SECTION 2 • REGULATORY SETTING

Waste management in Nunavut is regulated under the *Nunavut Public Health Act*, the *Nunavut Environmental Protection Act*, the federal *Environmental Protection Act,* and the federal *Transport of Dangerous Goods Act*. Agnico Eagle will also be bound by the forthcoming terms and conditions of its commercial lease with the Kivalliq Inuit Association and its Water Licence from the NWB.

In addition to mandatory requirements, a number of waste management guidelines are commonly used in the Northwest Territories and Nunavut. The most recent of these was developed for municipal solid waste and is titled: "*Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the NWT*" (Ferguson Simek Clark 2003). *Environmental Guideline for Industrial Waste Discharge into Municipal Solid Waste and Sewage Treatment Facilities* (GN 2011c) were also used. While not all of the recommendations provided in these guidelines are appropriate for the management of industrial waste expected at the proposed Project, principles considered applicable have been adopted in this Plan.

In addition, the Guidance for the Preparation of Waste Management Plans (Inuvialuit Water Board 2014) and the *Mine Site Reclamation Guidelines for the Northwest Territories* (INAC 2007) were followed regarding specific landfill design and mitigation for potential impacts pertaining to waste.

SECTION 3 • PLAN FOR THE ON-SITE DISPOSAL OF SOLID WASTE

3.1 Approach

Waste[1] at the proposed Project is divided into the following categories:

1. Domestic waste: general waste materials coming from the kitchen, cafeteria, lunch rooms, dormitories, and offices. Bins will be located in high traffic areas for segregating wastes destined for incineration, landfilling, or recycling.
2. Medical waste: medical waste generated in the first aid/health room will require special handling and will be placed in easily identifiable single use medical waste containers. Both the containers and its contents will be incinerated.
3. Industrial waste: waste arising from operations in the truck shop, explosive magazine, and warehouses. Each work area will have specially marked bins for segregating waste for incineration, recycling, or disposal. Special bins or areas will be set aside for hazardous waste. Large bulky items that cannot be incinerated will be prepared for shipment south for recycling, or be cleaned of any hydrocarbon contamination and have the electronics removed before disposal in the landfill.
4. Sewage: wastewater from the accommodation complex will be treated in the Sewage Treatment Plant before being directed to Whale Tail Attenuation Pond. Sewage sludge removed from the Sewage Treatment Plant will be added to the landfarm as nutrient amendment on an as needed basis. Excess sludge produced from the Whale Tail Camp will be disposed of in the Whale Tail Waste Rock Storage Facility.
5. Used oil and waste fuels: used engine oil, hydraulic fluids, and fuels that do not meet specifications for designated use will be stored and shipped south to an approved facility. It does not include solvents or paints. If it is found acceptable, the used oil and waste fuels will be consumed in Whale Tail Pit waste oil burners and if not used there will be transported to Meadowbank Mine and used in waste oil burners.
6. Hazardous waste: all hazardous materials will be packaged for shipment to a certified waste management company for treatment, recycling, and/or disposal; refer to the Hazardous Materials Management Plan for details. Hazardous wastes will not be placed in the proposed landfill.

[1] In accordance with the NWB, waste rock and overburden are also considered waste materials. The Whale Tail Pit Waste Rock Management Plan & The Meadowbank Mine Waste Rock and Tailings Management Plan, submitted as part of this application provides details on these wastes.

Waste management begins by keeping all materials that can be economically recycled out of the waste stream destined for the landfill or incineration. The three R's of waste management - reduce, reuse, and recycle - will be encouraged within the waste management program.

Reduce, reuse, and recycle initiatives will be developed at the Project to minimize the quantity of waste incinerated or directed to the landfill. To support this initiative, operating procedures will be developed to maximize the volume of materials that are recycled and/or reused. This will include eliminating the use of disposable materials where possible, and segregating waste destined for reuse, and recycle alternatives.

Minimizing or avoiding the creation of pollutants and wastes can be more effective in protecting the environment than treating or cleaning them up after they have been created (Environment and Climate Change Canada 2003). Waste management for the Project will include effort directed to eliminating, where practicable, the use of disposable materials in everyday use, such as disposable cups, plates, and table ware. Workers will be encouraged to use ceramic mugs and stainless steel cutlery in the cafeteria or lunch rooms, and to carry their personal drink container or thermos.

The strategy for the management of solid waste at the Project will be first to identify and segregate acceptable disposal items from non-acceptable items. Within the acceptable disposal items, the second step will be to segregate those items that can be economically recycled from those that cannot. This separation will be done at source by locating bins throughout the facilities for the collection of items suitable for recycling.

Organics or food waste generated at the Project will be segregated in all buildings, collected and stored in an enclosed space, and sent to the incinerator building for final segregation and incineration. The Energy and Infrastructures Department will be responsible for the collection, transport and incinerator processing of waste.

The development of the proposed landfill will minimize the area required for waste storage and re-handling of waste. Acceptable items that will be disposed of in the landfill will be those that are solid, non-salvageable, non-hazardous, non-putrescible, with a low leachate and low heat generation potential. Controlling the materials that can be placed in the landfill is a strategy aimed at reducing the concentration of constituents in potential leachate. The proposed landfill will conform to best management practices allowing for orderly landfill development, including covering of debris with waste rock, which will reduce the potential for windblown debris.

All solid wastes that may contain medical waste from the Medical Clinic, food waste, food packaging waste, or other organic waste that could attract wildlife will be incinerated. This will include all garbage from the accommodation complex, kitchen, lunchrooms, and offices. These will be stored on site in closed bin and sent to the incinerator twice a week. This waste will not be allowed to remain unattended in trucks at any time.

Hazardous waste and materials that can be recycled will be appropriately packaged (as per regulations under the *Transport of Dangerous Goods Act)* to be sent off-site to a licenced hazardous waste management facility or recycling facility, respectively. Management of hazardous materials is covered in detail in the Hazardous Materials Management Plan.

3.2 Acceptable Waste for Landfilling

The following materials will be acceptable for disposal in the proposed landfill:

- plastic (except expanded polystyrene);
- steel, copper, aluminum, iron (most of this metal is recycled);
- wood;
- fiberglass insulation;
- fiberglass;
- roofing;
- cardboard;
- concrete;
- carpet;
- bricks;
- ceramics;
- rubber;
- empty caulking tubes;
- hardened caulk;
- clothing;
- glass;
- wire;
- small appliances (with batteries removed);
- gyproc;
- ash provided it has cooled to 60ºC or less and follows procedures laid out in the Incinerator and Composter Waste Management Plan;
- composter output; and
- vehicles and machinery provided all liquids, grease, batteries, and electronics have been removed (see Section 3.3.2 for more details on ozone depleting substances).

3.2.1 Waste Asbestos[2]

Waste asbestos includes any type of material with greater than 1 % asbestos by weight (GN 2011a). Asbestos that has been immersed or fixed in a natural or artificial binder or included in a manufactured product is not considered waste asbestos; it is considered a hazardous waste and will be disposed of accordingly. Waste asbestos can either be backhauled off-site for disposal in an approved facility or it can be landfilled. The following are guidelines for landfilling waste asbestos:

- immediate burial and cover with 0.5 metres (m) of cover material;
- bury where it will not be disturbed; and
- the location should be maintained on a map or diagram for future reference.

In addition to following the *Environmental Guideline for the General Management of Hazardous Waste* (GN 2010a), Agnico Eagle will adhere to the Government of Nunavut's (GN) *Environmental Guideline for Waste Asbestos* (GN 2011a). Before landfilling waste asbestos, Agnico Eagle will review the steps in this guideline with the GN.

3.3 Unacceptable Waste for Landfilling

Materials that are not listed above in Section 3.2 are considered unacceptable for placement at the landfills, unless approved in writing by the Meadowbank Mine Environment Superintendent. The unacceptable materials include:

- organic matter including food, septic tank pumpings or sludge from waste water treatment, dead animals, paper;
- food containers and wrappings, unless cleaned;
- whole tires;
- hazardous waste including mercury, medical waste, batteries, solvents, glues, ethylene glycol antifreeze, adhesives (except empty caulking tubes);
- electronics;
- light bulbs or Fluorescent Lamp Tube;
- petroleum products, including materials contaminated with petroleum products; and
- expanded polystyrene.

In particular, organic material is not accepted in the landfill, thus eliminating the attraction to carnivores and/or raptors. This is accomplished by requiring all personnel to dispose domestic waste in designated bins and by sending all collected domestic waste (e.g., from kitchens and living quarters) to the site incinerator.

[2] It is unlikely that asbestos waste will result from materials purchased for mine operations. Agnico Eagle will avoid using asbestos wherever possible.

3.3.1 Fluorescent Lamp Tubes

Fluorescent tubes contain mercury phosphorus powder and traces of lead and cadmium, which are considered environmental contaminants under the Nunavut *Environmental Protection Act* (GN 2010b). The only disposal method for fluorescent tubes is through an approved hazardous waste recycling or disposal facility (GN 2003). Government of Nunavut guidelines on *Mercury-Containing Products and Waste Mercury* (GN 2010b) and E*nvironmental Guideline for the General Management of Hazardous Waste* (GN 2010a) are included in the Hazardous Materials Management Plan, respectively. These guidelines will be followed and wastes having mercury will be sent to a certified waste management company for treatment, recycling, and/or disposal.

3.3.2 Ozone Depleting Substances

Ozone depleting substances include chlorofluorocarbons or halons. Common sources include refrigeration equipment, air conditioning equipment, motor vehicle air conditioners, and fire extinguishing equipment (GN 2011b). These materials are hazardous in nature; consequently, all disposal of ozone depleting substances will take place at an approved facility.

Any non-salvageable equipment containing ozone-depleting substances will have the ozone depleting substances removed by a certified technician prior to disposal in the proposed landfill.

3.4 Total Volume of Waste

The number of people working on-site, and the activities occurring at the time, has a direct bearing on the volume of waste that will be sent to the proposed landfill, and the amount of materials removed from the waste stream for reuse and recycling. In addition, purchasing policies that focus on reduced packaging will have a bearing on the volume of waste.

An estimate of waste volume is required to determine the appropriate size of the landfill. However, an exact waste volume is not a critical parameter in the design because of the flexibility of design to accommodate extensions (larger to accept more waste) or contractions (smaller to accept less waste) within the Whale Tail WRSF.

As part of the larger waste management system, records will be kept of quantity of waste landfilled, type and quantity of materials recycled. All this information will be submitted to regulators in an annual report.

Table 3.1 Estimated Waste in Landfill

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

m^3 = cubic metre

SECTION 4 • LANDFILL CONSTRUCTION

Both the floor and berms around the proposed landfill will be constructed with rockfill and/or waste rock material. The area to receive waste will be bounded by a rock fill berm which will serve to confine the area for waste disposal and act as a wind shield to reduce windblown debris. They will have a rectangular shape with the length perpendicular to the prevailing wind direction so that much of the waste can be protected from wind by the rockfill berm. The design of the berms does not assume that they will be in a frozen state, or permanently impermeable to leakage.

Sub landfills will be built and buried according to the evolution of the WRSF. As mining progresses, the elevation and location of the sub landfills will change. The design of the landfill as presented in the Design Report submitted to the NWB as per Water Licence 2AM-WTP1826 Part D Items 1&2 is in Appendix A (Agnico Eagle, 2019). The location of the landfill will change for every 20m increase in elevation to allow access at all time of the landfill. Each landfill will respect the same specifications as the one in Appendix A. The proposed development sequence is presented in Appendix B (Agnico Eagle, 2019).

No alternative design was considered as the one built can be seen as the best practice for such facility in the Arctic.

SECTION 5 • LANDFILL OPERATION

5.1 Conceptual Operations Plan

The following is a conceptual plan for operating the landfill.

5.1.1 Materials Acceptable for Disposal

See Section 3.2.

5.1.2 Materials Not Acceptable for Disposal

See Section 3.3.

5.1.3 Site Development and Landfilling Method

The sub landfills will be filled progressively in an orderly manner. Specifically, waste will be placed at one end of the sub landfill at full height and then the active waste area progressively advances. Areas where the waste has been placed to full height and levelled, will be progressively covered by placement of a minimum 0.3 m thickness of waste rock fill on top of the waste.

5.1.4 Staffing and Equipment

The landfill will not require a full-time attendant during placement of material and maintenance of the landfill. Energy and Infrastructure department's roll off trucks will haul waste to the landfill and a dozer will be used to spread and level the waste.

5.1.5 Leachate Management

The leachate from the landfill is expected to be very weak (dilute) or simply absent due to the controls on materials placed in the landfills. Therefore, specific landfill leachate management is not required.

In the event there is leachate from the landfill during periods of heavy rainfall or spring freshet, the runoff will be collected in WRSF Pond and directed to the Whale Tail Attenuation Pond where it will be integrated as part of the water management plan and then, if necessary, treated before release to the receiving environment.

The quantity of leachate is expected to be minimal, and of low ionic strength. The proposed landfill will nonetheless receive precipitation during the summer period, which could infiltrate the landfill before it can evaporate. In the event that leachate reports from the landfill, it will be collected in the WRSF Pond and pumped to the Whale Tail Attenuation Pond for further management (see Water Management Plan). Based on the design strategy for the proposed landfill, and the management and operating procedures listed above, a liner is not considered necessary for the landfill.

In the event that greater volumes of leachate, or leachate with high ionic strength is found coming from the proposed landfill, an investigation will immediately be undertaken to determine the cause. This could lead to changes in the configuration and/or management of the landfill to further limit water coming in contact with landfill materials and/or modify the water management strategy in this area. Because the proposed landfill will be located in an area with underlying permafrost deep groundwater contamination from potential landfill leachate is not anticipated.

5.1.6 Protocol for Placement of Material

Waste will be disposed of directly on the pad and compacted with heavy equipment against the berm or existing row. When the sub landfill is either full of compacted waste, the waste will be covered with waste rock. A new sub landfill will be built, including rockfill berm to act as a wind shield.

Materials destined for burial in the demolition landfill will be dismantled as safely and efficiently as possible, stacked in a stockpile and will be cut by flame, hydraulic shears or saw, into manageable sizes for safe transport and placement in the landfill. The demolition debris will be placed in compacted layers and then buried. Once compacted, waste rock will be placed on the debris to infill voids. Once a continuous layer of waste rock has been covered the compacted debris a final cover of non-potentially acid generating (NPAG) waste rock will be placed over the entire landfill area.

5.1.6 Surface Water and Erosion Control

The slopes of the landfills will be covered with rockfill, thus protecting them from erosion. Any water that may runoff from the Whale Tail WRSF will flow to the WRSF Pond.

5.1.7 Inspections

The environmental department will conduct periodic inspections to ensure compliance with the regulations, permits and operational plans.

5.2 Conceptual Closure Plan

The following is a conceptual plan for closing the landfill.

5.2.2 Estimate of Total Waste Volumes, Tonnage and Life of Landfill

Upon closure, it is estimated that the landfill will have the volumes as described in Section 3.4.

5.2.3 Final Cover Design

The landfill will become encapsulated within the Whale Tail WRSF by surrounding and covering the facility with NPAG waste rock. The proposed landfill will be covered with NPAG waste rock (same thickness than surrounding cover for Whale Tail WRSF), and should thereafter be stable. When finalizing the design for the cover, the need for thermistors will be evaluated. The cover surface will

be left irregular so as to capture snow, windblown sediment, and plant seeds. Drainage water, if present will be naturally directed to the WRSF Pond, monitored and discharged.

5.2.4 End use of Landfill after Closure

There is no planned end use of the landfill post-closure because it will be part of the Whale Tail WRSF.

5.2.5 Water Management

Contact water from the proposed landfill at its closure will continue to be managed using best management practices in accordance with the Project's Interim Closure and Reclamation Plan.

SECTION 6 • TRAINING

All Agnico Eagle personnel and contractors working at the Project will be trained in waste management. This will be included in the site orientation upon arrival, which will include the identification of waste bins and dumpsters for the different categories of waste, where these are located, and the signage associated with each. Stewardship of the environment will be emphasized in that it is everybody's responsibility to properly dispose of waste, including wastes that can be recycled. This extends to ensuring wildlife does not have access to food or food wastes.

The success of the waste management system at the proposed mine site will be dependent on the proper disposal of all waste by all employees and contractors. Waste management training beyond the initial orientation will occur in each department. Environment department staff will reinforce proper waste segregation and disposal at various departmental meetings.

The Project's Energy and Infrastructures Department will have enhanced on-the-job waste management training as they will be collecting and processing all mine site waste. They will be trained in identifying misdirected waste, what to do with it, and in recommending where further waste management training is required on-site.

All maintenance staff must successfully complete equipment training before they can operate machinery and vehicles related to waste management on-site. Additionally, crews handling waste will be fully trained in safe work procedures. Training programs will include Workplace Hazardous Materials Information System (WHMIS) and transportation of dangerous goods. Training completion and retraining will be documented and tracked by the Project's Human Resources Department.

SECTION 7 • PLAN REVIEW AND CONTINUAL IMPROVEMENT

This Plan will be reviewed annually in consultation with the Landfill Inspector and Environment Coordinator. This Plan will be reviewed and updated every two years if required, to reflect changes in operations and/or technology. Improvements suggested through these reviews would be implemented in consultation with the regulators.

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APPENDIX A • WHALE TAIL LANDFILL DESIGN

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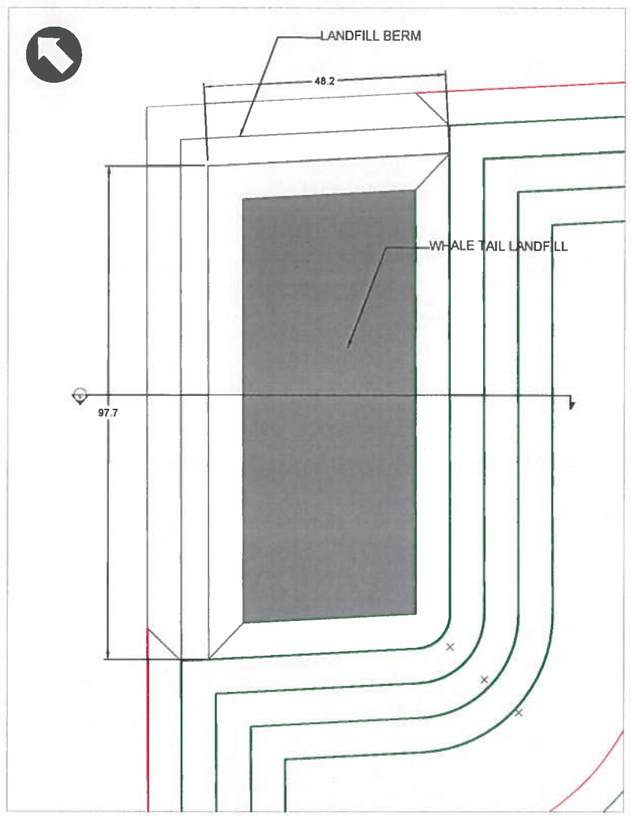

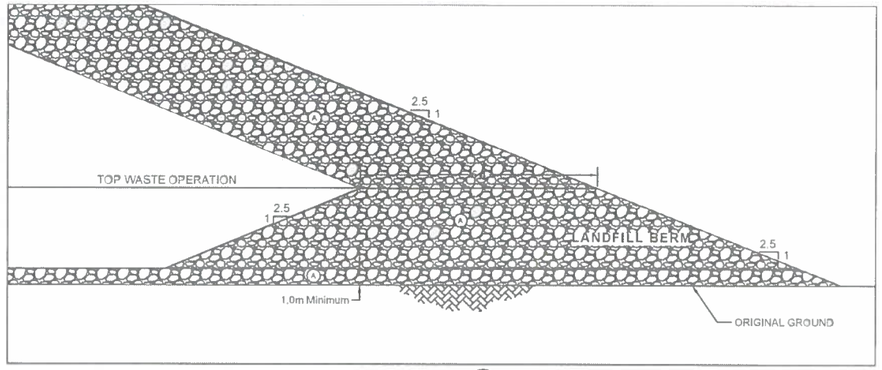

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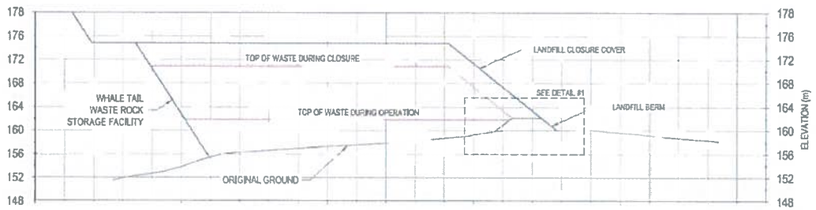

SECTION A
THROUGH LANDFILL (CLOSURE)
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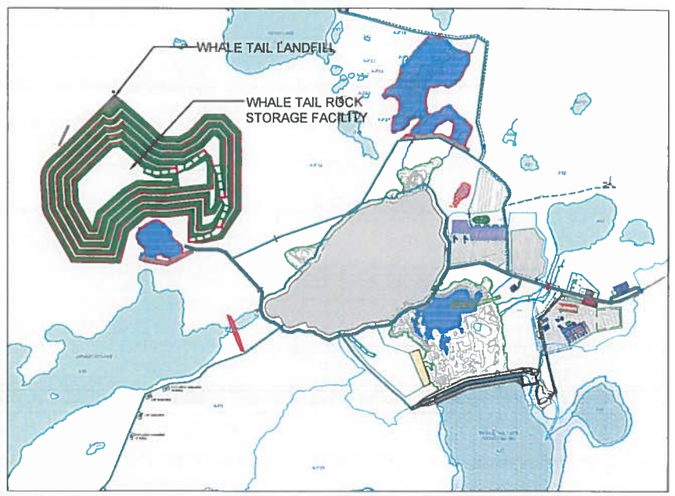

DESCRIPTION:

Ⓐ –PIT RUN : 0–600 MM NON POTENTIALLY ACID GENERATING OR METAL LEACHING WASTE ROCK

PLAN CLÉ
KEY PLAN

NOTES GÉNÉRALES / GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER
M.A.R. MORIN
LICENSEE
NT/NU

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT

REVISIONS

TITRE / TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
WHALE TAIL LANDFILL LAYOUT AND CROSS SECTIONS
60 DAYS NOTICE

DESSINÉ PAR / DRAWN BY: Antoine Laporte	DATE: 11/04/2019
VÉRIFIÉ PAR / CHECKED BY:	
APPROUVÉ PAR / APPROVED BY:	
ÉCHELLE / SCALE: NTS	DATE: 22/03/2019
NO. DESSIN / DRAWING NO.	
NO. PROJET / PROJECT NO.	REVISION: / FEUILLE / SHT: 1 / 1

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APPENDIX B • LANDFILL DEVELOPMENT SEQUENCE

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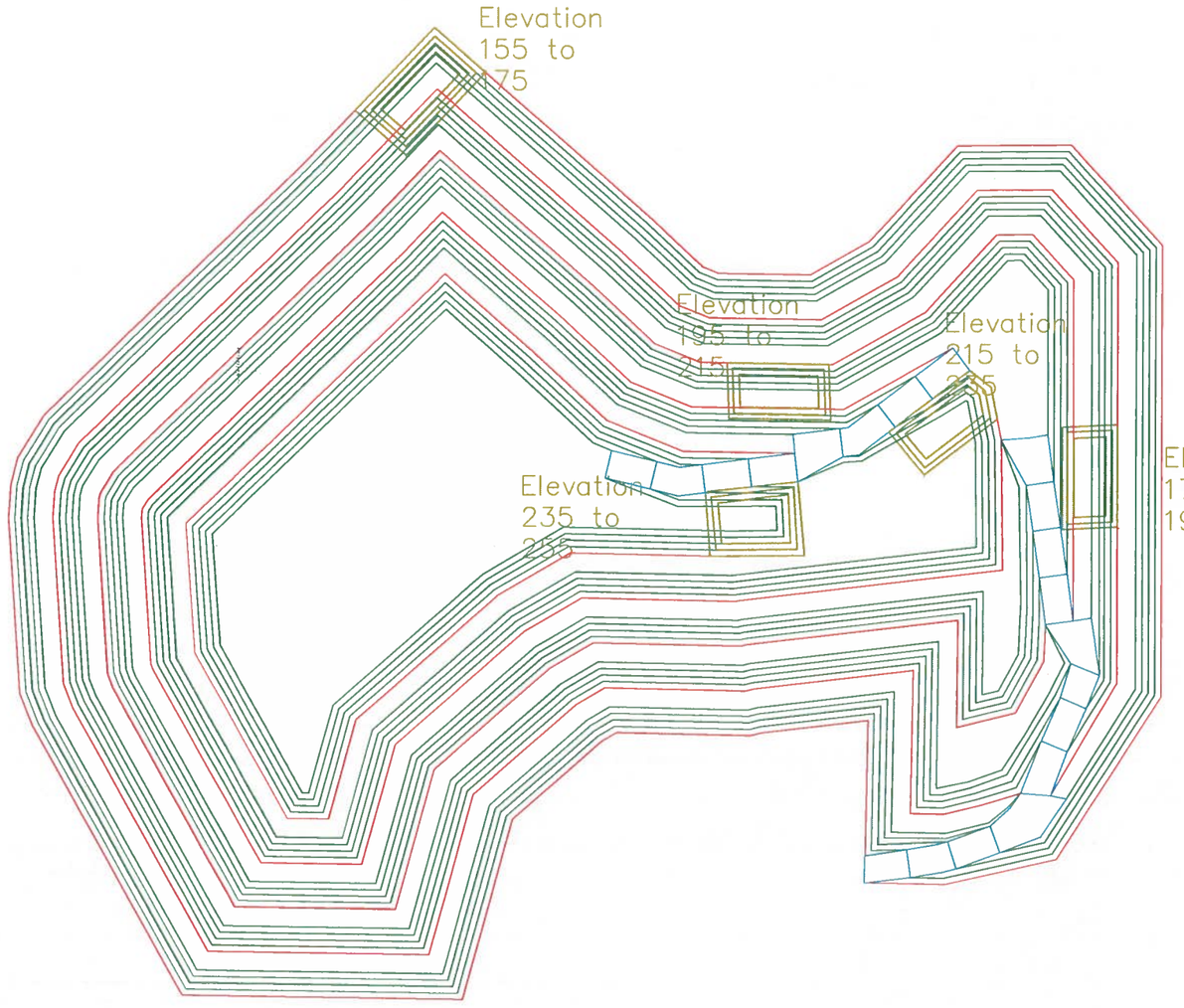

PLAN CLÉ
KEY PLAN

NOTES GÉNÉRALES / GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER
M.A.R. MORIN
LICENSEE
NT/NU

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

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AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT

REVISIONS

TITRE / TITLE
AGNICO–EAGLE – MEADOWBANK DIVISION
WHALE TAIL LANDFILL INCORPORATIONM SCHEMATICS
60 DAYS NOTICE

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APPROUVÉ PAR APPROVED BY	
ÉCHELLE SCALE	DATE 22/03/2019
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