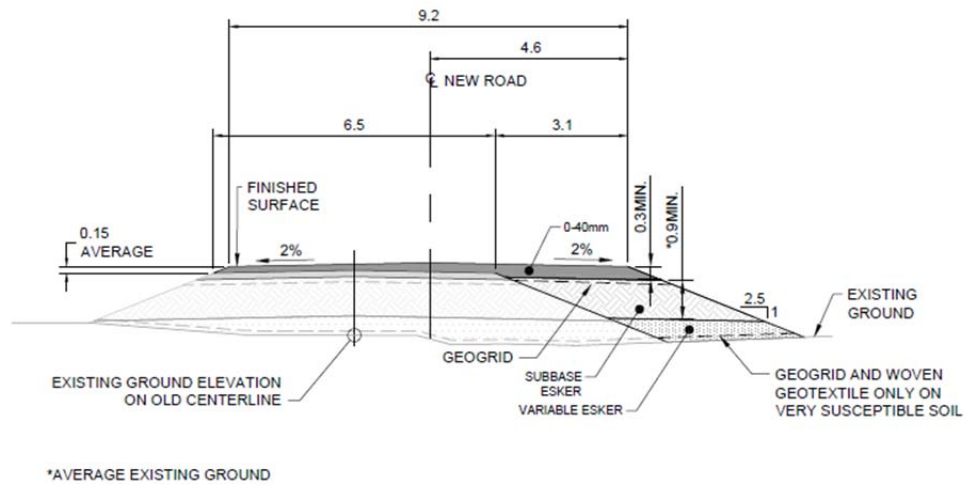
excessive settlements. Where appropriate, the road fill thickness in this situation will be a minimum of 1.5 metres plus sub-base and may also employ the use of geogrids and woven geotextiles over the soil (see figure 6-2 for details); and

- soils relatively unsusceptible to freeze and thaw settlement where thawing of the near-surface sub-grade is expected to result in minimal strength loss and tolerable settlements. In this situation the thickness of the roadbed will be a minimum of 0.9 metres plus subbase (see figure 6-3 for details).
- To prevent thawing of subgrade soils, to the greatest extent possible the road will be constructed in the winter when the subgrade soils are frozen.

The haul road, the road and its shoulders will be inspected weekly (at a minimum) during the summer period for evidence of seasonal freeze and thaw adjacent to the toe of the road embankment. Such movements are expected and may lead to longitudinal cracking and thaw settlement especially for portions of the road founded on thaw susceptible (ice rich) soils. When such areas are discovered, the affected area will be repaired using granular material obtained from a borrow pit. Agnico Eagle will maintain stockpiles of such material in select borrow pits that will remain open following completion of the road.



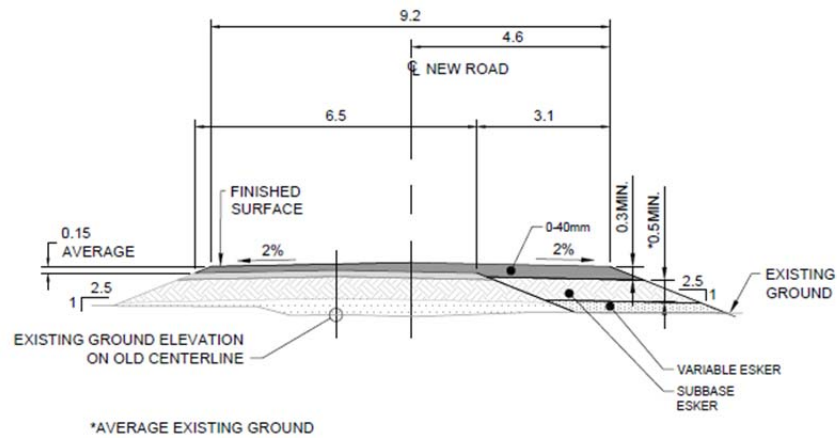
**Figure 6.1 Typical cross-section of Haul road on ice wedge and very thaw susceptible soil**



**TYPICAL SECTION TYPE 2**  
**TUNDRA SOIL**  
**(SEE NOTE 2)**

HOR. 1:100  
 VERT. 1:100

Figure 6.2 Typical Cross-section of Haul road built over thaw susceptible soil



**TYPICAL SECTION TYPE 3**  
**ROC SOIL**  
**(SEE NOTE 3)**

HOR. 1:100  
 VERT. 1:100

Figure 6.3 Typical section of Haul road built over soil relatively unsuceptible to freeze and thaw settlement

## SECTION 7 • BORROW PIT MANAGEMENT

### 7.1 Open Pit and Borrow Pit Extraction Methods (including blasting if needed)

Table 7.1 presents the location and area of the approved borrow areas that will continue to be used to extract material for the expansion of the 6.5m Amaruq exploration access road to the 9.5m Whale Tail Pit Haul Road. The area footprints are presented in Table 7.1 and locations of the proposed esker borrow pits and final for construction alignment of the Amaruq Exploration Access Road were provided to the Nunavut Water Board as part of the application. Presently, the surface area of the borrow sources (Esker #1 to 7) along the road will not increase, rather Agnico Eagle intends to excavate to depth for material required to expand the road to a haul road.

The excavation and material removal in the eskers will be the same as outlined for the Amaruq Exploration Access Road. Ripping frozen borrow area material will be attempted using a dozer. This loosens the material and allows it to be picked up using a loader or a hydraulic shovel. Should this fail, standard drill and blast procedures can be used. The sequence of steps under this circumstance follows that for waste rock from the Vault open pit.

Table 7 -1 Haul Road Borrow Pits and Waste Rock Sources for Road Construction

ID Number	Surface Area (ha)	Land Ownership <sup>2</sup>	Number of samples for ARD/ML testing	Location UTM Zone 14 W Easting (m)                      Northing (m)	
Vault Open Pit – Waste Rock					
Vault Open Pit	Not Applicable	Meadowbank Gold Mine (IOL)	ARD testing following approved MBK plans are ongoing.	640141	7221038
Borrow Pits – Esker Material					
Esker 1	18.1	CL	8	633379	7232759
Esker 2	12.7	CL	14	626649	7235662
Esker 3	14.8	CL	11	621825	7247508
Esker 4	10.4	CL	10	614953	7250442
Esker 5	11.2	IOL	8	611936	7253888
Esker 6	6.9	IOL	4	610689	7256058
Esker 7	1.4	IOL	3	607799	7254627
Total	75.5		58		

<sup>1</sup> Volumes are provisional at this time and are subject to change.

<sup>2</sup> CL=Crown Land, IOL= Inuit Owned Land.



If deemed necessary, the design, size and shape of the blasts are planned with safety being the foremost consideration and best management practices for blast procedures will be followed. A predetermined pattern of drill holes are drilled to a predetermined depth and filled with explosives. Prior to a blast, all personnel and equipment are moved to a safe distance from the blast area. The blast fragments the rock and or frozen esker material which is then loaded into haul trucks using either a loader or by a hydraulic shovel. The truck drives to the end of the road where the rock/esker material is dumped. The final step is moving the rock/esker material into place using a dozer. This sequence is called a “drill, blast, load, haul, dump” sequence. Approved ammonia management procedures at the Meadowbank Mine will be adopted to ensure blasting practices monitor explosive quantities and blast performance to optimize the blasting practices while reducing impacts to nearby water quality from blast residue.

Some rock can be moved to a crusher to produce aggregate of various sizes<sup>3</sup>. The main source of crush material will be at the Vault Pit (from km 0 to km 16.9) and from Esker borrow source #1 to #7 (from km 16.9 north to Whale Tail Pit). Operations in the Vault open pit use explosives to break the rock. The crusher will be located as far from water as possible and where it is best shielded from the prevailing wind, preferably behind a high wall so as to reduce the quantity of wind-blown dust and have as much dust as possible fall within the bounds of the borrow pit.

With the onset of winter, ramps will be built to the top of some eskers to obtain access to the borrow pit. The following summer the aggregate material will be allowed to thaw and subsequently be stripped using a dozer or loader. It should be possible to strip two layers over the summer period, each to a depth of approximately one metre. The material will be piled in mounds to allow drainage. Subsequently the mounded material will be easily handled at all times of the year<sup>4</sup>. If access to the esker borrow pits is delayed, other procedures will be used to access road building materials at all times of the year.

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<sup>3</sup> Aggregate will only be produced if it is required in building or maintaining the road.

<sup>4</sup> This procedure will be used if time allows.

## 7.2 Borrow Pits Mitigation Measures

The ranking of mitigation options is as follows:

- **Avoidance** – using an alternate site to avoid the adverse effect all together. This is the most desirable;
- **Minimization** – taking actions to minimize and/or contain effects to the maximum extent possible during engineering design, construction, operation and closure;
- **Rectification** – taking actions to rehabilitate or restore the affected environment after the fact; and
- **Compensation** – this is used as a last resort to offset adverse environmental effects. This is the least desirable.

Best management practices will employ the following general mitigation measures for the borrow pits:

- Minimize the surface area of borrow pits;
- Locate borrow pits in well drained areas;
- Where possible, maintain the floor of the borrow pits slightly above the elevation of the surrounding area or blast with a sloped floor to drain water naturally to promote natural drainage patterns, to avoid creating ponds, and to prevent permafrost degradation in borrow pits;
- Prevent erosion and sedimentation through appropriate control measures such as silt fences;
- Carry out ARD/ML testing and water quality monitoring in support of mitigation measures;
- Protect archeological resources and mitigate as deemed appropriate by GN cultural and heritage department;
- Protect predatory mammal denning sites;
- If deemed necessary, maintain air quality through dust control/suppression;
- At the request of the NIRB and local stakeholders, as a safety measure, flag borrow areas and refuelling areas; and
- Use progressive reclamation in closing borrow pits that are no longer needed.

Where mitigation measures are not proving effective, adaptive management will be employed to address shortcomings.

## 7.3 Acid Rock Drainage and Metal Leaching

Geochemical testing was carried out to assess the chemical composition of the potential building material, its potential to generate acid rock drainage (ARD), and its potential to leach metals into the receiving environment upon exposure to ambient conditions. Sampling and testing prior to use of any borrow pit significantly reduced the risk of ARD/ML. Avoiding the use of undesirable or questionable road building materials ranks this mitigation measure as highly desirable.

Initial testing of borrow pit materials was completed in 2014 and found, *“The esker samples show no potential to generate acid drainage.”* Further, based on criteria devised by MEND 2009, *“...all samples are classified as non acid generating”*. For waste rock from the Vault open pit, the analysis determined that, *“...total sulphur content <0.2% is recommended as an appropriate criterion for selecting non potential acid generating Vault material for use in road construction.”*

Leach tests of the esker samples was carried out on samples collected from Eskers 1 to 6 inclusive<sup>5</sup>. Metal concentrations did not exceed the Metal Mining Effluent Regulations criteria. There were exceedances of Canadian Environmental Quality Guidelines (CEQG) for the protection of aquatic life for some samples. The parameters are namely As, Cu, and Pb.. It was found that:

*“Exceedances in leachates from laboratory tests do not necessarily imply non-compliance of contact water quality. The quality of drainage water will depend on a number of factors that are difficult to reproduce in static leach test such as the SFE test, including, but not necessarily limited to, material exposure, drainage patterns and site climate, which affect the ratio of leaching solution to solid material and water-rock contact time. Rather the results discussed underline the propensity of the till material to release metals in dissolved form when in contact with water.*

The marginality of exceedances for some parameters is discussed and that they are not expected to be a concern to receiving water quality. However, to confirm that the best available road building materials are being used in constructing the road, additional samples will be collected during the construction of the road. Additionally, water quality monitoring will be carried out in confirming that the road building materials are not negatively affecting nearby water quality.

#### 7.4 Management of Water Originating from Borrow Pits

While ARD/ML testing is a measure to avoid using questionable road building materials, water quality monitoring of seeps from borrow pits provides information on possible impacts on the environment should the water reach any nearby water bodies. A buffer of at least 31 m of undisturbed land is maintained between borrow pits and water bodies, and best management practices will prevent direct drainage. However, any significant seeps originating from the borrow pits that are likely to reach receiving waters will be sampled and analysed for a full suite of water quality parameters<sup>6</sup>. Any problematic water will be directed away from water bodies, or held if

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<sup>5</sup> Esker 7 was not sampled. This borrow pit is within the proposed commercial lease for the Amaruq camp site.

<sup>6</sup> Physical Parameters: pH (field and laboratory), temperature (field), alkalinity, bicarbonate, carbonate, electrical conductivity, hardness, hydroxide, ion balance, total dissolved solids, total suspended sediments

Nutrients: NH<sub>4</sub>, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>

Major Ions: Ca, Cl, Mg, K, Na, SO<sub>4</sub>

Trace Metals: Al, Sb, As, Ba, Be, B, Cd, Cr, Cu, Fe, Pb, Li, Mn, Hg, Mo, Ni, Se, Ag, Sr, Sn, Ti, U, V, Zn

possible. If necessary, silt curtains will be used to control suspended sediments in water seeping from the borrow pits.

Although erosion is not expected to originate from water flow from borrow pits, any evidence of erosion will be repaired by placing rip-rap over the affected area, and measures will be taken to reduce the velocity of the water with, for example, silt curtains and/or small dikes.

### 7.5 Management of Archaeological Resources at Borrow Pits

Heritage resource baseline studies related to the Meadowbank Mine have been ongoing since 1999 and baseline studies specifically related to the proposed Whale Tail haul road and pit have been carried out over four years by professional archaeologists in 2013 to 2016.

Identified archaeological sites were documented in the following manner:

- archaeological feature and artifact locations were documented using a GPS to record UTM coordinates;
- digital photographs of each site were taken; and
- archaeological site record forms, describing site characteristics (including a sketch map), were completed for each site and submitted to the Nunavut Department of Culture and Heritage and the Canadian Museum of History for inclusion in the archaeological sites database.

Final permit reports summarizing previous research, assessment methods, and results were completed and submitted to the Nunavut Department of Culture and Heritage and Agnico Eagle (Nunami-Stantec, 2016).

It is Agnico Eagle's intent to avoid archaeological resources in constructing the road wherever possible; this is the preferred mitigation measure. The goal is to protect archaeological sites identified at any borrow pit or on the road right-of-way. However, if any site identified cannot realistically be avoided, Agnico Eagle will follow the Archaeological Management Plan for the Whale Tail Pit and Haul Road (Volume 8 of the FEIS) and apply for a Culture and Heritage permit to mitigate the site(s).

If any potential archaeological site is identified during the operation of any borrow pit, work will stop, a professional archaeologist will be consulted, and Culture and Heritage will be informed of the discovery.

All road construction equipment will remain within the boundaries of the borrow pits to ensure any nearby archaeological site is not inadvertently damaged.

## 7.6 Ground Ice and Permafrost Protection

The selected borrow pits sites are on well-drained esker deposits. All eskers have positive topography rising above the local setting. These types of granular deposits were selected because they are largely free of ground ice, thereby minimizing possible thaw settlement, which can result in erosion, slumping of side slopes, and an altered landscape that extends beyond the borrow pit.

Should permafrost degradation become evident, the area will be monitored and, if necessary, stabilized by covering the affected land with 1.0 to 1.5 m of granular material. This reclamation effort would allow the permafrost to move up into the material covering the area and stop any further permafrost degradation or prevent further melting of any ground ice. Inspections of borrow pits will continue after their closure at the end of construction.

Any significant seeps originating from the borrow pits as a result of ground ice, permafrost melting, or from precipitation events will be monitored if the water is likely to reach receiving waters<sup>7</sup>.

## 7.7 Traffic Management on the Haul road - Management of Agnico Eagle Traffic

All ore transportation to the Meadowbank Mill, backhauling of material, and resupply of required fuel, supplies, equipment and workers for the Whale Tail Pit will be transported via the Whale Tail Pit haul road. All drivers transporting these materials and personnel will either be Agnico Eagle employees or employees of contractors directly hired by Agnico Eagle. In order to operate vehicles on the haul road, they must possess a valid driver's license from a Canadian province or territory for the appropriate class of vehicle. Agnico Eagle will educate all its employees and all its contractor's employees on road safety rules during the safety induction training that occurs before they first drive the road. The safety rules<sup>8</sup> 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.

All Agnico Eagle and contractor's vehicles that travel routinely on the road will be equipped with a radio set to the requisite road frequency. Consequently, traffic on the road will always have radio contact with security, and other Agnico Eagle and contractor traffic. This system will be used to report any unusual conditions along the road such as location of other vehicles, presence of wildlife on the roadway, presence of non-Agnico Eagle traffic such as snowmobiles or ATVs crossing the road, any special road conditions, any special weather conditions, etc.

For the purposes of traffic modelling, Agnico Eagle has assumed the following rules will have been implemented to manage moving vehicles:

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<sup>7</sup> Shallow, standing water will not be collected as it poses little risk to the receiving environment.

<sup>8</sup> See the Section 9 for complete details on safety measures proposed for the haul road.

- Between Whale Tail Pit and Meadowbank Mill: passing of oversize vehicles is permitted only in bypass bays;
- Maximum speed: 50 km/h on main road, 15 km/h at loading and dumping sites;
- Vehicles may engage only if there is no oversize coming in the counter direction;
- Safety distance of 30 meters between all moving vehicles;
- As deemed safe and depending on the circumstances, faster vehicles do not pass a slower preceding one going in the same direction (excepted for road maintenance vehicles at work or transporting large vehicles).

#### 7.7.1 Intersection of Haul Road with Traditional Land Use Crossings

Two traditional land use crossing locations were identified during IQ/TK workshops and following meetings with the HTO. Haul traffic from the Whale Tail Pit to Meadowbank Mill will have the right-of-way. 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.

#### 7.7.2 Other Access Control Procedures

There will be occasions when access to the Whale Tail Pit Haul road needs to be curtailed for short time periods for special reasons, such as bad weather, unsafe road conditions, maintenance activity on the road, heavy operational related truck traffic, movement of oversized loads, and/or presence of large numbers of caribou on or adjacent to the road. The road could also be temporarily closed in the event of an incident, accident or other event requiring mitigation or response. Typically, these short-term closures will be required to ensure safety. During these times, the gates at both ends of the road will be closed when appropriate.

#### 7.7.3 Projected Whale Tail Traffic on the Whale Tail Haul Road and Bypass Lanes

The amount of traffic on the road will be continuous and may increase during different periods of the year. This will be highly dependent on the level of activity at the Whale Tail Pit or Exploration camp site and the time of year, (e.g. more traffic can be expected following the arrival of supplies and materials by sea). Weather will also directly influence use of the road (e.g. virtually no traffic is to be expected when the weather is bad). Agnico Eagle and contractor vehicles expected to use the road will include, but not be limited to, long distance haul trucks, emulsion truck, pick-up trucks, cube vans, cargo trucks (to transport landfarm material, sewage sludge, and exploration supplies), buses, fuel trucks, tractor-trailers, snowplows and graders.

Summer traffic is expected to be moderately higher than winter traffic as more contractual work can be expected over the summer, especially during the construction period at Whale Tail Pit. Hauling ore, backhauling material to Meadowbank, fuel deliveries and passenger van/bus traffic are not expected to vary a great deal between winter and summer.

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**SECTION 8 • INSPECTION AND MAINTENANCE OF THE WHALE TAIL PIT HAUL ROAD**

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Inspection precedes maintenance. Agnico Eagle recognizes that a good inspection program will lead to the early identification of areas of the road where improvements are necessary. The early resolution of any deficiencies will result in less ongoing maintenance and repair of the driving surface and to water crossings.

Agnico Eagle has sole responsibility for the ongoing inspection and maintenance of all of the components of the road, including the roadbed, bridges, circular corrugated culverts, and the borrow pits used in the construction, expansion and maintenance of the road. Agnico Eagle will apply the experience that it has gained from the ongoing operation of the Meadowbank All-weather Road, which has now been in operation since 2010. This experience will be applied in the planning of the day-to-day operation, inspection and maintenance of the Whale Tail Pit Haul road. Agnico Eagle will have a road supervisor who will be responsible for the ongoing road inspection and maintenance of the road.

The road supervisor will conduct periodic inspections (minimally on a weekly basis) of the road to ensure that the road is maintained for safe travel of personnel, equipment, and supplies. These inspections will be recorded and any deficiency recorded and followed up by a corrective plan. These periodic inspections will include an inspection of the bridge abutments and a visual observation of the road surfaces to assess the status of the road's foundation.

During the summer period, the road surface will be maintained with gravel being spread as required and regular grading of the road. In the fall, winter and spring time the maintenance will be adjusted according to the weather conditions. Snow clearing along the road will be done to ensure that the road can be operated safely. The manner in which the snow is cleared will also take into account the road configuration to ensure that snow accumulation will not cause any particular problem during the freshet.

The entire road will be inspected for signs of accumulation of ponded water either on the road surface or along the sides of the road. Where noticed, the Agnico Eagle road supervisor will evaluate and monitor the accumulation to determine why water is accumulating in these areas. Based on these evaluations and to avoid erosion or washing out of the road, the road supervisor will take remedial action where and when necessary to correct the cause of such ponding, such as grading of the road surface to remove areas of ponding or installation of additional culverts if the road is causing excessive water ponding.

### **8.1 Watercourse Crossings Inspections and Maintenance**

The watercourse crossing inspection and maintenance program has three main components:



- A regular inspection program to identify issues relating to watercourse crossings, such as structural integrity and hydraulic function;
- An event inspection program to track the impacts of large storm events on watercourse crossings, such as structural integrity and hydraulic function; and
- A culvert location inspection program to ensure that pipe or corrugated culverts have been installed in the right location with respect to the watercourse and that their capacity is adequate to ensure that the culvert(s) pass the water under all hydraulic conditions. In most cases for circular, corrugated culverts, they will be installed in multiples at different elevations at each stream crossing to ensure that these culverts can adequately pass normal summer flows as well as spring freshet and heavy rainfall flows.

#### 8.1.1 Regular Crossing Inspection and Maintenance

Just prior to spring freshet, all culverts and stream crossings will be inspected to confirm that they are in good state to accommodate the rapid spring thaw that is seen in the north. During the freshet period, crossings inspections will be performed daily (mid-May thru June) and weekly during the remainder of the ice-free period prior to fall freeze-up (July through October) by the road supervisor and/or an environmental technician. An annual geotechnical inspection of the road will be conducted by a qualified engineer.

These inspection activities for each watercourse crossing will consist of:

- Visual inspection of its infrastructure to identify defects, cracks or any other risks to structural integrity. Particular attention will be paid to the inlet and outlet structures of culverts, and to bridge abutments and their foundations, as required;
- Visual inspection to identify sediment or other debris accumulation impeding the free flow of water through the crossings. Maintenance operations will consist of hand removal of accumulated debris and repairing damages as soon as possible;
- At the request of DFO, annually during the springtime, measure and inspect flows at the embedded culvert at km 11.1 to ensure small bodied fish passage continues to be possible; and
- Visual inspection of upstream and downstream channel to identify bed erosion or scour around the watercourse crossing structure. Particular attention will be paid to abutments and their foundations as they will be vulnerable to scour and erosion during flood events. Particular attention will also be paid to potential sources of sediment transport at the crossing.

Inspection results will be recorded by Agnico Eagle to help track changes in conditions over time. Maintenance operations will consist of undertaking remediation of any detected problems and repairing damage as soon as possible.

### 8.1.2 Event Crossing Inspection and Maintenance

Inspection frequency will increase just after heavy or prolonged rainfall storm events. Visual inspection of each watercourse crossing will be completed to identify potential risks to the crossing's structural integrity, debris accumulation and whether erosion and scour have occurred. Water accumulation along the road will also be monitored. Results will be recorded by Agnico Eagle to help track changes in condition over time. The remediation of any detected problem and any necessary damage repairs will be undertaken as soon as possible, under the direction of Agnico Eagle's road supervisor.

### 8.1.3 Culvert Location Inspection

Following their installation, the circular, corrugated culvert crossings will be visually inspected to confirm they have been properly executed and installed. Depending on when the permits to extend the approved culverts, these culverts may be installed during winter conditions and thus it is possible that a culvert will not be sited correctly to pass all water through the road, which results in excessive water ponding against the road. The intent is to check for such conditions during the first snow melt and after rain events so that if deemed necessary, adjustments can be made accordingly. Although a conservative estimate of culverts has been proposed, if deemed necessary following inspections additional culverts may be installed in locations that may not optimally route water flows.

## 8.2 Snow Removal and Snow Management

Sections of the road are expected to experience snow drifts because of strong winds over the winter period. As much as possible, this snow will be cleared to the downwind side of the road to limit the wind re-depositing the same snow on the cleared road. Routine spring snow management will include the removal of any snow that accumulates at bridges and culverts so that water at freshet can move freely through the circular culverts, and bridges. In the case of culverts, snow will be removed from both ends but not from the inside.

## 8.3 Dust Suppression

The amount of dust generated along a road is dependent on the material source used to surface the road, dryness of the road surface, the number of vehicles, weight and speed, and maintenance of the driving surface. Regular grading of the road combined with the addition of granular material from the eskers to the driving surface will be needed. This will improve road safety and also reduce the amount of dust. Dust will also be mitigated by maintaining posted speed limits.

In sections of the road or times identified by the Agnico Eagle road supervisor as being prone to high dust levels, where safe road visibility is impaired, or in areas where dust deposition is potentially impacting traditional land use, fish habitat and/or water quality, the road supervisor will arrange mitigation measures as appropriate. This could involve actions such as grading of the road surface, placement of new coarser topping from eskers, and/or watering/ dust suppressant application of

the road surface. Based on the modelling of the dust emissions on the road, and the experience and monitoring data of the Meadowbank AWAR from Baker Lake to the mine site, use of chemical dust suppressants is not expected for the Whale Tail Pit Haul road. However, if there are safety concerns or areas of particular interest, chemical dust suppressants may be only used as a last resort and only in accordance with the Environmental Guidance for Dust Suppression published by the Government of Nunavut Department of Environment (GN 2014).

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**SECTION 9 • ROAD SAFETY**

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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. All Agnico Eagle and contractor vehicles that routinely travel on the road will be equipped with a radio set to the requisite road frequency. Consequently, all traffic on the road will always have radio contact with security and other road traffic. 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.

The same safety rules that will apply to all users of the Whale Tail Pit Haul road, these are:

- Maximum speed limits of 50 km/h;
- Use of seat belts by all drivers and passengers in pickup trucks, haul trucks, etc. is mandatory (bus passengers are an exception);
- Driving under the influence of alcohol or intoxicating drugs is prohibited;
- Wildlife has right-of-way on the road, and no harassment of wildlife is allowed;
- For their safety and protection, traditional land users and hunters are not permitted to drive on the haul road;
- All hunting activity must avoid shooting across the road and should respect a safe shooting distance from the road (suggested at 1 km)<sup>9</sup>;
- Hunting is not allowed within 1 km of Meadowbank Mining, Whale Tail Pit, Whale Tail Haul Road and the Amaruq Exploration Site;
- Traditional land users (i.e. hunters on ATVs or snowmobiles) crossing the haul road on identified crossing locations must yield to all Haul Road Traffic;
- Haul Road Traffic approaching traditional land use crossings must be vigilant of the potential use by ATVs or snowmobiles to ensure users protection and safety;
- Vehicles are not to park on the travel surface of the road but pull off the road at a safe location such as bypass pullouts to prevent accidents; and
- Signs will be posted warning of an upcoming gate<sup>10</sup>.

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<sup>9</sup> Winter travel between Gjoa Haven and Baker Lake may occur, which could lead to the road being crossed by ATVs or snowmobiles. Agnico Eagle will work with local hunters to ensure the preferred snowmobile crossing areas are well identified for both hunters and operators on the road.

<sup>10</sup> Unmanned gates will be installed at both ends of the road.

## 9.1 Road Signage

Agnico Eagle will post appropriate road signs along the road in both English and Inuktitut. Typically, signs will advise drivers of the posted speed limit, of approaching bridges, of approaching curves, traditional land use crossings, and/or areas of lower visibility (blind hills or obstructed curves).

English and Inuktitut signs will be posted at the eastern and western ends of the road, at an appropriate mid-point to advise road operators that they are in a potentially hazardous area due to the presence of truck traffic.

Speed limit signs will be posted at intervals of approximately every 5 km along the road. Reflective flags will be installed along one side of the road to help drivers identify the road shoulder during blizzard, white out conditions or dense fog. Typically, these flags will be black in colour to help them stand out in white-out conditions, and are nominally set at intervals of 50 to 100 m apart. Kilometre markers will be posted at intervals of at least 1 km along the road.

A list of road signage is presented in Table 9-1.

Table 9-1. Road Signage

Element	Approximate Location
Safety precautions and users advice	At the eastern and western ends of the road, and at an appropriate mid-point along the road
Blind hill	200 m ahead of the beginning of a blind hill
Speed limit	Nominally at 5 km intervals
Curve	200 m ahead of a curve
Bridge announcement	200 m ahead of a bridge
Bridge side sign	On each side of the bridge
Traditional Land use crossing signs	At the crossing approach for haul road operators and well-marked stop signs at crossing approaches for ATV or snowmobile operators
Road Markers or flexible delineators (flags)	Nominally at 50 to 100m intervals
Kilometres markers	Nominally at 1 km intervals

## 9.2 Policing of Road Safety Rules

As a privately operated road, responsibility for “policing” will not fall under the RCMP. Responsibility for all operating and maintenance activity on the road will rest solely with Agnico Eagle. All Agnico Eagle employees and its contractors who will use the road will be required to take road safety

training before being allowed to venture out on the road. Further, Agnico Eagle will concentrate on maintaining awareness among Agnico Eagle employees and contractors on the safe use of the road.

Agnico Eagle will use its road supervisor and site security to monitor what is occurring on the road. They will monitor activity on the road through periodic patrols of the road, and in conversation with drivers on the road at the time. Agnico Eagle will monitor speed limit infractions by direct observation of drivers seen to be driving too fast. Agnico Eagle will also rely on radio contact with all company and contractor vehicles on the road to monitor unsafe conditions or activity. Agnico Eagle does not have any special policing powers and cannot issue tickets or use other methods to address unsafe operation. Agnico Eagle can record unsafe practices, warn the person causing the infraction, and in severe or repeated cases of violation, in collaboration with the RCMP, will remove all privileges for future access to the road by an offending driver or hunter.

Regulatory inspectors can inspect the road and any associated infrastructure at will. Agnico Eagle will abide with the recommendations and directives provided by the inspectors.

However, it is worth noting that the *Criminal Code* of Canada applies to private roads. For example, if an accident were to occur on a road and alcohol was involved, that person could be charged by the RCMP.

## SECTION 10 • ACCIDENTS, SPILLS, MALFUNCTIONS AND EMERGENCY RESPONSE

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Emergency response is reactive, while prevention reduces the frequency of emergency responses. Agnico Eagle's emphasis will be on prevention, while at the same time keeping resources close at hand in order to respond to emergencies on the road in a timely manner.

Three possible causes of road emergencies are the road, vehicles and people. The interplay of these three elements leads to either safe use of the road or emergency responses. Agnico Eagle is fully responsible for the design, construction and maintenance of the road. Agnico Eagle will ensure that its vehicles and those of the contractors are in good working order before they venture out on the road. As well, Agnico Eagle will train its employees and contractors on road safety.

Agnico Eagle will lead by example in road safety. Agnico Eagle will train road users in road safety, shaping good driving practices and influencing behaviour on the road. Emphasis will be placed on the use of seat belts; observing posted speed limits; improving visibility for others by wearing reflective clothing at all times; dealing with driver inexperience, etc.

In urgent circumstances and where appropriate, Whale Tail Pit operations will request assistance from other parties at the Meadowbank mine or in Baker Lake. However, based on Agnico Eagle's experience with the Meadowbank access and haul roads, Agnico Eagle does not believe that its Whale Tail Pit Haul road will result in any increased demand on local public service providers (i.e., fire, police, ambulance, medical, and maintenance) in Baker Lake.

### 10.1 Accidents and Malfunctions

There will be accidents and malfunctions that occur on this road. Such unfortunate events are inevitable, no matter how much effort is devoted to preventing them. However, mitigation measures and response plans will be developed that can be applied to reduce the frequency and severity of such events. The types of events considered likely are as follows:

- Vehicle collisions that may result in personal injury and spillage of potential harmful materials such as fuel, lubricating fluids, antifreeze, etc.;
- Contact between vehicles and wildlife that may result in harm to wildlife, personal injury and spillage of potentially harmful materials, etc.;
- Single-vehicle accidents that may result in personal injury and spillage of potentially harmful materials;
- Risk of people getting stuck on the road in bad weather such as in heavy snow or whiteout conditions, or due to mechanical breakdown; and
- Spills of harmful materials onto the land or into water.

In an effort to prevent these occurrences, the road will be closed under poor weather or road conditions. Furthermore to improve the response in the event of an incident or accident, emergency responders will be available at Meadowbank and at Whale Tail Pit, an emergency spill response seacan will be installed midway along the road and will be fully stocked with emergency response equipment and the road supervisor will have an emergency spill response kit in their vehicle.

All employees will be responsible to report, mitigate and clean up small spills. In the case of a larger spill, spill response will be implemented by the ERT based at Meadowbank and the environmental staff, who will advise, document, and report on initial response and clean-up actions. The Spill Contingency Plan will be activated in responding to a spill.

Agnico Eagle emergency response team (ERT) personnel are tasked with responding to any vehicle accident resulting in personal injury or spillage of harmful material. Agnico Eagle will initiate extraction and transport to medical assistance at Whale Tail Pit or the Meadowbank mine. In the event of serious injuries, the person or persons will be evacuated by air to the Baker Lake medical centre or a Winnipeg medical facility. The procedures in place in the Risk Management and Emergency Response Plan will be followed.

Agnico Eagle will report all reportable scale incidents to the appropriate Government authority (e.g., Mines Inspector, RCMP, Nunavut Water Board (NWB), NU Spill Line, Environment Canada, GN Department of Environment, Fisheries and Oceans Canada (DFO), KIA and Hamlet of Baker Lake).

The following actions are to be taken in the event of an accident on the road (including snowmobiles):

- Check the condition of people involved in the accident and provide immediate first aid if appropriate;
- Call the road or Mine Operations dispatch by radio and report the location and nature of the accident and indicate the type of assistance required (medical help, environmental cleanup, fire and/or mechanical help);
- Secure the accident site so that the vehicles do not continue to present a hazard to others. This may involve moving the vehicles to the nearest pulloff in the event of a minor accident, or blocking off the road in both directions in the event of a more serious accident; and
- If safe to do so, secure the site to prevent continued spill or leakage of contaminants into the surrounding environment.

Upon receiving the accident call, the road dispatch will initiate the emergency response procedure passing along the information to the emergency response coordinator. The emergency response coordinator will then call out the required emergency response personnel to assist at the accident site.



Once the accident site is secured and all people requiring assistance have been removed to medical care, the emergency coordinator will turn the scene over to the Meadowbank Mine or Whale Tail Pit safety personnel so that an appropriate accident investigation can be initiated.

In the event of an incident involving contact with wildlife, the road dispatch will notify the site security personnel and the environmental representatives. Security and the site environmental team will then initiate an appropriate accident investigation. The Environmental Department will ensure that appropriate reporting of such incidents is made on a timely basis to the KIA, the Baker Lake HTO, and the GN Conservation Officer in Baker Lake. Any animal carcasses will be removed from the scene of the accident and will be incinerated or delivered to the GN officer.

In the event of a serious accident, the RCMP will be contacted and advised of the incident. The RCMP will then decide on whether they will become involved or take the lead on any subsequent accident investigation.

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**SECTION 11 • WILDLIFE MANAGEMENT**

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Wildlife is expected to occasionally be observed on or immediately next to the road. Caribou and other wildlife will have the right-of-way at all times. In case of problems (e.g. small herds or aggregations of caribou), the environmental department will be in charge of managing the situation and, with the collaboration of the security department, will advise road users by patrolling the road. Site personnel will notify and be notified by dispatch radio if any wildlife is observed on the road or if extra vigilance is needed along a specific area of the road.

If a high risk wildlife incident was to occur:

- All incidents between vehicles and wildlife must be reported to the Agnico Eagle road supervisor and the environmental representative whether they are:
  - Near-miss;
  - Collision with injury to wildlife; or
  - Accidental death.
- Each incident will be investigated by the road supervisor and the Environment Department, and measures taken to avoid re-occurrence put in place. Disciplinary measures will be taken against any employee if the investigation concludes that the accident is the result of negligence; and
- In the case of accidental death of an animal, the Agnico Eagle's Environmental Department will contact the GN Conservation Officer in Baker Lake. The carcass will be removed from the road and incinerated to avoid attracting scavengers such as Arctic foxes, wolves, grizzly bears, and/or wolverines.

The Terrestrial Ecosystem Management Plan (found in Volume 8 of the FEIS) has been updated to include adaptive management, mitigation, monitoring and stakeholder engagement for the protection of wildlife habitat, ungulates, predatory mammals, small mammals and birds during the construction, operation and closure of the Whale Tail Pit Haul Road.

Once the road is operational, Agnico Eagle will implement a monitoring program to record on a systematic basis the prevalence of wildlife seen along the road according to the Meadowbank Terrestrial Ecosystem Monitoring Program. The program will focus on caribou, muskoxen, bears, wolves, migratory birds, and raptors. Furthermore, *Caribou Protection Measures*<sup>11</sup> from relevant agencies will be adhered to. Specific details of the monitoring programs are outlined in the Terrestrial Ecosystem Management Program; including specific decision trees or charts outlining monitoring and mitigation which are presented to ensure consistency and clarity with stakeholders for the protection of caribou, wolves and raptors. The monitoring program as envisioned will consist of a periodic ground survey of wildlife observed along the road, height of land surveys and

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<sup>11</sup> NPC, KIA and GN have respective caribou protection measures that Agnico Eagle will adhere to.

systematic surveys. The survey will be an extension of existing monitoring surveys and will log type of wildlife observed, estimate of numbers, and nearest kilometre marking along the road. The data would be collected, aggregated and presented in the annual report, consistent with the Meadowbank AWAR monitoring.

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**SECTION 12 • CLOSURE AND RECLAMATION**

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The Whale Tail Pit Haul road will be decommissioned and reclaimed by Agnico Eagle if operations cease at Whale Tail Pit, if exploration on the Amaruq property fails to find sufficient ore resources to support mining, or if Agnico Eagle fails to obtain the necessary authorizations to proceed with any mining development. Closure and reclamation of the road would be initiated within a year following the completion of closure and reclamation of the Whale Tail Pit site, Amaruq camp and exploration sites.

Specific details of the reclamation and closure activities are described in the Whale Tail Pit Interim Closure and Reclamation Plan found in Volume 8 of the FEIS.

Decommissioning of the road will be accomplished by loosening compacted surfaces, flattening side slopes, removing all culverts, and bridges, and other potential obstructions to drainages paths. The objective will be to make the road surface impassable by vehicular traffic by ripping the entire road bed and removing all bridges and culverts along the route.

The loosening of compacted surfaces will be accomplished by ripping of the roadbed utilizing a dozer with a “ripper” attachment on the back. Successive passes with the dozer longitudinally along the road bed will eliminate the level road surface and make travel difficult. It is anticipated that, in this way, the abandoned road will not be useable by wheeled vehicles (i.e. pick-up trucks). The road bed would still be useable by ATV or snowmobile and, thus, even after final reclamation, the reclaimed roadbed would offer similar passage as that which currently exists.

Road decommissioning works will be carried out as necessary to stabilize any slopes where potential for slope erosion may exist. Stabilization measures may require pulling back of side-cast fills on locally steep slopes or buttressing and/or re-contouring of steepened out slopes using non-acid generating material.

These measures would also be applicable to borrow pits located adjacent to the roadway that remained open following road construction. As much as practical, deactivated surfaces will be graded to blend with the existing topography.

To the extent practical, the reclamation would also restore the natural pre-road hydrology. Natural drainage courses would be restored primarily through the removal of all culverts and bridges, and through rehabilitation of channels and banks at the crossing sites. Cross-drain structures (cross-ditches) will also be installed where necessary between culvert sites. Where armouring rock (rip-rap) is required, this rock will be non ARD/ML for the protection of aquatic life. Where affected watercourses are fish bearing, the timing of work will have to be restricted to within the designated Fisheries and Oceans Canada fisheries work window. All in-stream works will be carried out using best management practices for erosion and sediment control.

Decommissioning of the road will start from the Whale Tail Pit road end of the road and progress southeast towards the Meadowbank mine. Stream crossings will be rehabilitated as they are encountered during the progression of the work.

### 12.1 Reclamation of Borrow Pits Sites

All borrow pit sources developed during the construction of the road will be selected to generate only non-acid generating/low metal leaching materials. Water quality monitoring and testing will be undertaken periodically during the construction and operational period of the road to measure the quality of water draining from the open borrow pit sites and from the road base materials.

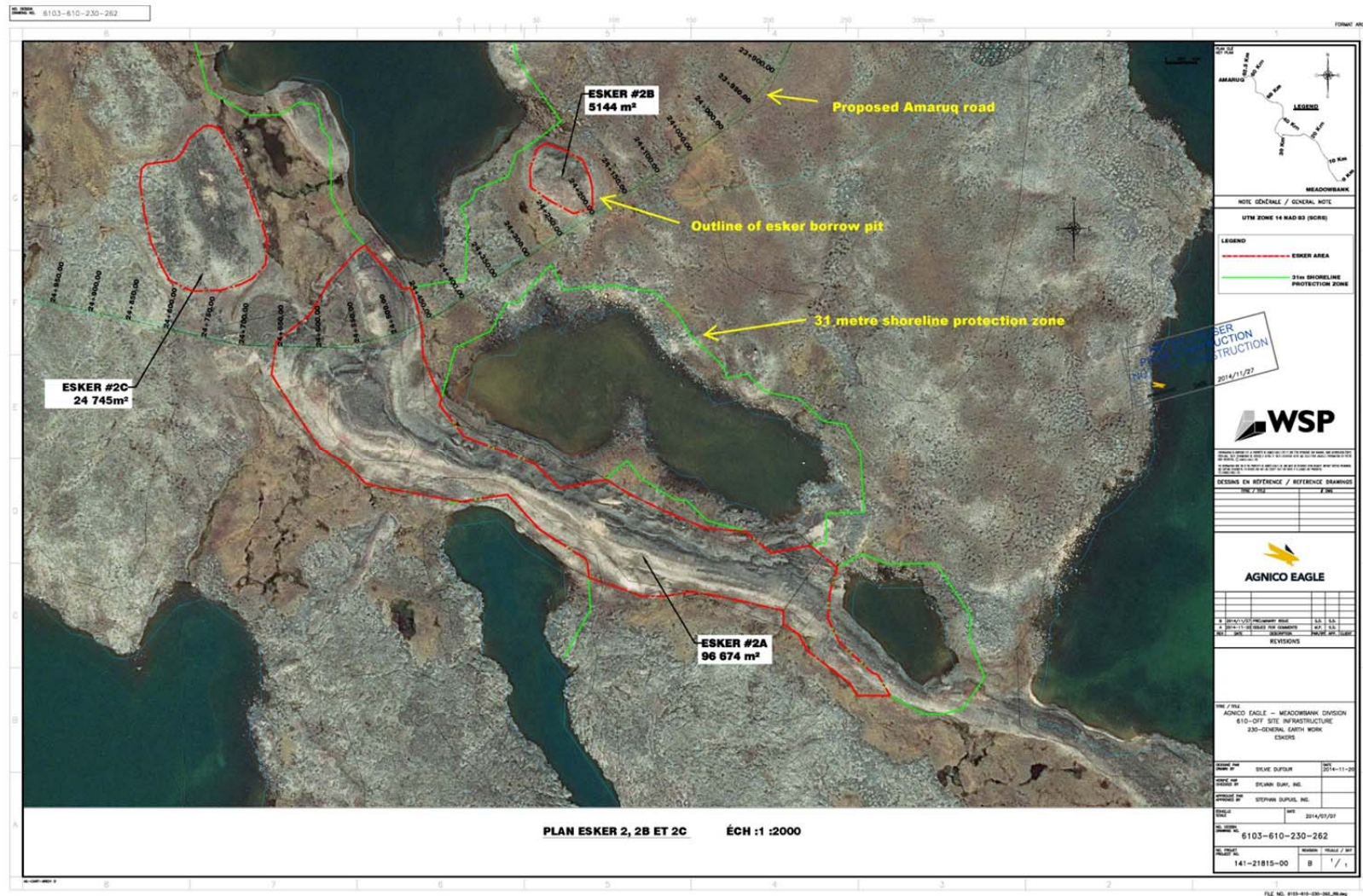
The borrow pits will have gently sloping walls and be designed for positive drainage wherever possible. With prudent initial design, the borrow pits should require little reclamation following completion of the road. Loose material will be pulled to the floor of the borrow pit and the entrance blocked.

### SECTION 13 • REFERENCES

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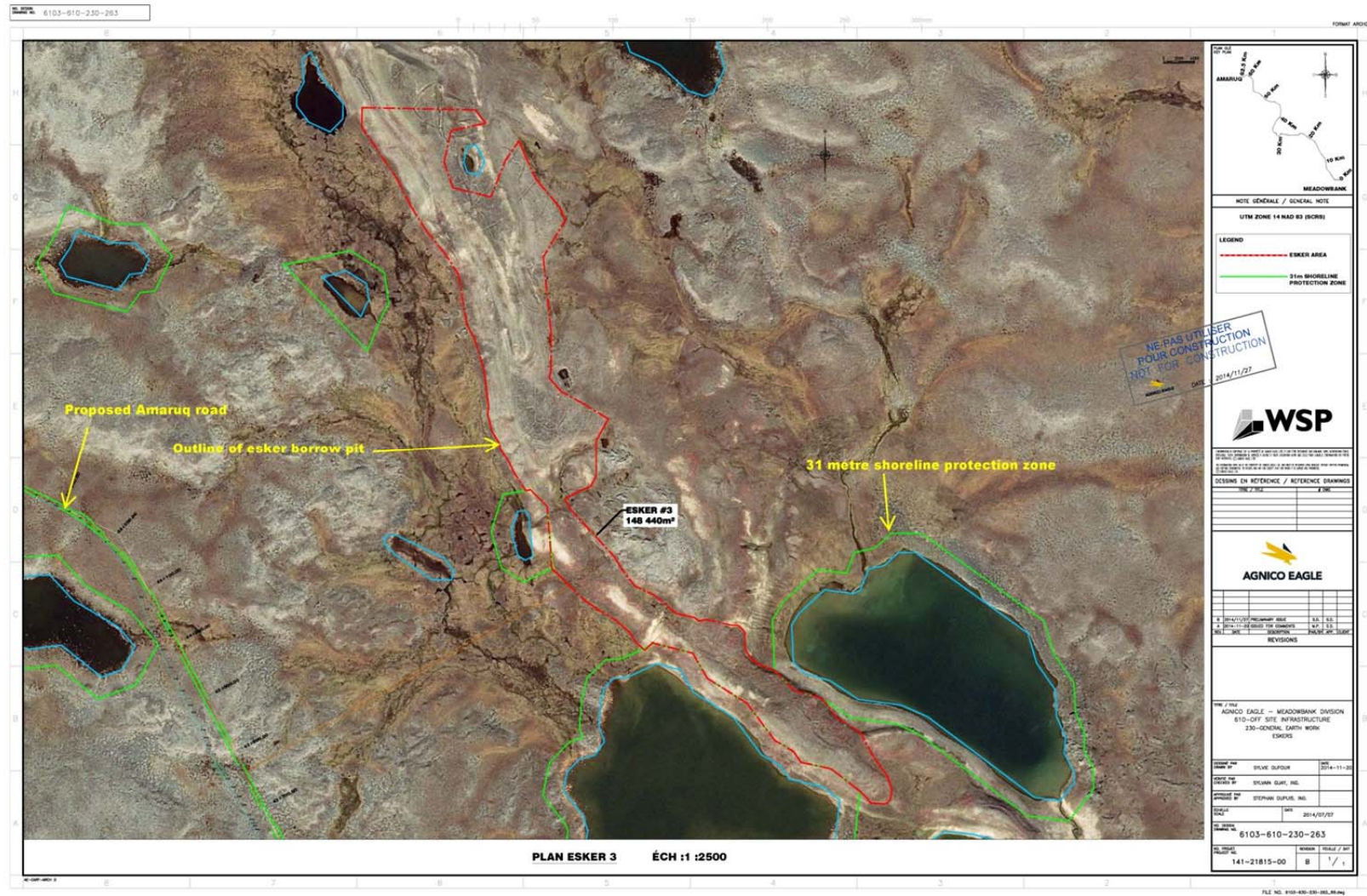
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- Agnico Eagle 2016. Amaruq Exploration Access Road Management Plan v 2. Agnico Eagle June 2016.
- Government of Nunavut, Department of Environment 2014. Guideline: Dust Suppression on Unpaved Roads
- Nunamit Stantec Limited 2016. Archaeological Baseline Report. Agnico Eagle Mines: Meadowbank Division – Whale Tail Pit and Haul Road. Submitted to Agnico Eagle January 2016.
- MEND 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geological Materials. MEND Report 1.20.1, Natural Resources Canada.

**Appendix A: Plan view figures of Borrow Pits along the Haul Road (Esker #1 to 7)**



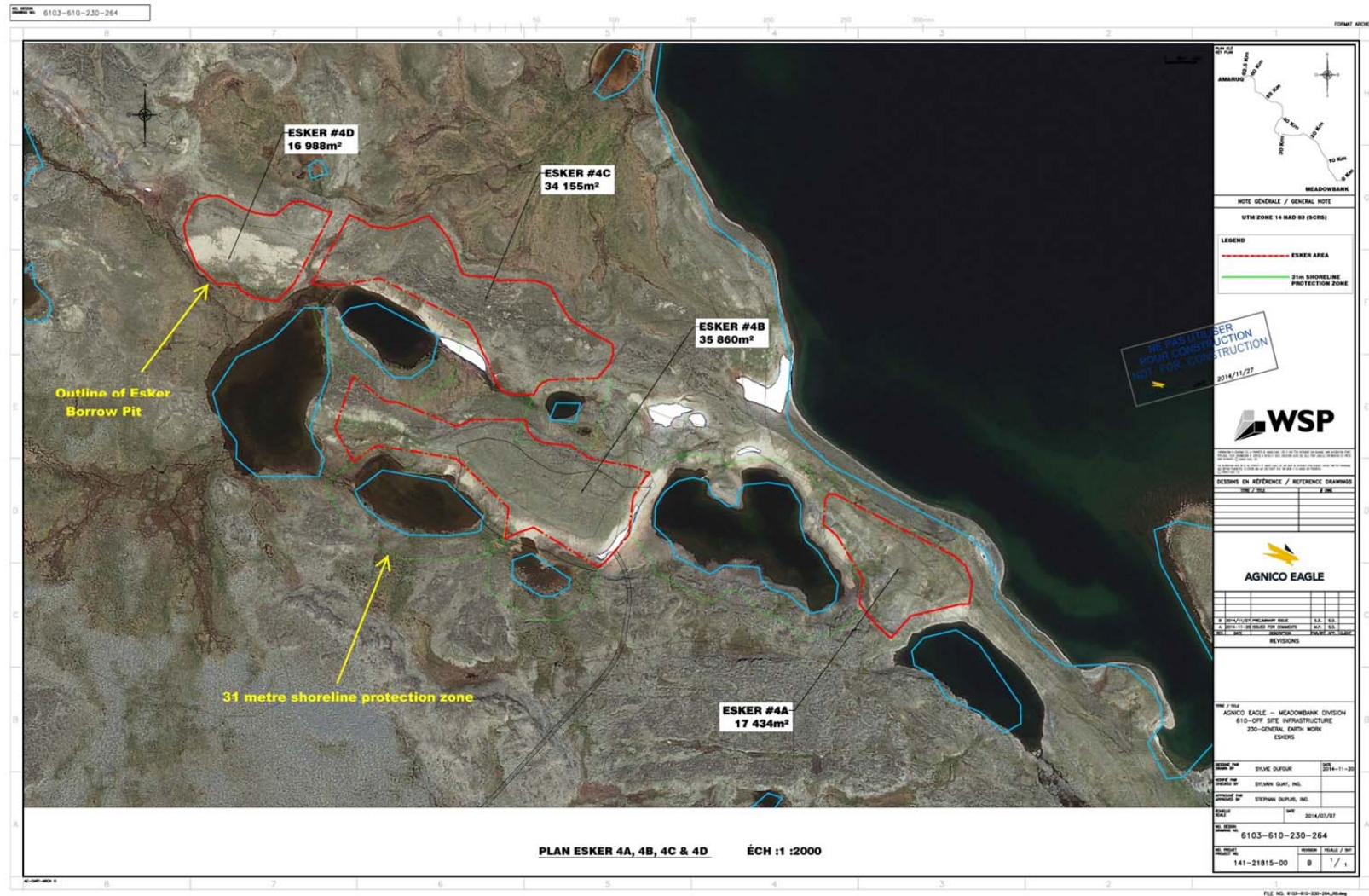
Esker borrow pit 2 located on Crown Land. Figure 1.1 shows where the proposed borrow pit is to be located along the proposed road.





Esker borrow pit 3 located on Crown Land. Figure 1.1 shows where the proposed borrow pit is to be located along the proposed road.



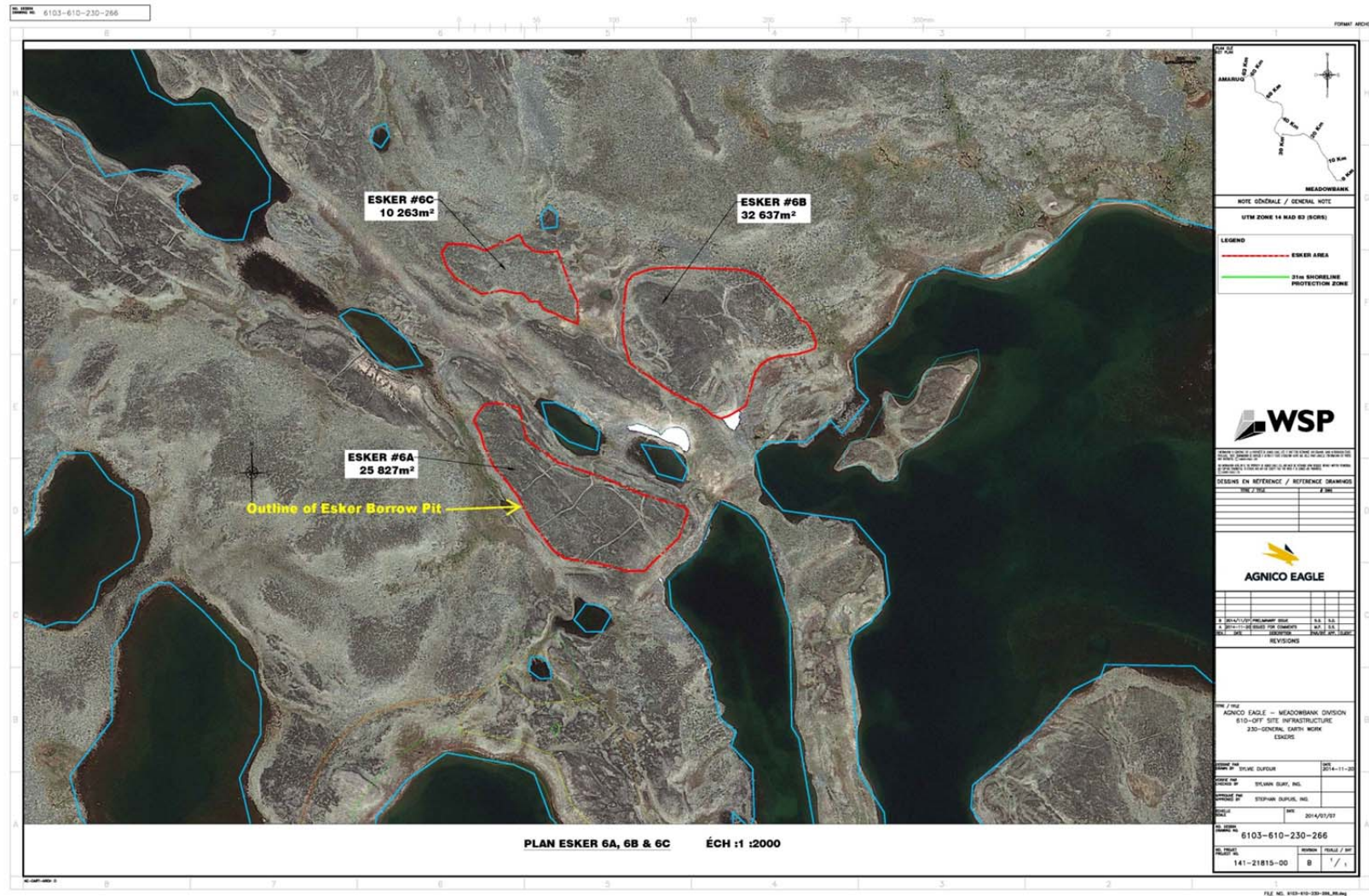


Esker borrow pit 4 located on Crown Land. Figure 1.1 shows where the proposed borrow pit is to be located along the proposed road.

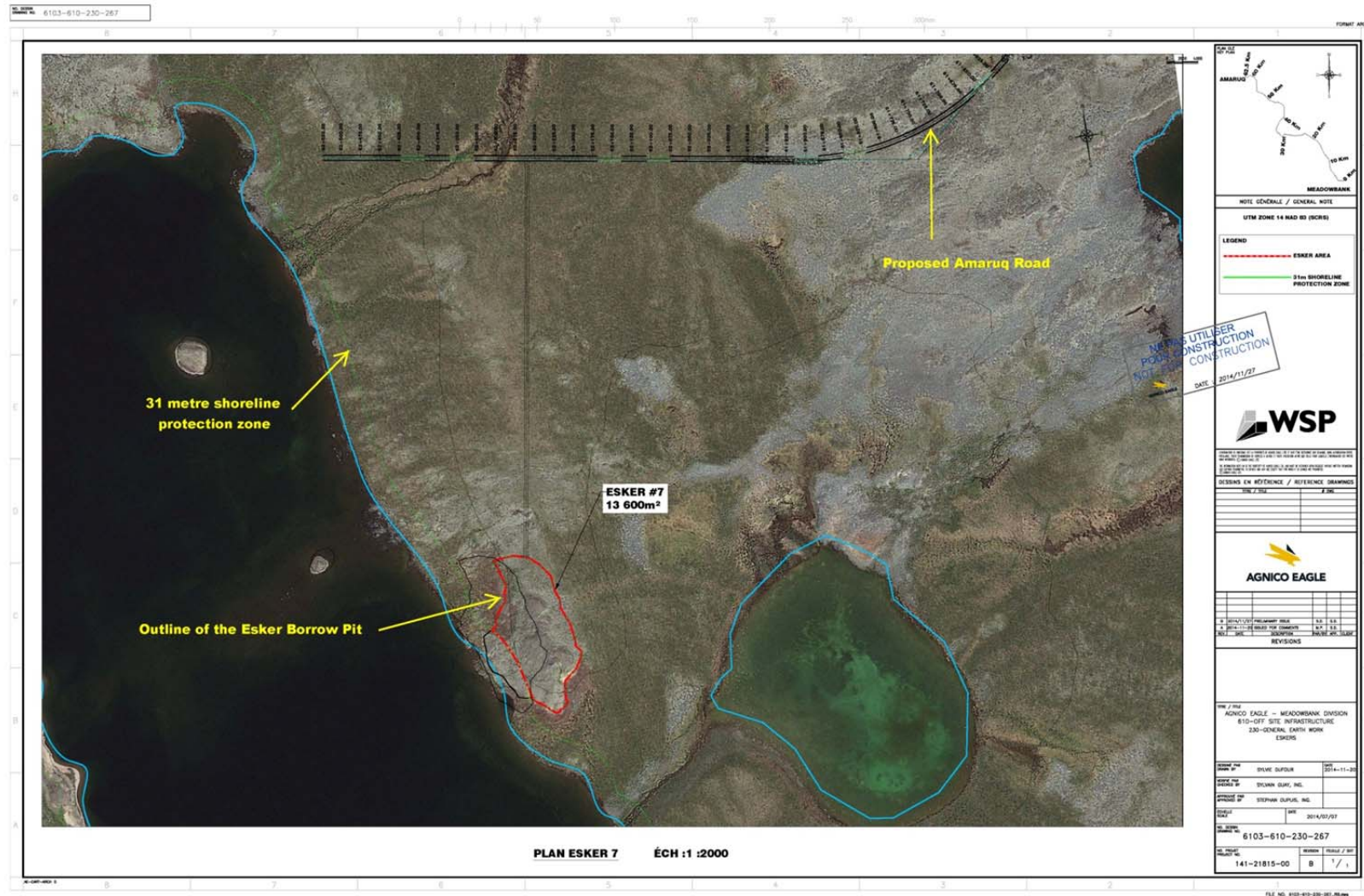


Esker borrow pit 5 located on Inuit Owned Land. Figure 1.1 shows where the proposed borrow pit is to be located along the proposed road.





Esker borrow pit 6 located on IOL. Figure 1.1 shows where the proposed borrow pit is to be located along the proposed road.



Esker borrow pit 7 located on IOL and within the proposed commercial lease for the Amaruk camp and airstrip. Figure 1.1 shows where the proposed borrow pit is to be located along the proposed road.