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Detailed engineering of water management and geotechnical infrastructures at Amaruq

Design Report of North East Dike

Agnico Eagle Mines Limited - Meadowbank Division

Mining & Metallurgy

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Quebec, July 25th, 2018

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Subject: Detailed engineering of water management and geotechnical infrastructures
Design report of North-East Dike
Agnico Eagle File: 6118-E-132-002-TCR-012
SNC-Lavalin file: 651298-7000-40ER-0001_02

Dear sirs,

We are pleased to submit the final version of our report on the detailed design of the North-East Dike, which is a temporary work, but an important component of the water management infrastructures required during open pit mining of the Whale Tail deposit.

Do not hesitate to communicate with the undersigned should you have further questions regarding the content of this report.

Truly yours,

SNC LAVALIN INC.

Yohan Jalbert, Eng.
Project Manager
Mining and Metallurgy

YJ/bsp

List of Revisions

Revision				Revised pages	Remarks
#	Prep.	App.	Date		
PA	MD / GH.	YJ	2018-07-12		Issued for internal revision
PB	MD / AA / G.H	YJ	2018-07-13	All	Issued for client review
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01	GH	YJ	2018-07-18	10, 11 & 15	Issued for use
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1.0 INTRODUCTION

1.1 Context

Agnico Eagle Mines Limited, Meadowbank Division (“Agnico Eagle”) will develop the Whale Tail Pit, a satellite gold deposit, as a continuation of current mine operations and milling at the Meadowbank Mine. The property is a 408 km² site located on Inuit Owned Land, approximately 150 km north of the Hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Mine in the Kivalliq region of Nunavut. The property, whose approximate location is shown on Figure 1-1 was acquired by Agnico Eagle in April 2013..

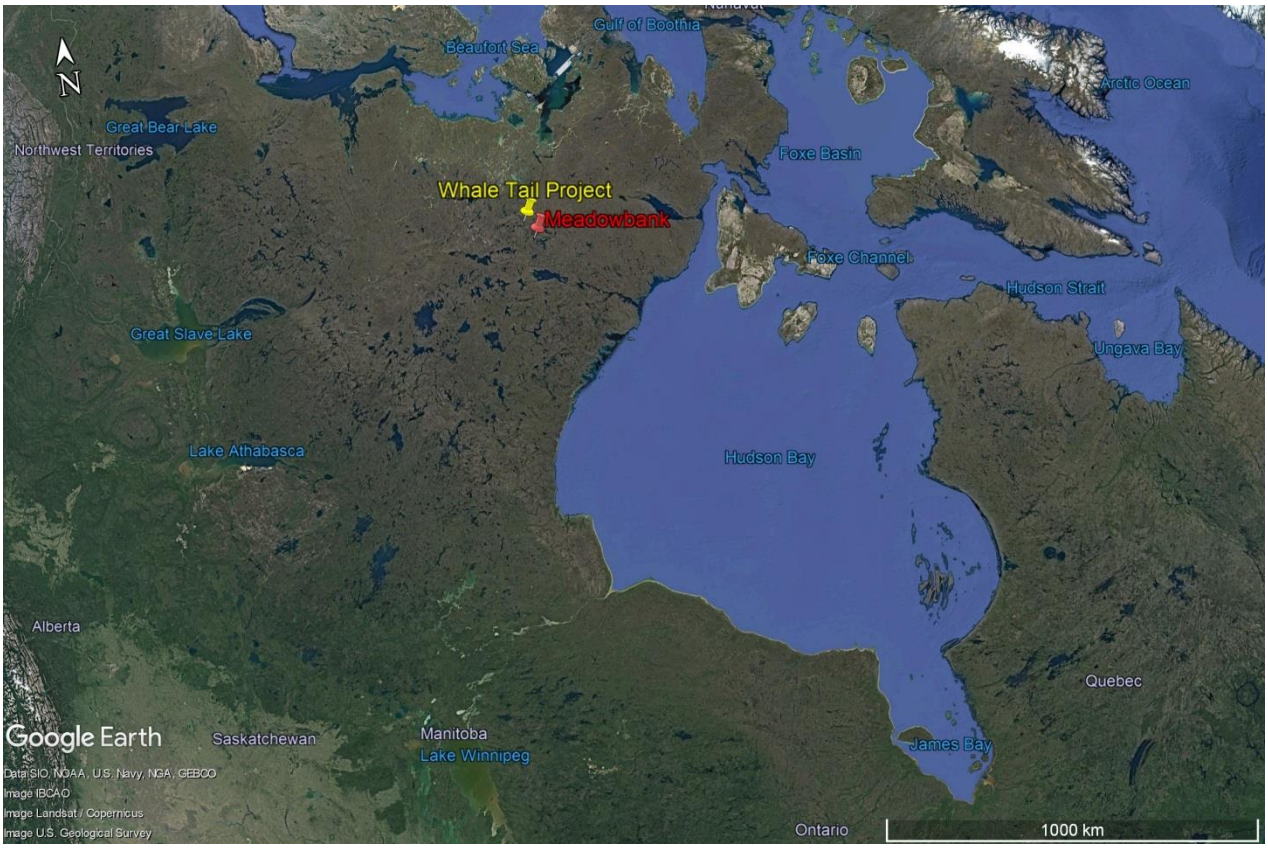

Figure 1-1: Meadowbank and Whale Tail site locations

The Meadowbank Mine is an approved mining operation and Agnico Eagle is planning to extend the life of the mine by constructing and operating the Whale Tail Pit. The North-East Dike (NE Dike) discussed in the sections to follow, is part of the water management infrastructures that are required ahead of the development of the Whale Tail Pit. SNC-Lavalin has been mandated to develop the design of the dikes, channels and ponds of this new project.

1.2 Objective

The objective of this report is to present the detailed design of the North-East ("NE") Dike. The NE Dike , located just north of the Whale Tail Pit ,is shown on Figure 1-2. The dike is a temporary but an important component of water management infrastructures that will be built to prevent runoff from the watershed behind it from reporting into the Whale Tail pit. The upstream slope of the dike, whose main body will be composed of rockfill, will be lined with bituminous geomembrane (BGM), anchored at its upstream toe in a layer of fine filter amended with bentonite (FFAB) layer; the latter placed in a key trench.

Water from the pond that will be created on the upstream side of the dike will be periodically pumped out and treated for suspended solids at the Attenuation Pond. .

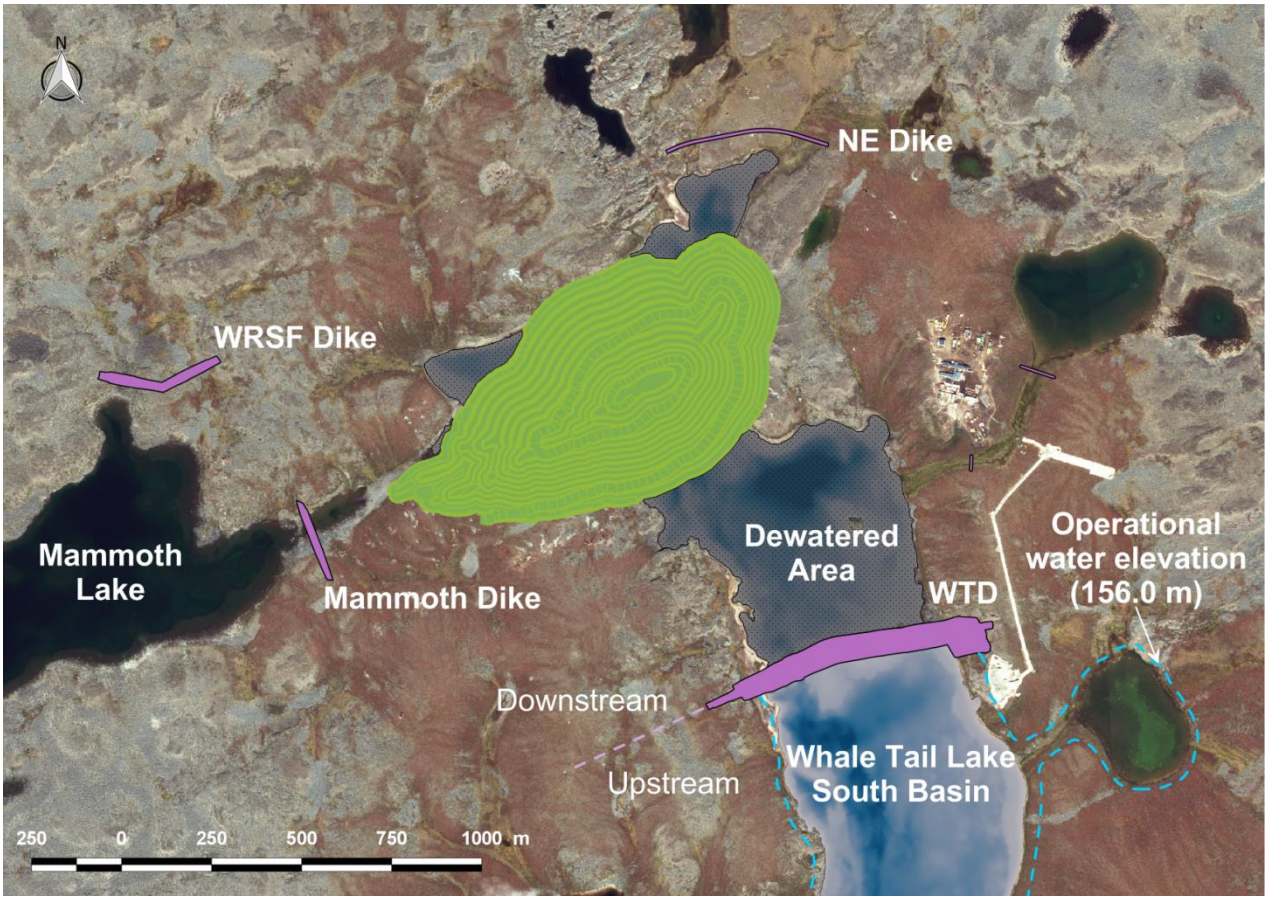

Figure 1-2: Location of the North-East Dike

1.3 Organization of the report and abbreviations

The report presents all of the available information, reasonable inferences, assumptions and conclusions based on SNC-Lavalin's experience under similar conditions, derived from the detailed geotechnical investigation and analyses carried out for the Whale Tail Dike (WTD) and the thermal analyses carried out for the Waste Rock Storage Facility (WRSF) Dike.

For completeness in presentation, the report includes the technical specifications for the NE Dike (SNC-Lavalin, 2018d) in Appendix A together with the design drawings. Therefore, when a drawing or drawings are mentioned in the report, the reader shall consult Appendix 1 of the technical specifications.

The abbreviations used in this report are defined below in alphabetical order.

BGM means bituminous geomembrane;

FFAB means fine filter amended with bentonite;

NE Dike means North-East Dike;

WRSF means Waste Rock Storage Facility;

WTD means Whale Tail Dike.

2.0 GUIDELINES AND STANDARDS

The design of the NE Dike is based on latest Dam Safety Guidelines published by the Canadian Dam Association (CDA) with respect to dam classification. The technical specifications included in Appendix A (SNC-Lavalin, 2018d), provide a list of the ASTM and other construction material standards relevant to the NE Dike.

3.0 AVAILABLE INFORMATION

No geotechnical investigation has been carried out at the NE Dike site. However, due to the fact that the NE Dike is a low height and temporary structure, the available mine exploration holes carried out between 2014 and 2016 (shown on Figure 3-1) are considered sufficient for its design. The key information obtained from the mine exploration holes is the overburden thickness. Only the holes located within 50 m from the NE Dike were selected for the NE Dike design as shown in Figure 3-1.

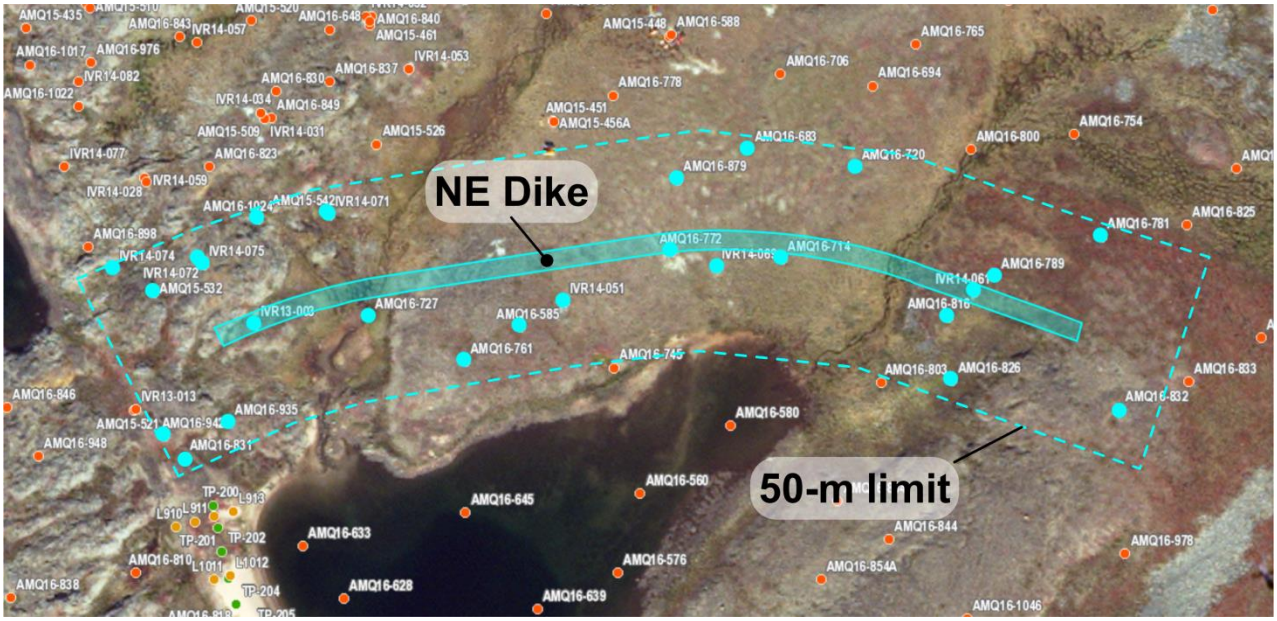

Figure 3-1: Available mine holes within 50 m of the NE Dike

A total of 27 boreholes are located within the 50-m from the footprint of the NE Dike. The average bedrock depth is 6.0 m, but generally varies between approximately 2.5 m and 11.0 m. Bedrock is near the ground surface at the west end of the dike as shown on the stratigraphic section on Drawing 651298-7000-4GDD-0003.

4.0 DESIGN BASIS AND CRITERIA

4.1 Design basis

These following elements were considered during the design of North-East Dike:

- The NE Dike will be constructed in 2018 and dismantled in 2020;
- It will be constructed with non-acid generating and durable rockfill. The material will come from the Starter Pit;
- A site specific geotechnical investigation has not been carried in the area. However, based on available mine drill holes and the results of the nearby geotechnical investigations (WTD, WRSF), the dike will be founded on overburden inferred to be glacial till;
- Water elevation in the NE Pond will be controlled by pumping to keep it at a minimum level (SNC-Lavalin, 2018g);
- Hydrologic/hydraulic design criteria (section 4.2) are defined to establish a safe dike design in accordance with acceptable standards (CDA, 2014) and the NE Pond operational criterion (section 4.3) is re defined to select the pumping capacity. .
- NE dike will not be used as an access road.

4.2 Hydrologic/Hydraulic design criteria

The Detailed Design Basis and criteria related to the hydrology and hydraulic component of the entire project have been presented in (SNC-Lavalin, 2018a). Table 4-1 and 4-2 summarize respectively the dam classification in accordance with the classification system proposed by the Canadian Dam Association (CDA, 2014) and the resulting hydrologic criteria respectively for the NE Dike.

Table 4-1: Dam Classification Criteria for the NE Dike (SNC-Lavalin, 2018g)

Risk Type	Dam Class	Comments	Reference
Population	**Significant**	Workers in the pit located downstream of the dike are exposed to flood risk from the NE dike only temporarily as this dike will be in service for only about two years and that any flood above the design event will overflow to Nemo lake.	Dam Safety Guidelines (CDA, 2007, rev 2013)
Economy	**Low**	Limited infrastructure downstream of the dike.	Dam Safety Guidelines (CDA, 2007, rev 2013)
Environment	**Significant**	Marginal loss of habitat in case of flooding and sediment transportation: the area was already flooded before the construction of the infrastructure.	Dam Safety Guidelines (CDA, 2007, rev 2013)
Summary: **SIGNIFICANT**			

Table 4-2: Design Criteria for the NE Dike

Use	Water Type	Classification (CDA, 2014)	Inflow Design Flood	Water Level (m)		Crest Elevation (m)
				Normal	Design Flood	
Runoff storage	Non-contact	Significant	100 – 1000 yr	No water	156.7 (1)	157.5

(1) Above this elevation, water is discharged towards Nemo Lake. The integrity of the dike will not be at risk of failure.

4.3 NE Pond operational criterion

An operational design flood with a 10-yr return period is used to design the pumping station to avoid any spill towards Nemo Lake (SNC-Lavalin, 2018i). This smaller design flood return period was selected by Agnico Eagle because the life span of this infrastructure is only expected to be of approximately two years. In case of a flood larger than the design flood, water will overflowtowards Nemo Lake rather than towards the mine site.

4.4 Seismic

Based on the 2015 seismic hazard map of Canada, the region where the Whale Tail Pit is located has low seismicity.

5.0 HYDROLOGY

5.1 Available Data

Available hydrometeorological and hydrometric data are:

1. Hydrometeorological data from Environment Canada Baker Lake A station, located approximately 124 km southeast of the Whale Tail site, and covering the period from 1946 to 2017. These data include total precipitation, rainfall, snowfall and snow on ground;
2. Water level and streamflow measurements carried out at different locations on watersheds near the project site during June to September of years 2015 and 2016 (Golder Associates Ltd, 2017).
3. Flow measurements were made in streams. However the steam beds were covered with boulders, making the data less reliable.

5.1.1 Hydrometeorological Data

Data from Baker Lake A meteorological station is available for the period 1946-October 2017. However, years 1946-1949, 1973, 1993, and 2015 have several missing records and consequently were excluded from the data set used for the analyses. The missing data from other years (1950-1972, 1974-1992, and 1994-2014) were filled using the average values from available years for the same day and month. The resulting rainfall, snowfall, daily and total precipitation data series cover 66 full years over the period 1950-2017 (1973 and 1993 data not used). The average annual precipitation, over the period 1950-2017, is 250 mm including, 145 mm of rainfall and 105 mm (water equivalent) of snow. This data is assumed to be representative of the conditions at the Whale Tail site.

5.1.2 Hydrometric Data

The Whale Tail Project is located on a watershed with an extensive network of lakes and interconnecting streams, with a lake to land ratio of approximately 20 %. During two summers, in 2015 and 2016, several discharge and water level measurements were made by (Golder Associates Ltd, 2017) both manually and with automated hydrometric stations. One of the automated stations was located at Whale Tail Lake outlet, and the recorded data is presented on Figure 5-1.

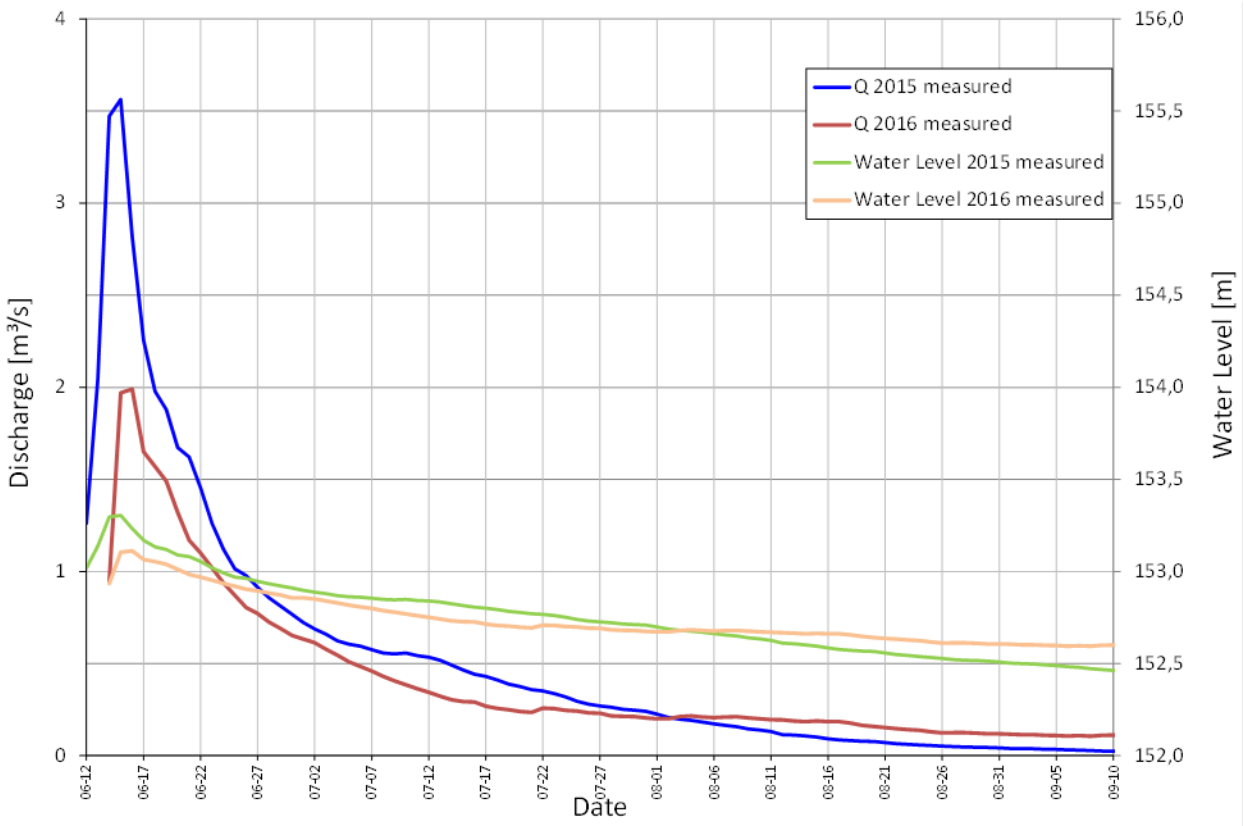

Figure 5-1: Whale Tail Lake Measured Outflow and Water Level (Golder Associates Ltd. 2017)

5.1.3 North-East Watershed

The NE Dike collects a watershed of approximately 206 ha as shown on Figure 5-2. It will be used to store runoff water from this watershed, to stop it from flowing towards the mine site and pit, before it can be pumped towards Mammoth Lake.

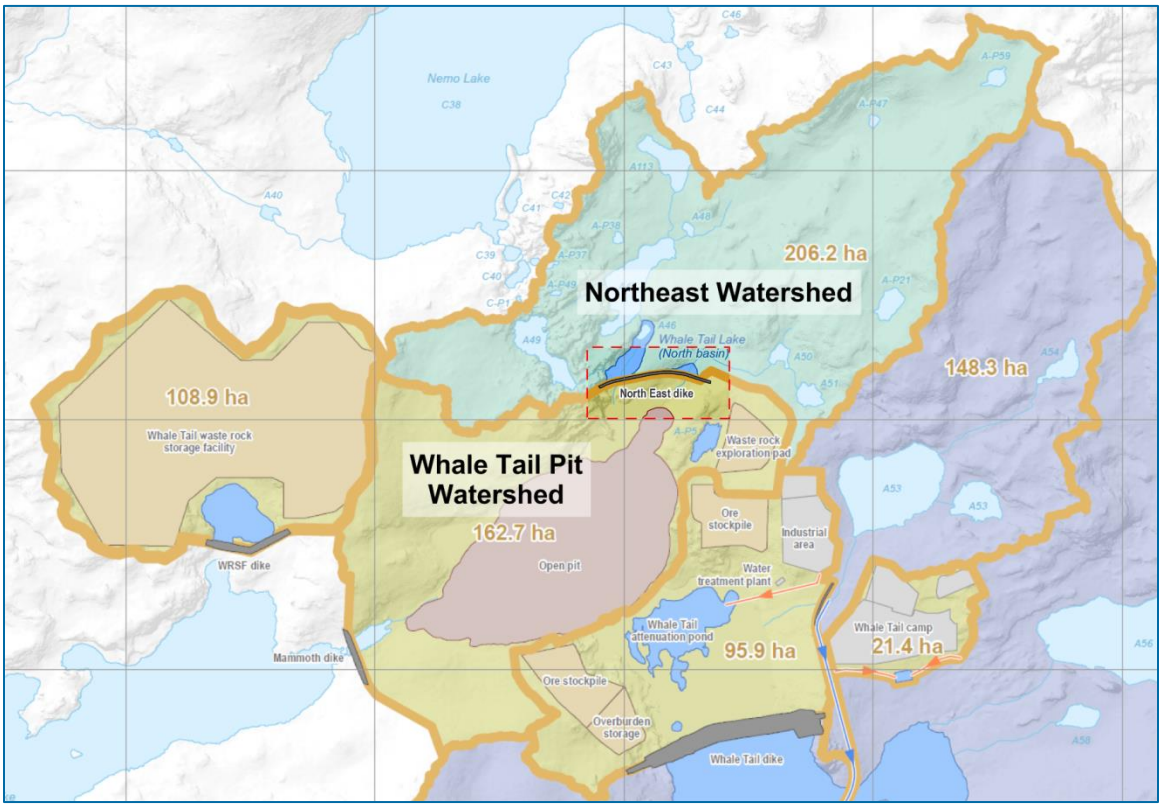

Figure 5-2: North-East Dike Watershed

6.0 NORTH-EAST DIKE DESIGN

6.1 General

The NE Dike is a temporary structure with an estimated service life of about 2 years. The dike is required to prevent runoff from the Northeast watershed (see Fig. 5-2) to the Whale Tail Pit. The dike has been designed to safely handle a flood event with a return period of between 100 and 1000 years. However, even though thermal analyses have not been carried out for the NE Dike, analyses that include thermal, stability, seepage, thaw settlement, stress, wind and waves, were carried out for the Whale Tail Dike (SNC-Lavalin, 2018h). Furthermore, thermal analyses were also conducted for the two other water management infrastructures namely, Mammoth Dike (SNC-Lavalin, 2018e) and the Waste Rock Storage Facility Dike (SNC-Lavalin, 2018f).

The NE Dike design takes advantage of what has been learned through the studies mentioned above.

6.2 Seepage, Stability and Thermal Performance

Seepage and stability analyses have not been carried out for the following reasons:

- Water will be pumped during operation (no water ponding allowed);
- The height of the dike is limited and the slope too gentle to be an issue with the stability.

However, even though thermal analyse have not been carried out for the NE Dike, it is recalled that the upstream slope of the dike will be lined with bituminous geomembrane (BGM) and encapsulated at the toe in a layer FFAB as for Mammoth and WRSF Dikes. Given the fact that NE dike is located on land as is the WRSF dike, it is expected to have a comparable thermal response as the latter, for which thermal analyses are available. Consequently, considering the similarity of the two dikes in terms of foundation condition, composition as discussed in Section 6.3 and height, the thermal analyses at the WRSF dike indicates that the FFAB layer in the key trench at the upstream toe of the NE dike will not be subject to the damaging freeze-thaw cycles.

6.3 Design Outline and Composition

The NE Dike will be essentially a rock fill embankment with a maximum and average heights of 2.6 m and 2.1 m respectively. Due to the presence of a hill in the middle of its alignment, the dike is divided into two legs referred to on Drawing 651298-7000-4GDD-0004 as East and West Legs.

As shown on the longitudinal cross section of the dike on Dwg.651298-7000-4GDD-0004 as well as on selected sections on Drawing 651298-7000-4GDD-0005, the key features of the seepage barrier are as discussed next.

The upstream slope will be lined with a BGM embedded fine filter zone on the slope, and in a layer of FFAB at its toe. The fine filter is in turn separated from the rock fill by a transition zone referred to on the design drawings as coarse filter. The BGM and the FFAB layer are required to retain all runoff up to the design flood with manageable seepage towards the Whale Tail Pit. The gradation limits of the fine and coarse filters satisfy filter grading rules as noted in SNC-Lavalin (2018a), however care must be taken to minimize segregation during their handling and placement

1. The BGM extends to the design flood level of elevation of 156.7 m on the upstream slope of the dike.
2. At the abutments of the East and West Legs of the dike, only the FFAB layer is provided between elevations 156.2 m and 156.7 m for the following reasons:
    a. As noted in Section 7.1, the probability of the design flood occurring during the short two-year service life of the dike is very low;
    b. The glacial till even thawed is expected to have a relatively low hydraulic conductivity; hence seepage of the extra head of 0,5 m (156.7-156.2 m), will probably be very small and manageable;
    c. The NE dike will impound non-contact water so minor seepage will not have any negative impact on either the environment or the operation;
3. The upstream slope of the hill in the middle will be protected with a rock fill thermal berm and considered sufficient long to maintain a reasonably low hydraulic gradient. .

Timing of the NE Dike construction is crucial for the optimal operation. The key trench shall be excavated at the end of the thawing season, to allow the excavation to be carried out without drilling and blasting. However, to allow the key trench excavation and subsequent fill and liner placement, the rock fill zone shall be constructed ahead of key trench excavation to be used as a working platform.

The Technical Specifications (SNC-Lavalin, 2018d) included in Appendix A provide the fill gradations as well as the requirements for the BGM and the sodium bentonite, which will be used to construct the FFAB.

Foundation preparation at the NE Dike will involve mainly the removal of snow, ice and boulders in the key trench area.

7.0 ENVIRONMENTAL CONCERNS

During NE Dike construction, waste materials as well as waste water (suspended solids) that will be generated during construction should be managed and be in conformity with the environmental policy of Agnico Eagle.

During the operation, water collected in the NE Pond will be pumped towards the water treatment plant located close of the Attenuation Pond.

8.0 CONSTRUCTION

The construction of NE Dike is planned between September and December 2018. The commissioning of NE Dike will be done for the freshet of 2019.

The NE Dike plan and selected sections are shown on Drawings 651298-7000-4GDD-0004 and 0005 appended to the technical specifications (SNC-Lavalin, 2018d) included in Appendix A.

9.0 INSTRUMENTATION AND MONITORING PLAN

Given the short service life of about 2 years and size of the NE Dike (2.5 m max.), the NE Dike will not be instrumented.

Inspection shall be done periodically to verify its general layout and performance from seepage point of view. Correctives work could be required to maintain access or make small repairs.

10.0 ESTIMATED QUANTITIES

The quantity of material involved for the construction of North-East Dike is presented in the table below. These quantities are extracted from the 3D model developed for the design based on assumptions SNC-Lavalin made for the foundation.

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Table 10-1: Quantity estimation for the construction of NE Dike

ITEM	UNIT	QUANTITY
Site clearing - dike footprint	m^2	15,600
Trench excavation	m^3	12,000
Rockfill (including safety berm)	m^3	36,000
Coarse filter	m^3	3,120
Fine filter	m^3	2,520
Bituminous Geomembrane	m^2	3,840
FFAB	m^3	1,440

11.0 CLOSURE

The closure plan consists of the removal of the NE Dike after its design service life of about 2 years and the re-use or disposing the materials as outlined below.

Materials to be re-used

The following materials should be used elsewhere on the project as they are removed to minimize double handling or should be stockpiled at the location of the nearest construction site where they will be used. Removal of the fine and coarse filters shall be carried out with care to minimize cross-contamination.

1. Rock fill
2. Coarse and fine filters.

It should be pointed out that even if mixed during their removal, the filters could be used as filler in a rock fill or for road surfacing.

Materials to go to waste dump

1. BGM;
2. Fine filter contaminated with FFAB

12.0 CONCLUSION

1. The design of the NE Dike was completed to the detailed engineering level in accordance with codes and standards used by the profession.
2. The NE Dike is classified as “significant” according to the CDA guidelines (2013, 2014). Consequently, it has been designed to safely accommodate a flood event with a return period of between 100 and 1,000 years.
3. The water elevation in the NE Pond will be controlled by pumping to keep it at a minimum level. An operational design flood with a 10-yr return period is used to design the pumping station. In case of a larger return period event, water will spill towards Nemo Lake without impacting the integrity of the NE Dike.
4. Site-specific thermal analyses have not been conducted for the NE Dike, but based on the results of the analyses performed for the WRSF Dike which has a comparable feature; the fine filter amended with bentonite (FFAB) component of the hydraulic barrier will not be subject to freeze-thaw cycles.
5. Seepage and stability analyses have not been carried out since the integrity of the dike is not considered to be an issue due to the fact that the pond will be pumped and the dike has a limited height.

13.0 PERSONNEL

This report has been prepared by Mr. Getahun Haile, M.A.Sc,, P.Eng, with contributions by Mr. Mathieu Durand-Jezequel Jr. P.Eng and Ms Angie Arbiaza , M.A.Sc,, P.Eng.

We trust that this report is to your satisfaction. Should you have any question, please do not hesitate on contacting the project manager. .

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Permit To Practice

Mining & Metallurgy

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14.0 REFERENCES

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APPENDIX A

TECHNICAL SPECIFICATIONS OF NORTH-EAST DIKE

TITRE: **TECHNICAL SPECIFICATIONS**
CONSTRUCTION OF THE NORTH-EAST DIKE

CLIENT: AGNICO-EAGLE MEADOWBANK DIVISION

PROJECT: DETAILED ENGINEERING OF WATER MANAGEMENT AND GEOTECHNICAL INFRASTRUCTURE AT WHALE TAIL MINE

PREPARED BY : Getahun Haile, P.Eng

REVIEWED BY : Yohan Jalbert, P.Eng

APPROVED BY : Yohan Jalbert, P.Eng

PERMIT TO PRACTICE : Denise Leahy, P.Eng

Index of revisions

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00	GH	YJ	2018-07-12	All	Issued for construction
01	GH	YJ	2018-07-25	All	Issued for construction

INSTRUCTION TO PRINT CONTROL: (Indicate X where applicable)

☐ Entire Specification revised. Reissue all pages

☐ Reissue revised pages only

STAMP THE SPECIFICATIONS AS FOLLOWS:

☐ Released for internal revision

☐ Issued for comments and approval

☐ Released for bid

☒ Released for construction (installation specifications only)

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1.0 WORK DESCRIPTION

1.1 Description of the Project

Agnico Eagle Mines Limited, Meadowbank Division ("Agnico Eagle") will be developing the Whale Tail Pit, a satellite gold deposit, as a continuation of current mine operations and milling at the Meadowbank Mine. The Whale Tail property is a 408 km² site located on Inuit Owned Land, approximately 150 km north of the Hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Mine in the Kivalliq region of Nunavut. The property was acquired by Agnico Eagle in April 2013.

The Meadowbank Mine is an approved mining operation and Agnico Eagle extends the life of mine with the Whale Tail Pit project. The North-East Dike (NE Dike) is located just north of the future Whale Tail Pit, across a depression on the watershed divide between that of the pit and the Whale Tail Lake (north basin) as shown on Figure 1-1. The NE Dike is a temporary infrastructure that will be built to prevent runoff from the Whale Tail Lake (north basin) reporting into the Whale Tail pit. The upstream slope of the dike, whose main body will be composed of rockfill, will be lined with bituminous geomembrane (BGM), anchored at its toe in a layer of fine filter amended with bentonite (FFAB); the latter placed in a key trench.

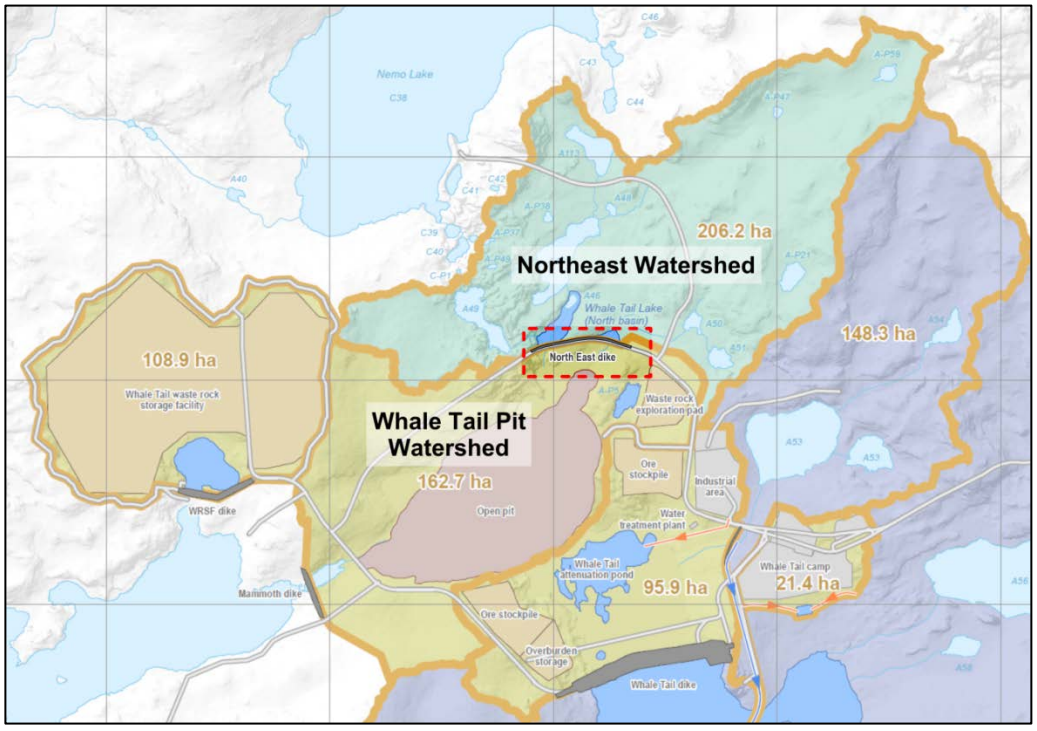


Figure 1-1: Watershed of the NE Dike

1.2 Work Included

The work shall include mobilization of all necessary equipment and materials as well as providing supervision, technical personnel (including surveyors) and skilled labour for its execution.

A detailed work procedure outlining how to execute the earthworks and the installation of the BGM liner keyed into the FFAB layer at bottom of the key trench shall be prepared by the Contractor for approval by the Owner and the Designer.

The Work includes but is not limited to the following items:

1. Site preparation including snow, ice and boulder removal and proper disposal;
2. Key trench excavation,
3. Fill placement before and after BGM installation on the upstream slope of the dike, including the FFAB on the bottom of the key trench;
4. Installation of BGM keyed into the FFAB;
5. Sampling and testing.

If judged necessary by the QA Inspector, the QC Representatives or the Owner, additional tests will be performed by an external laboratory.

1.3 Instrumentation

Not required

1.4 List of drawings

The list of drawings is provided in the following Table 1-1 and the drawings are included in Appendix 1.

Table 1-1: List of Drawings

DRAWING NO	TITLE
651298-7000-4GDD-0000	GENERAL ARRANGEMENT PLAN
651298-7000-4GDD-0001	GENERAL ARRANGEMENT PLAN
651298-7000-4GDD-0002	GENERAL ARRANGEMENT PLAN WITH FIELD INVESTIGATION
651298-7000-4GDD-0003	NE DIKE WITH FIELD INVESTIGATION PLAN AND SECTION
651298-7000-4GDD-0004	NE DIKE DESIGEN PLAN
651298-7000-4GDD-0005	NE DIKE DESIGN SECTIONS AND DETAILS

2.0 GENERAL

2.1 Unit system

Unless indicated otherwise, all Whale Tail Project's coordinate and elevations are tied to the UTM Zone 14, NAD83 (CSRS), and the metric unit system (SI) is used.

2.2 Codes and Standards

1. The standards applicable to the NE Dike for soils are provided in the following Table 2.1.
2. The standards applicable for the BGM are provided in Appendix 2.
3. The main standard applicable for sodium bentonite is given in Section 3.3.4.

Table 2-1: Standards

Test	Latest Standard
Water (Moisture) Content	ASTM[1] D2216 - Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock.
Wet Preparation of Soil Samples	ASTM D2217 Standard Practice for Wet Preparation of Soil Samples for Particle Size Analysis and Determination of Soil Constants.
Particle Size Analysis	ASTM D422 - 63(2007), Standard Test Method for Particle-Size Analysis of Soils.
Compacted Dry Density of Soil-Standard Proctor	ASTM D698-Standard Practice for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m^3)
Compacted Dry Density of Soil-Modified Proctor	ASTM D1557-Standard Practice for Laboratory Compaction Characteristics of Soil Using Modified Effort (2700 kN-m/m^3)
In-Situ Dry Density of Soil	ASTM D1556-Standard Test Method for Density and Unit Weight of Soil in-Place by the Sand-Cone Method.

2.3 Stakeholders

1. Agnico Eagle is the Owner and is responsible for overseeing the execution and coordination of the entire work. Agnico Eagle will also be responsible for the supply of rockfill as well as all instrumentation (where required).
2. SNC-Lavalin Inc. (SLI) will act as the Quality Assurance (QA) Engineer.
3. KCG is the Contractor for the entire work;
4. GHB will be responsible for Quality Control (QC),

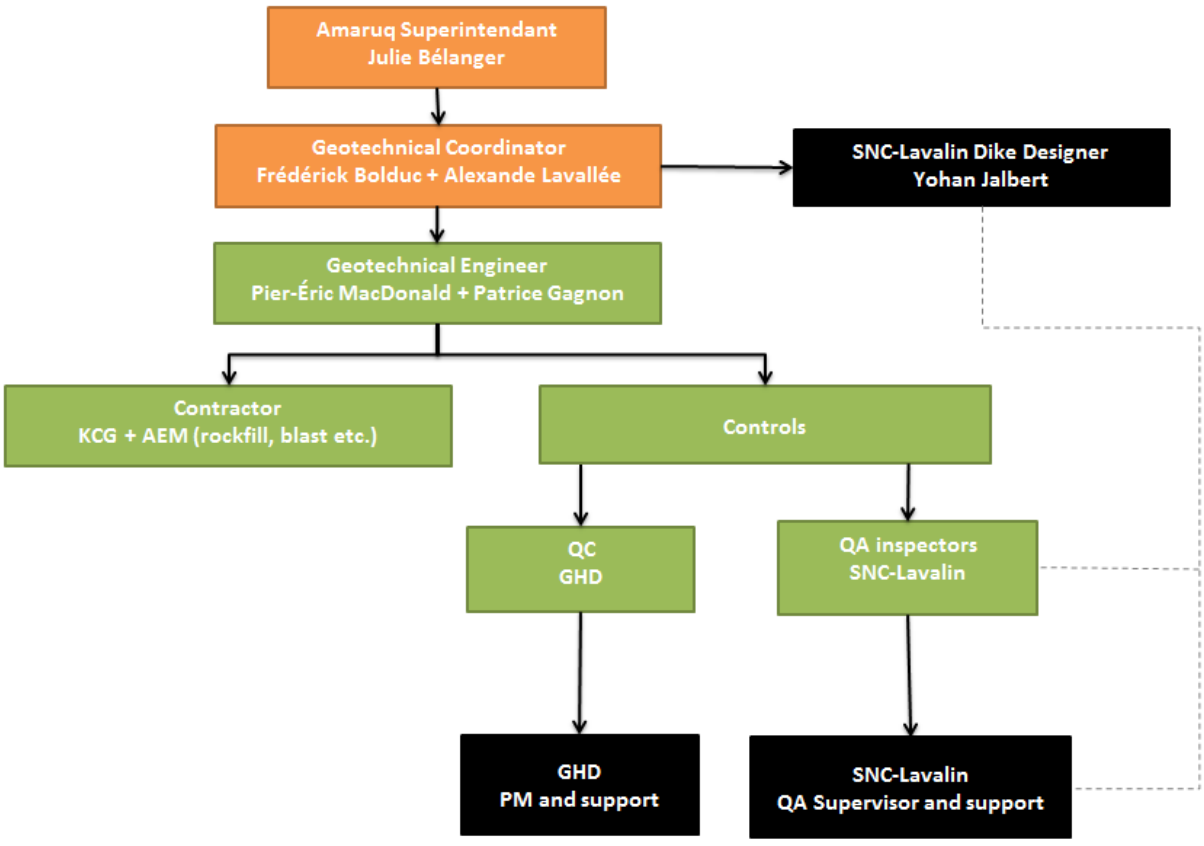
1 ASTM = American Society for Testing and Materials

5. Agnico Eagle and its sub-contractor will be responsible for Quality Control (QC) during BGM installation.

2.4 Line of communication

The line of communication basically follows the organizational chart shown on Figure 2-1 below.

Figure 2.1: Organizational Chart



2.5 Scope of Responsibilities

The responsibilities of each stakeholder are defined as follows:

2.5.1 Geotechnical Engineer (Agnico Eagle)

- Primary point of contact for the Designer, QA Inspector, QC representatives and the Contractor.
- Review work and monitoring of construction.
- Share data with QA Inspectors and QC representatives including but not limited to layout, scope limit control and data collection for as-built drawings and report.
- Review quantities.
- Coordination, daily interaction with QA and QC personnel.
- Follow-up and update the construction schedule. Confirm the waste disposal area.
- Plan or approve platforms to stockpile material.
- Responsible of the health and safety and Environmental issues on site.

2.5.2 Quality Control Representative (GHD, a subcontractor of Agnico Eagle)

- Inspection and documentation of work procedures to ensure the works meet the drawings (lines, grades) and the specifications.
- QC testing as required by the specifications (Appendices 2 and 3).
- Prepare daily report.
- Prepare approval forms.
- Work under the supervision of the Owner's Representative (Agnico Eagle Geotechnical Engineer) as applicable.
- Request additional testing when required.
- Review survey data.

2.5.3 Quality Assurance Inspectors (SLI)

- Inspection, documentation and review of QA work to ensure that the control meets the specifications and the Design.
- QA personnel may perform occasional independent checks. The Contractor shall co-operate during sampling and testing. Loading and disposal of sampled materials, when no longer required by the SLI, shall be carried out by others.
- Request additional testing when required and review of QC testing and procedures.
- Collect signed forms (approval and non-conformity forms) and give copy to the Owner's representative.
- Prepare QA report to be included in as-built report.

- Prepare as-built report, including testing results, drawings and reports.

2.5.4 Contractor (KCG):

- Construction of the North-East Dike in compliance with the requirements of the drawings and the specifications.
- Carry out all survey and stake out and provide all material volumes to the Owner's representative, QA Inspectors and QC representatives.
- Supervise all its sub-contractors.
- Share all collected data with Owner's representatives, QA Inspectors and/or QC representatives.
- Identify changes to be made in the design or drawings, collect information and share it with the Agnico Eagle Geotechnical coordinator.

2.5.5 Agnico Eagle Geotechnical Coordinator

- Identify changes to be made in the design or drawings, collect information and share it with the Designer.
- Communicate with the Designer for any technical questions or issues.
- Request a design change to the Designer and approve the estimation of hours.

2.5.6 Designer (SLI)

- Review documentation requested from the Contractor prior to the beginning of the Work.
- Be informed of the construction schedule and the advancement of the Work.
- Make design change(s) when required. Provide estimation of hours required to the Agnico Eagle Geotechnical Coordinator prior to initiate the design change.
- Send a sealed technical memorandum to the Owner's representative within appropriate timeframe to confirm the design change(s).

2.6 Work method and equipment

The Contractor shall submit to the Owner its working methods with the specific equipment and procedures he plans to use at least one month prior to the start of the work. The list of documentation to be submitted prior to the start of the work is provided in Section 2.13.

2.7 Subsurface conditions

There is no geotechnical drilling done at the site. However, from available mine exploration holes and experience at the site, the overburden, is inferred to be glacial till.

Drawing 651298-7000-40-4GDD-0003 shows the locations of the available mine drill holes as well as the approximate overburden thickness.

2.8 Lines, grades and tolerances

1. Lines and grades shall be obtained from the drawings presented in Appendix 1
2. Bench marks for the layout of the dike will be provided by the Contractor's surveyor..
3. The Contractor's surveyor shall be responsible for all staking and/other survey requirements such as lines and grades specified or shown on the drawings.
4. Lines and grades are subject to modifications by the Designer and/or the Owner (when justified) and additional lines and grades may be required as the work progresses. Tolerance on grades and lines is 0.1 m.
5. The Contractor shall use the applicable control points to complete the layout of all the works. If the Contractor judges that additional control points are necessary to execute the work adequately, he shall request Agnico Eagle for them..
6. If the Contractor or any of its subcontractors or any of their Representatives or employees move or destroy or render inaccurate any survey control point, such control point shall be replaced at the Contractor's expense.

2.9 Additional drawings

The Designer may provide additional drawing(s) if considered necessary. These drawings shall form part of the contractual document.

2.10 Land, lake, environment and infrastructure protection

1. The Contractor shall limit traffic to the boundary established by the Owner and his Representative.
2. Fires are not allowed on site.
3. The Contractor shall make sure that all personnel under his responsibility will do everything possible to protect the environment.
4. Unless approved by the Owner, once construction is completed it is not allowed to leave any fill material on the ice.
5. All frozen excavated materials must be disposed of as directed by the Agnico Eagle Geotechnical Engineer.

6. All excavated snow shall be disposed of at the location(s) approved by the Owner..

2.11 Site Cleanup

The Contractor is responsible for the cleanup and removal of garbage and other foreign materials from the construction site to the satisfaction of the Agnico Eagle Geotechnical Engineer.

2.12 Health and Safety

1. All construction work shall be conducted in accordance with Agnico Eagle's sustainable development and Health and Safety standards and regulations.
2. All personal protection equipment appropriate for the work shall be used by all workers.
3. Detailed work procedures for every construction task shall be provided by the Contractor and approved by the Agnico Eagle Geotechnical Engineer.
4. A Detailed Job Safety Analysis (JSA) shall be completed for each construction task and submitted by the Contractor to the Owner for approval.
5. A daily coordination meeting shall be held between the Contractor, QA and QC personnel and the Agnico Eagle Geotechnical Engineer to discuss planning and safety.

2.13 Documentation to be provided by the Contractor

At least thirty (30) days prior to the beginning of the Work, the following documents:

1. The location of the stockpile area he plans to use as well as the locations of borrow sources and access roads.
2. The proposed method and a list of specific tools and equipment which will be used during the excavation of the key trench.
3. The proposed method of fill placement for the various zones;
4. Proposed mixing method and locations of pad for the production of the FFAB;
5. A detailed schedule of the Work;
6. A detailed written procedure of water management during construction.

3.0 CONSTRUCTION MATERIALS

3.1 General

1. Only sound and suitable materials meeting the requirements of this document and approved by the QC and/or QA personnel shall be used.
2. Fill materials shall be free from all organic matter or other deleterious, unapproved, unstable or unsuitable materials, as ice and/or snow, till, or peat.
3. The placement of materials shall be done on a dry or snow and ice free surface.
4. Unless approved by the Agnico Eagle Geotechnical Engineer as well as supported by random inspections by the QC and/or QA personnel, all fill materials shall only be obtained from stockpiles or sources identified at the beginning of the construction works.
5. All materials shall be manufactured from good quality NPAG[2] rock.
6. Stockpiling, loading, and placement of fill materials shall be carried out in a way that minimizes segregation.

3.2 Definitions

7. "Sound" or "Suitable" fill materials are defined as being free from deleterious matter, having a gradation which permits compaction or placement to a stable state, and having the characteristics specified for the particular materials after handling, re-handling, processing, and reprocessing have taken place.
8. "Unstable" or "Unsuitable" fill materials are defined as being too wet, containing oversized or segregated particles, organic or other deleterious matter, such as ice or snow, or having poor characteristics which may result in undesirable settlement or other movement of the fill or within the fill, or otherwise not meeting the requirements of the specifications. However, this definition permits drying, dewatering, watering, screening, raking and any other processing or reprocessing to make the material stable and suitable prior to incorporating it into the fill.
9. BGM shall mean bituminous geomembrane which is also referred to as liner;.
10. FFAB shall mean fine filter amended with bentonite.

3.3 Material

3.3.1 Rockfill

The material to be used for the main body (shell) of the NE Dike and its safety berms, shall be a well graded crushed rock < 1000 mm (Material Type 3) from a quarry, pre-production or

[2] NPAG : Non potential acid generating.

production zone (runoff mine). Oversize rockfill up to 1500 mm is allowed in the exterior of the rockfill platforms. As much as possible, finer rockfill for the platforms shall be placed in the fill zone closer to the key trench. After placement, it shall meet the gradation limits specified below in Table 2-1.

Table 3-1: Rockfill gradation

Sieve (mm)	Passing (%)
1000	100
500	40-100
200	10-50
100	0-28
30	0-4

3.3.2 Coarse filter

The material to be used as a transition zone between the rockfill and the fine filter on the upstream slope of the NE Dike, also referred to as the coarse filter shall be a well graded clean granular fill (Material Type 2) produced by crushing rock (Material Type 3) and shall meet the gradation limits specified below in Table 3-2.

Table 3-2: Coarse filter gradation

Sieve (mm)	Passing (%)
200	100
100	60-100
30	20-57
10	5-32
4.75	0-24
2	0-17
0.850	0-12
0.425	0-10
0.150	0-8
0.075	0-7

3.3.3 Fine Filter

1. The material to be used for the fine filter (Material 1) of the NE Dike shall be produced by crushing rock (Material Type 3), shall meet the gradation limits specified below in Table 3-3.

Table 3-3 Fine filter gradation

Sieve (mm)	Passing (%)
30	100
10	51-88
4.75	30-64
2	17-41
0.850	11-27
0.425	9-18
0.150	7-13
0.075	6-10

3.3.4 Fine filter amended with bentonite (FFAB)

1. Mixed homogeneously with 6% (weight basis) of granular sodium bentonite, added mechanically or by other method(s) approved by the QC and/or QA personnel;
2. The bentonite shall be free flowing, high swelling, granular sodium bentonite, American Colloid Company, Volclay SG-40; Wyo-Ben, Evirogel-10; or equivalent. The bentonite shall have a free swell of at least 18cc/2 gm measured by ASTM Standard Test Method D-5890 and shall meet the following gradation shown on Table 3-4.

Table 3-4 Fine filter amended with bentonite gradation

Sieve Size	Percent Passing
10	100
20	60-100
200	0-20

3. This material shall be mixed in an area protected from wind and rain;
4. Only small stockpiles of this material are permitted to be produced in order to minimize the loss of fines by the wind and/or excessive particle segregation.

3.3.5 Bituminous geomembrane (BGM) Liner

1. "Bituminous geomembrane (BGM)" liner shall be Colentanche Product ES2 with a nominal thickness of 4.0 mm;
2. Rolls shall be stored in accordance with the supplier's specifications;
3. For each roll, the Contractor shall provide the Owner's Representative the following information:
    a. Identification label and shipping weights; it is important that the labels be durable to withstand shipping, unloading and temporary storage;
    b. Thickness, length and width;
    c. Manufacturer's approved QC stamp,
    d. ASQUAL[3] label;
4. The technical specifications from the manufacturer shall meet the minimum requirements presented in Appendix 2;
5. The Contractor shall demonstrate his ability to adequately weld seams and make patches on site under arctic winter conditions.

3.4 Site Quality Control/Quality Assurance QC/QA During BGM Installation

The Contractor shall follow the QC/QA Plan during BGM installation provided in Appendix 4. The QC/QA personnel or the Agnico Eagle Geotechnical Engineer may request additional tests to make sure that the installed BGM satisfies the specifications.

[3] ASQUAL : Assurance quality Label

3.5 Non-Conforming Materials

Where and when directed by the QC Representative or the QA Inspector, the Contractor shall excavate and/or remove all unsuitable materials to the designated spoil or dump.

4.0 EXECUTION OF WORKS

The Contractor's attention is drawn to the fact that the work will be executed (in part) during arctic winter and in a protected area (in an environmental context). Special care shall be taken to ensure the safety of all employees, to avoid damage to the land and breaking ice outside the designated working area.

4.1 Work method and sequence

1. The method of construction and the sequence of execution shall be adapted to conditions that may change often in order to minimize fill cross contaminations and foundation disturbance.
2. Heavy equipment traffic shall be adapted to site conditions that may change often so as to minimize surface disturbance and the formation of ruts in the work area. The Contractor shall restore disturbed areas as close as possible to the original condition to the satisfaction of the Owner.

4.2 FFAB test pads

The Contractor shall develop two test pads at least 4 m wide by 10 m long and 80 cm thick placed in two 30 cm followed by 50 cm compacted lifts using the FFAB as fill to establish the minimum number of compactor passes required with or without vibration to achieve a minimum dry density of 90% Standard Proctor Dry Density. The Contractor is free to choose the compaction equipment and test-pad location(s) including at the bottom of the key trench provided that he has the approval of the Agnico Eagle Geotechnical Engineer prior to realize the test pad construction. If they are built at the bottom of the key trench, they may be incorporated into the work provided that the Contractor has the approval of the Owner or its Representatives. The Contractor may use the Sand-Cone method or equivalent approved by the QC/QA personnel to monitor the degree of compaction. However, the Contractor shall have laboratory Standard and Modified Proctor compaction tests carried out on representative samples to fully define the moisture content vs dray density curves for used in test pad performance monitoring.

The FFAB of the test pads shall be compacted with the same equipment that will be used to construct the FFAB liner at the bottom of the key trench of the NE Dike. A total of eight (8) passes without vibration shall be performed over the entire surface of the first 30 cm thick lift. Once compaction is complete, the QC Representative shall take two (2) density measurements, separated by 2 m at a depth of 15 cm. During the second 50 cm lift to be compacted without vibration, the QC Representative shall measure the layer's density after every 2 passes over the entire surface of the pad. Density readings must be separated by 2 meters and taken at a depth of 25 cm. Once a total of 16 passes for the two layers have been completed, the density data and the number of pass shall be submitted to the Designer. A second test pad shall be built using the same compaction process but with vibration only.

Once both test pads have been constructed, the data will be processed and the minimum number of compactor passes with or without vibration needed for the job will be selected and submitted to the Agnico Eagle Geotechnical Engineer for approval. This approach is designed to eliminate the need for compaction testing during dike construction.

4.3 Site preparation

4.3.1 General

1. The Contractor shall remove snow, ice and boulders within the NE Dike footprint area prior to any fill placement and shall keep the work area dry.
2. The QC Representative may occasionally request that additional soil stripping and removal of snow and ice be carried out from areas outside the dike footprint shown on the drawing.
3. The material removed shall be stockpiled separately in areas approved by the Agnico Eagle Geotechnical Engineer.
4. The prepared foundation shall be approved by Agnico Eagle Geotechnical Engineer and/or QC/QA personnel prior to fill placement. All survey, approval and visual inspection forms prepared by the Agnico Eagle Geotechnical Engineer and QC/QA personnel, shall be signed by all.

4.3.2 Access Roads

1. The Contractor shall use in a proper manner the access road that leads to the construction site.
2. If required, the Contractor shall submit to the Agnico Eagle Geotechnical Engineer full details of all temporary construction roads, ramps and access planned for the construction. Details related to these temporary works shall include location, alignment, required safety berm or traffic signs, period of use; materials used and plan for their removal.
3. The Contractor shall maintain in good condition all existing or new access roads used for the execution of the work such as the access roads connecting the work area to stockpiles and waste dump areas, to the satisfaction of the Agnico Eagle Geotechnical Engineer.
4. All temporary access roads shall be constructed on top of the existing ground. No stripping or excavation shall be undertaken unless approved by the Agnico Eagle Geotechnical Engineer.
5. The Contractor shall supply and install all required traffic signs and safety equipment to ensure worker safety on the construction site for the complete duration of the work.

6. Access road maintenance shall be planned and executed in such a way that worker safety is not compromised. Access roads shall be kept clean of snow and if required, sprinkled with abrasive materials such as gravel to the satisfaction of the Agnico Eagle Geotechnical Engineer.
7. Once the construction work is complete, all temporary access roads shall be removed and the material disposed of as directed by the Agnico Eagle Geotechnical Engineer.

4.4 Water management during construction

The Contractor shall be responsible for the construction of temporary swales, ditches, and sumps and be equipped with all the necessary pumps, hoses, and other equipment needed to maintain excavations dry, for the complete duration of the work and to the satisfaction of the Agnico Eagle Geotechnical Engineer. Unless approved by the Agnico Eagle Geotechnical Engineer, the pumped water shall be discharged into the attenuation pond[4] prior to be treated. However, a detailed written procedure of water management during construction shall be submitted to Agnico Eagle's Geotechnical Coordinator for approval prior the work.

4.5 Foundation preparation

4.5.1 General

Foundation preparation involves making sure that the footprint of the NE Dike is free of snow, ice, boulders and any other deleterious materials or soft pocket at all times during the first layer fill placement regardless of the type or fill zone.

4.5.1 Key trench and excavation

1. The key trench excavation shall be carried out at the end of the thawing season around the end of September so as to avoid the need for drilling and blasting of potentially frozen overburden;
2. Final key trench depth as well as longitudinal and lateral dimensions shall meet those shown on the drawings and shall be approved by the Agnico Eagle Geotechnical Engineer and the QC/QA personnel.
3. Excavated materials shall be set aside separately or stockpiled in areas approved by the Agnico Eagle Geotechnical Engineer.
4. The QC/QA personnel may, from time to time, request additional excavation.
5. The key trench shall be dewatered (if applicable) prior to any backfilling. Snow and/or ice have to be completely removed from the bottom of the key trench before any fill

4 See Drawing 651298-7000-4GDD-0001

placement to the satisfaction of the Agnico Eagle Geotechnical Engineer and/or the QC/QA personnel.

6. Spoil snow and/or ice must be stockpiled in areas allowed by the Agnico Eagle Geotechnical Engineer.

4.6 Stockpile and disposal areas

1. A temporary stockpile area may be developed near the NE Dike if the Contractor has the Agnico Eagle Geotechnical Engineer approval.
2. However, unless authorized otherwise, all stripped material including snow, ice and soil shall be disposed of in the waste disposal area(s) designated by the Agnico Eagle Geotechnical Engineer. During the construction, any other waste disposal area requires prior written authorization by the Agnico Eagle Geotechnical Engineer.
3. The Contractor shall develop its stockpiles to facilitate drainage and minimize fill segregation

4.7 Fill placement and compaction

4.7.1 General

The Contractor shall prepare the surface to be filled, load, unload and handle the fill in such way that segregation and loss of fines are limited and shall meet the requirements of Section 3.0;

4.7.2 Rockfill (0-1,000 mm)

1. The Contractor shall sort out boulders bigger that 1,000 mm prior to fill placement; boulders up to 1500 mm may be pushed to the downstream shoulder of the dike;
2. The Contractor may use a dozer or any other suitable equipment to place this material;
3. As much as possible, the finer rockfill shall be placed on the upstream slope side of the dike which will support the BGM;
4. The maximum allowable lift thickness is 2.0 m prior compaction;
5. Haul trucks shall dump their load on horizontal surface and not in the slope to limit fill segregation and the formation of voids;
6. Great care shall be taken to limit particle segregation during placement. Occasionally the QC and/or QA personnel may request the Contractor to modify his construction procedures to meet this requirement;
7. The Contractor shall compact each lift with at least 4 passes of a heavy dozer or equivalent as well as manage construction equipment traffic to promote additional compaction with tires and tracks on all surfaces.

8. Placement and compaction of fill must be performed to the satisfaction of the QC and QA personnel.

4.7.3 Coarse Filter

1. The Contractor shall avoid excessive handling of the coarse filter to prevent particle segregation;
2. The coarse filter may have to be placed in freezing temperatures. Any snow and ice accumulated on the previous lift shall be removed before placement of the new lift.
3. Each lift shall be placed with an excavator bucket and great care must be taken to limit particle segregation during placement. Occasionally the QC and QA personnel may ask the Contractor to modify his construction procedure to meet this requirement;
4. This material shall be compacted with an excavator bucket and approved by the QC and QA personnel;
5. The coarse filter shall not be sprayed with water during compaction.
6. Placement and compaction of the fill must be performed to the satisfaction of the QC and QA personnel.

4.7.4 Fine filter

1. The fine filter is used as bedding for and cover on the BGM except where the latter is keyed in the FFAB layer at the bottom of the trench;.
2. The Contractor shall avoid excessive handling of this material to prevent particle segregation and loss of fines.
3. The layers below and above the liner in the slope shall have a minimum loose thickness of 0.50 m;
4. The fine filter above the FFAB layer in the key trench bottom, shall have a minimum compacted thickness of 0.50 m;
5. Each lift must be placed with an excavator bucket and great care must be taken to limit particle segregation during placement. Occasionally, the QC and/or QA personnel may ask the Contractor to modify its construction procedure to meet this requirement.
6. This material must be compacted with the excavator bucket and approved by the QC and QA personnel;
7. The material shall not be sprayed with water during compaction.
8. Placement and compaction of this material shall be carried out to the satisfaction of the QC and QA personnel.

4.7.5 Fine filter amended with bentonite

1. The Contractor shall mix the materials near the construction site and following a pre-approved procedure by the QC and QA personnel. The mixing procedure shall be adjusted depending on wind direction and/or intensity so as to minimize bentonite loss.
2. The Contractor is not allowed to pre-mix and stockpile the FFAB.
3. The Contractor shall proceed with the mixing process in such way that the material can be placed immediately without requiring double handling.
4. The Contractor is responsible for planning the mixing process to respect the construction schedule.
5. The FFAB shall have a minimum compacted thickness of 0.8 m built in two layers: 0.3 m for the first (bottom) layer and 0.5 m for the second (top) one.
6. Each lift must be placed with an excavator bucket and great care must be taken to limit fine losses of bentonite powder due to wind and/or particles segregation during placement. Occasionally the QA and QC Representatives may ask the Contractor to modify his construction procedure to meet this requirement.
7. Each lift must be compacted with the minimum number of passes which will be determined following the completion of the test pad work outlined in Section 4.2
8. FFAB shall not be sprayed with water during compaction.
9. Placement and compaction of the fill must be performed to the satisfaction of the QC and/or QA personnel.

4.7.6 Bituminous geomembrane (BGM)

1. The Contractor shall store, handle, roll-out, place, and weld the BGM in accordance with the manufacturer's specifications included in Appendix 2.
2. The Contractor shall roll-out the BGM vertically or horizontally provided that bottom panels are fully supported / buried in the key trench.
3. The BGM shall be free of folds before it is covered with fill. Cutting and patching may be performed to meet this requirement;
4. All welding and reparation work shall be carried out under the supervision of an experienced and certified technician and in the presence of the QC and/or QA personnel.
5. The Contractor shall take all necessary precautions to ensure that the BGM is not accessed by construction equipment tracks. A minimum soil cover of 0.5 m must be

provided over the liner before it could be accessed by construction equipment tracks after QA/QC approval.

6. No fill material shall be placed over the BGM prior to approval by the QC and/or QA personnel.
7. Patch dimensions shall overlap all defects by at least 20 cm.

4.8 Thermistor strings

Not required

5.0 QUALITY CONTROL AND QUALITY ASSURANCE PROGRAM

1. QC / QA approval form is presented in the appendix 5 and tasks for QC / QA are presented in Appendix 4.
2. The Contractor shall be entitled to be represented during all field tests carried out by the QC Representative in order to determine whether fill materials meet the requirements of the Specifications.
3. The QC Representative will notify the Contractor of any such tests but the QC Representative shall not be required to wait for the arrival of the Contractor prior to the start of the test.
4. The Contractor shall provide assistance when required for collecting and handling the samples.
5. Sampling or testing required by the QC Representative shall be executed by the Contractor without delay. All samples and tests shall be taken or performed in accordance with the appropriate standard, approved by the QC Representative, and shall meet the requirements of the present document.
6. Visual inspections of excavation and sources of imported fills will be carried out by the QC Representative on a regular basis to ensure that the excavation work and fill materials meet the requirements of the document.
7. Full time visual inspection during BGM welding will be carried out by the QC Representative to ensure that the welding meets the design requirements.
8. Samples of the BGM shall be taken and kept for a minimum of 6 months;
9. Maximum tensile strength tested on the BGM (ASTM D 7275) shall meet the requirement of manufacturer's specification included in Appendix 4. Vacuum tests shall be done by maintaining a minimum pressure of -200 to -400 mbar for 15 seconds;
10. The QC report on the BGM installation shall include a plan view with defect and patch locations, panel number associated with each roll, seam locations, and other relevant information.

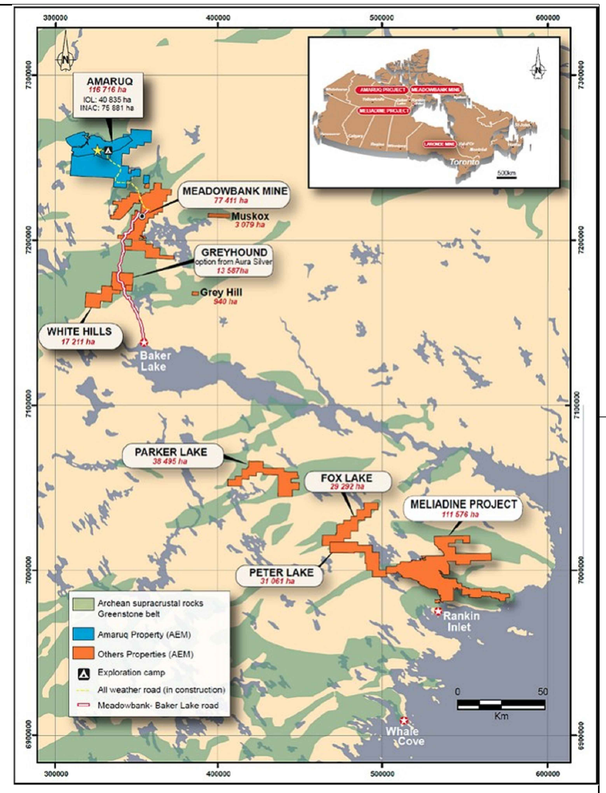
APPENDIX 1

Drawing of NE Dike

AGNICO EAGLE – MEADOWBANK DIVISION

WHALE TAIL PROJECT

DRAWING No.	TITLE	REVISION	DATE
651298-7000-4GDD-0000	LOCATION MAP AND DRAWING INDEX	01	2018-07-24
651298-7000-4GDD-0001	GENERAL ARRANGEMENT PLAN	01	2018-07-24
651298-7000-4GDD-0002	GENERAL PLAN - FIELD INVESTIGATION LOCATIONS	01	2018-07-24
651298-7000-4GDD-0003	NORTH EAST DIKE - PLAN WITH FIELD INVESTIGATION LOCATIONS	01	2018-07-24
651298-7000-4GDD-0004	NORTH EAST DIKE - DESIGN PLAN	01	2018-07-24
651298-7000-4GDD-0005	NORTH EAST DIKE - DESIGN SECTIONS AND DETAILS	01	2018-07-24



KEY PLAN

ISSUE No	REV.	DATE (Y/M/D)	PURPOSE OF ISSUE
04	01	2018-07-24	ISSUED FOR CONSTRUCTION
03	00	2018-07-13	ISSUED FOR CONSTRUCTION
02	PB	2018-07-09	ISSUED FOR CLIENT COMMENTS
01	PA	2018-07-06	ISSUED FOR INTERNAL COMMENTS

ISSUE REGISTER

ISSUE No	REV.	DATE (Y/M/D)	PURPOSE OF ISSUE

ISSUE REGISTER

No	REVISION DESCRIPTION	DATE (Y/M/D)	*	**
01	TITLE CHANGE (WHALE TAIL PROJECT)	2018-07-24		

INITIALS: * DESIGNED ** APPROVED

REVISION REGISTER

No

REFERENCE DRAWINGS

PROFESSIONAL SEAL

G. Haile 33063 Ingénieur – Engineer

2018-7-24

D-Y JALBERT 100155 REGISTERED PROFESSIONAL ENGINEER NWT/NU

2018-7-24

PERMIT TO PRACTICE
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Signature _____ P.Eng.
Date 2018-07-24
PERMIT NUMBER: P 260
The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU

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SCALE N.T.S.	

CLIENT
AGNICO EAGLE

PROJECT
AGNICO EAGLE – MEADOWBANK DIVISION
WHALE TAIL PROJECT

TITLE
LOCATION MAP AND DRAWING INDEX

PROJECT No	SUBDIVISION	SUBJECT	SERIAL	REV.
651298	7000	4G DD	0000	01

A1-HOR-FRAME-EN (SI)

LAST SAVE: 2018/07/24 – 4:12pm
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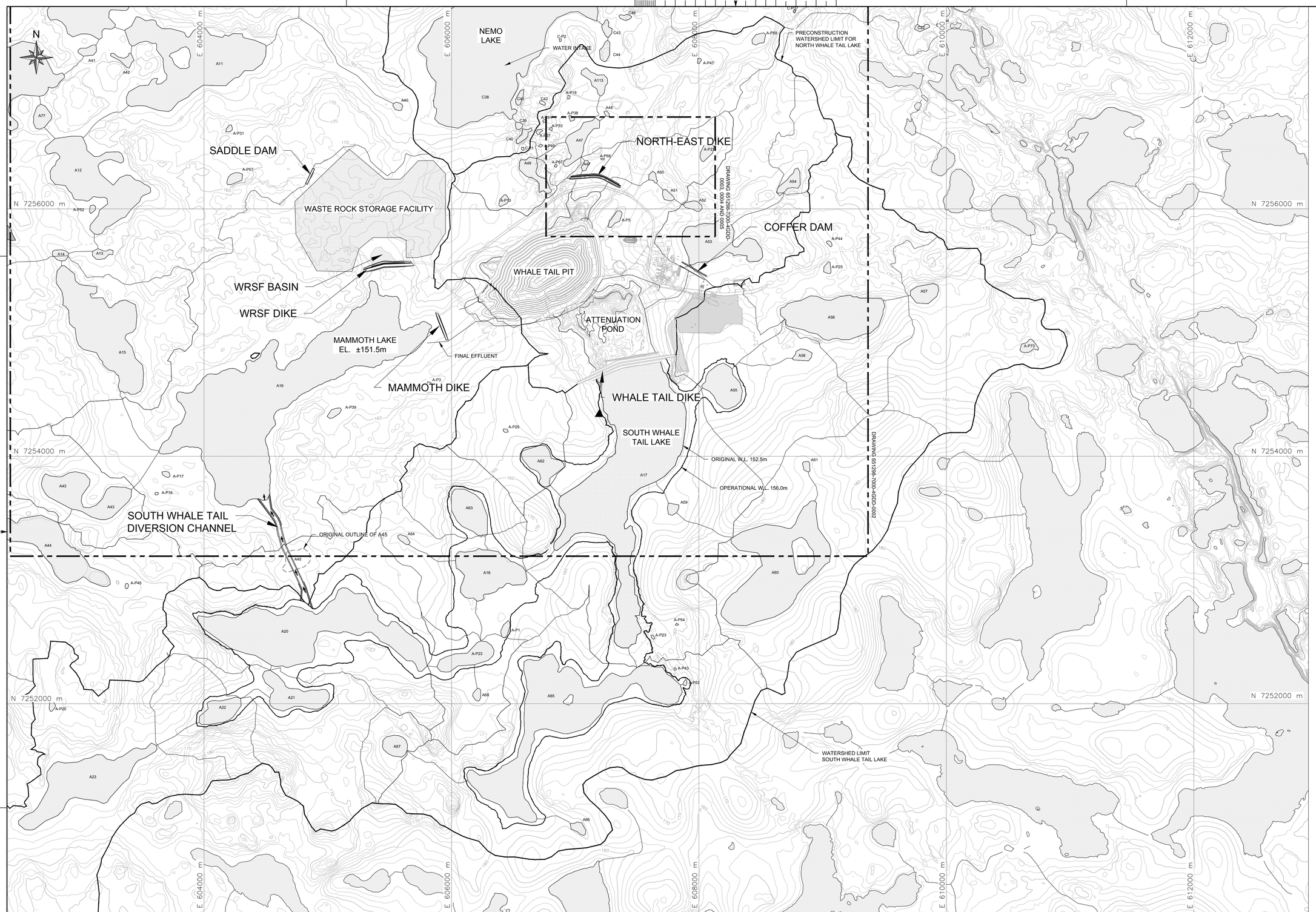

LEGEND

- NATURAL WATERSHED
- POND OR FLOODED AREA AT SOUTH WHALE TAIL LAKE
- ARCHAEOLOGICAL SITE
- ARCTIC FOX HABITAT (D&N & NEC.2015)

NOTES:

1. THIS DRAWING ILLUSTRATES THE GENERAL ARRANGEMENT OF THE WRSF DIKE.
2. ALL ELEVATIONS AND COORDINATES ARE IN METERS.
3. WORKS SHOWN ON THIS DRAWING SHALL BE EXECUTED IN ACCORDANCE WITH THE APPLICABLE TECHNICAL SPECIFICATIONS.

ISSUE REGISTER

ISSUE No	REV.	DATE (Y/M/D)	PURPOSE OF ISSUE
04	01	2018-07-24	ISSUED FOR CONSTRUCTION
03	00	2018-07-13	ISSUED FOR CONSTRUCTION
02	PB	2018-07-09	ISSUED FOR CLIENT COMMENTS
01	PA	2018-07-06	ISSUED FOR INTERNAL COMMENTS

ISSUE REGISTER

ISSUE No	REV.	DATE (Y/M/D)	PURPOSE OF ISSUE

REVISION REGISTER

No	REVISION DESCRIPTION	DATE (Y/M/D)	*	**
01	TITLE CHANGE (WHALE TAIL PROJECT)	2018-07-24		

INITIALS: * DESIGNED ** APPROVED

REFERENCE DRAWINGS

No	
6	6112-000-210-001_RC RECIEVED ON 2017-03-16
5	AMARUQ_UTMWF_03132017 REVCEIVED ON 2017-03-14
4	GOLDER GENERAL WATERSHED CONFIGURATION RECEIVED ON 2015-01-13
3	LAKE ELEVATION RECEIVED FROM AEM AND SURVEYED ON AUGUST 2015
2	AMARUQ TOPOGRAPHY RECEIVED ON 2015-09-15
1	Amaruq Baseline Studies, Potentially Environmentally, Significant Features. Project: DA14-053-04. Dougan & Associates.

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2018-7-24

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2018-7-24

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DATE 2018-07-24	
SCALE 1 : 15 000	200 0 200 400 600m

CLIENT: AGNICO EAGLE

PROJECT: AGNICO EAGLE – MEADOWBANK DIVISION
WHALE TAIL PROJECT

TITLE: GENERAL ARRANGEMENT PLAN

PROJECT No	SUBDIVISION	SUBJECT	SERIAL	REV.
651298	6000	4G DD	0001	01

A1-HOR-FRAME-EN (SI)

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