Appendix 57

Whale Tail Landfill Design and Management Plan Version 6

AGNICO EAGLE

WHALE TAIL MINE

Landfill Design and Management Plan

In Accordance with Water License 2AM-WTP1830

Prepared by:
Agnico Eagle Mines Limited – Meadowbank Complex

Version 6
February 2025

EXECUTIVE SUMMARY

This Landfill and Waste Management Plan outlines the design of the current operational and a conceptual closure industrial waste landfill as part of the Agnico Eagle Mines Limited (Agnico Eagle) Whale Tail Mine in Nunavut.

The current landfill is required for the disposal of non-salvageable, non-hazardous, non-putrescible solid wastes from mining activities. Itis also be used for the disposal of compost. The landfill is located within the Whale Tail Waste Rock Storage Facility (WRSF) located to the northwest of the mine site and will consist of several sub landfills that evolve with the placement of waste rock. All of the sub-landfills will be identified and mapped. The landfill will be used for the remaining life of mine, for progressive closure and for closure.

The leachate from the landfill is very weak (diluted) or simply no existent due to the controls on materials placed in the landfill, and therefore specific leachate management is not considered. In the event that there is any leachate, it will be collected in the WRSF Pond and pumped to the Whale Tail Attenuation Pond for further management

At the end of mine life, the landfill waste will be covered by 0.3 to 1 m thickness of rock fill, with an additional 2 m minimum of coarse NPAG waste rock material. The final landfill slopes will be up to 50%. Drainage water will be managed under the current Water Management plan.

To meet NWB guidelines, an environmental overview effects assessment was conducted to characterize environmental resources and determine the anticipated environmental effects of the landfills. The primary potential environmental effects from landfill activities included leachate generation, windblown debris and habitat (vegetation) loss. Operation of the landfill has not shown any such environmental effects.

IMPLEMENTATION SCHEDULE

This plan will be immediately implemented (March 2024) and is subject to any modifications proposed by the NWB as a result of the review and approval process**.**

DISTRIBUTION LIST

Agnico Eagle – General Mine Manager

Agnico Eagle – Environment & Critical Infrastructures Superintendent

Agnico Eagle – Environmental General Supervisor

Agnico Eagle – Environmental Coordinator

Agnico Eagle – Engineering Superintendent

Agnico Eagle – Mine Superintendent

Agnico Eagle – Energy and Infrastructure Superintendent

DOCUMENT CONTROL

Version	Date	Section	Page	Revision
1	January 2017			Landfill and Waste Management Plan as Supporting Document for Type A Water License Application, submitted to Nunavut Water Board for review and approval
2	December 2018			For WT expansion permitting process
2	May 2019			For WT expansion permitting process
2	March 2020	All	All	Comprehensive update to reflect the current landfill operation
3	July 2020	All	All	Updated following issuance of Type A Water License Amendment 2AM-WTP1830 and Project Certificate No. 008 Amendment 1 for one comprehensive management plan
4	March 2021	All	All	Comprehensive Update to reflect the current landfill operation
5	March 2024	1.1 Project Overview	1	Updated sections / Added details regarding progressive closure and closure
		1.2 Landfill Siting	2	
		3.1 Approach	4	
		3.4 Total Volume of Waste	8	
		5.2.1 Estimate of Total Waste Volumes, Tonnage and Life of Landfill	11	
		5.2.2 Final Cover Design	12	
6	February 2025	3.0 3.2 3.3 4	4 5-10 11 12	Added details regarding types of waste, progressive closure and closure

Approved by:

Eric Haley
Superintendent – Environment & Critical Infrastructure

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ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited – Meadowbank Complex
GN	Government of Nunavut
NPAG	Non-Potentially Acid Generating
NWB	Nunavut Water Board
PAG	Potentially Acid Generating
WRSF	Waste Rock Storage Facility
VEC	Valued Environmental Components

UNITS

km	kilometre
km^2	squared kilometre
m	metre
m^3	cubic meter
Mt	million metric tonnes
t	metric tonnes

SECTION 1 • INTRODUCTION

1.1 Project Overview

The Landfill and Waste Management Plan outlines the design, operations, and closure of a solid waste landfill as part of Agnico Eagle's Whale Tail Mine.

The objectives of this Plan are summarized as follows:

1. To define the location, design, and operating procedures to be used in the landfill disposal of non-salvageable, non-hazardous waste generated at the Whale Tail Mine.
2. To define acceptable/non-acceptable types of solid waste to be placed in the Whale Tail landfill;
3. To define monitoring requirements for the proposed landfill.

The landfill is required for the disposal of non-salvageable, non-hazardous, non-putrescible solid industrial wastes from standard mining activities that cannot be composted. The Project operated totally independent of, and will not use, any municipal facilities or services for waste management.

Hazardous waste will not be placed in the landfills. Management procedures for hazardous wastes are provided under a separate management plan – Hazardous Materials Management Plan. All other materials considered unsuitable for landfill deposition are packaged for shipment and disposal off site at a licensed facility.

To meet NWB guidelines, an environmental overview effects assessment was conducted to characterize environmental resources and determine the anticipated environmental effects of the landfills. Other applicable regulatory guidelines and criteria were also incorporated into this Plan, as discussed in Section 2.

The overall Whale Tail Mine description, landfill siting options and descriptions, and corresponding environmental overview approach are described in the sections below. The Whale Tail Mine site facility layout is shown in Figure 1.

The landfill will be in use for the remaining life of mine, for progressive closure and for closure.

1.2 Landfill Siting

The landfills were positioned considering the following criteria:

- Drainage – sites that will drain into areas where water will be collected and monitored as part of the overall site plan were preferred.
- Avoid Ice Rich Soil Excavation – sites where bedrock is at relatively shallow depth are preferred.
- Disturbed Areas – sites that will be within or near areas that will be disturbed as

part of the overall mine plan are preferred.

- Access – sites located close to existing service or haul roads are preferred.

The first three criteria are recommendations from the *Mine Site Reclamation Guidelines for the Northwest Territories* (INAC 2007).

Based on the above criteria, the landfill is developed within the Whale Tail Waste Rock Storage Facility (WRSF), which is located north of the Kangislulik Lake therefore, minimizing the disturbed area. As presented in Figure 1, the landfill consists of multiple sub landfills that are built and buried according to the evolution of the RSF. As the RSF evolves, the elevation and location of the sub landfills change. The specific locations and number of sub landfills could vary based on waste capacity requirements for operation, progressive closure and closure. The landfill incorporation schematic is in Appendix A.

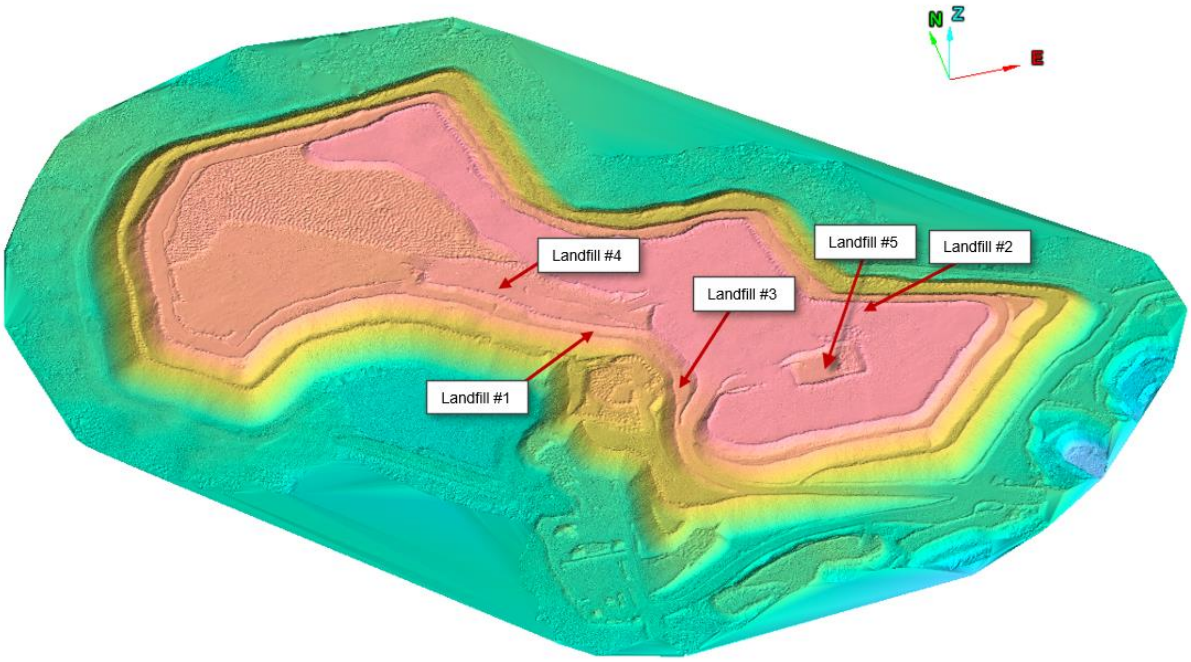

Figure 1 Landfill Location for Whale Tail Site

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 is also bound by the terms and conditions of its production lease with the Kivalliq Inuit Association and its Water License from the NWB.

In addition to mandatory requirements, several 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, April 2003, on behalf of the Department of Municipal and Community Affairs, Government of Northwest Territories). *Environmental Guideline for Industrial Waste Discharge into Municipal Solid Waste and Sewage Treatment Facilities* (GN 2011c) were also used. While not all the recommendations provided in these guidelines are appropriate for the management of industrial waste such as those generated at a gold mine, those principles that are considered applicable have been adopted in the Plan.

In addition, the NWB *Mine Site Reclamation Guidelines for the Northwest Territories* (INAC 2006) were followed in this current document regarding specific landfill design and mitigation for impacts pertaining to waste. The recommendations from Implications of Global Warming and the Precautionary Principle in Northern Mine Design and Closure (BGC 2003) were also incorporated into this document, where appropriate.

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

3.1 Approach

The strategy for the disposal of solid waste is to first identify and segregate acceptable disposal items from non-acceptable items. Acceptable items that can be disposed of at the on-site facility are those that are non-hazardous, non-organic, with low leachate and heat generation potential. All other materials are either incinerated, composted prior to landfilling, or hauled off site. This strategy for limiting the materials that can be placed in the landfills greatly reduces the potential for leachate.

All solid waste that may contain food waste or other organic waste that could attract wildlife is collected in sea cans and composted at the composter located at the Whale Tail Site. This includes all organic waste from the camp, camp kitchen, site lunchrooms and offices as well as organic waste. The compost output is then sent to the Whale Tail landfill. Wood and food packaging waste that could attract wildlife compacted and placed in a sea can for shipment off site. This includes all food packaging waste from the camp, camp kitchen, site lunchrooms and offices.

Waste from operations in truck shops, explosive magazines, warehouses, and underground operations is segregated based on the type of waste (i.e. Hazardous, domestic, medical etc.). Each work area has specially marked bins for segregating waste for incineration, recycling, or disposal. Special bins or areas are set aside for hazardous waste. Large bulky items that cannot be incinerated are prepared for shipment south for recycling or be cleaned of any hydrocarbon contamination and have the electronics removed before disposal in the landfill.

Due to the nature of underground operations and milling limitations scrap metal is created when ground support material is removed from underground ore at the Whale Tail Mine by a tramp metal segregation system. The scrap metal produced by this process is approved for disposal at the landfill. All other scrap metal generated on site is generally disposed of in c-cans for shipment down south during barge season for recycling.

All solid wastes that may contain medical waste from the Medical Clinic, are segregated. They are stored on site in closed bins and are sent to the Meadowbank mine site for shipment off site as required. This waste is not allowed to remain unattended in trucks at any time. The Energy and Infrastructure Department are responsible for the collection, transport, and management of waste.

Wastewater from the accommodation complex is treated in the Sewage Treatment Plant before being directed to IVR Whale Tail Attenuation Pond. Sewage sludge removed from the Sewage Treatment Plant is transported and added to the Whale Tail landfarm as nutrient amendment on an as needed basis. Excess sludge produced from the Whale Tail Camp is disposed of in the Whale Tail Waste Rock Storage Facility and buried right away as per procedure.

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

The development of the landfill minimizes the area required for waste storage and re-handling of waste. Acceptable items that are disposed of in the landfill are 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 conforms to best management practices allowing for orderly landfill development, including covering debris with waste rock, which reduces the potential for windblown debris.

The Type A Water License requires the following landfill related monitoring:

- Part I, Item 8 stipulates that the monthly runoff/seepage flow from the Landfill, in cubic meters, must be measured, recorded, and reported to the Water Board;

- Part I, Item 10 stipulates that the annual geotechnical inspection to be carried out by a geotechnical engineer between the months of July and September should include all earth works including the two landfill sites with the results being included in the report to the Water Board;

- Part I, Item 13 stipulates that seepage and runoff from the landfills is to be observed at a minimum of once per quarter; and

- Part I, Item 14 stipulates that the results and interpretation of the Seepage monitoring required in Part I, Item 13 in the Annual Report required under Part B, Item 2.

3.2 List of Acceptable and Unacceptable Waste to Landfill

Table 1 presents waste type categories acceptable and unacceptable for landfilling with alternative waste disposal options. This list will be used on site to ensure proper management of waste during operations, progressive closure and after the end of operations. Sections 3.2.1 to 3.2.5 provide additional information on management of specific type of waste.

Table 1: Waste Type Acceptable and Unacceptable for Landfill with Alternative Waste Disposal Options

Waste Type	Acceptable in Landfill	Unacceptable in Landfill	Alternative Waste Disposal Options
1. General Dry Waste and Demolition Waste			
Plastic Including HDPE liner, HDPE pipes and insulation, PVC pipes	x		
Steel, copper, aluminum, iron	x		Recycling (sent south)
Wood	x		
Fiberglass and fiberglass insulation	x		
Roofing	x		
Cardboard and paper	x		
Concrete	x		
Carpet	x		
Bricks	x		
Ceramics	x		
Rubber	x		
Empty caulking tubes	x		
Hardened caulk	x		
Clothing	x		
Glass	x		
Wire	x		
Small appliances (with batteries removed)	x		
Gyproc	x		
Ash (provided it has cooled to 60ºC or less and follows procedures laid out in the Incinerator Management Plan)	x		
Expanded polystyrene		x	Waste press (disposal south)
2. Wet or Food Waste			
Organic matter Including food, septic tank pumping or sludge from wastewater treatment, dead animals, paper		x	Composter
Food containers and wrappings, unless cleaned		x	Waste press (disposal south)
Composter output	x		
3. Hazardous Material			

Waste Type	Acceptable in Landfill	Unacceptable in Landfill	Alternative Waste Disposal Options
Hazardous waste: Mercury Medical waste Solvents Glues Ethylene glycol antifreeze Adhesives (except empty caulking tubes) Ballasts and capacitors in vehicles Mercury switches (found in ABS brakes, convenience lighting) Lead components (battery cable ends and connectors, wheel weights)		x	Disposal as per HAZMAT management procedures
Petroleum products and lubricants, other hazardous fluids: Diesel fuel, gasoline, Jet-A Oils, greases Anti-freeze Solvents used for equipment operation and maintenance Materials contaminated with petroleum products Windshield washer fluid Brake Fluid Transmission Fluid Power Steering Fluid Differential Fluid		x	Disposal as per HAZMAT management procedures
Ozone depleting substances (ODS), including chlorofluorocarbons (CFCs) or halons: Refrigeration equipment (refrigerant) Air conditioning equipment and motor vehicle air conditioners (refrigerant) Fire extinguishing equipment		x	Disposal as per HAZMAT management procedures As per Environmental Guideline for Ozone Depleting Substances (Government of Nunavut, 2011), CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 S.C. 1999, c. 33 (Ozone-Depleting Substances Regulations, 1998 SOR/99-7)
Process plant consumables: sodium cyanide, caustic soda (sodium hydroxide), sulphur prills, carbon sodium metabisulphite, nitric acid, calcine lime, flocculants, calcium chloride, borax, silica, lead nitrate, anti-scalants used in mineral extraction		x	Disposal as per HAZMAT management procedures
Water treatment chemicals silica sand flocculants polymers		x	Disposal as per HAZMAT management procedures

Waste Type	Acceptable in Landfill	Unacceptable in Landfill	Alternative Waste Disposal Options
Explosives emulsion, caps, and high explosives used for blasting in the mine		x	Disposal as per HAZMAT management procedures / burned at Site
Meadowbank Laboratory chemicals and wastes : various by-products classified as hazardous waste and chemicals such as nitric acid used in the assay laboratory		x	Generally very limited in quantity and will be handled only by specialist laboratory technicians
4. E-Waste			
Electronics: Batteries Computers (incl. keyboard, mouse, cables, speakers) Computer modules control in vehicule/equipment Laptops, Tablets Cell Phones Printers, copiers, scanners Monitors Televisions Telecom devices Power and air tools Solar panels		x	Recycling (sent south) Disposal as per HAZMAT management procedures
Light bulbs and Fluorescent Lamp Tube		x	Recycling (sent south) Disposal as per HAZMAT management procedures
5. Vehicles and Machinery			
Vehicles and machinery Provided that all applicable elements from listed in 3. Hazardous Material and 4. E-Waste have been removed Provided that Procedure A have been completed	x		Recycling or resale (sent south, provided that Procedure B have been completed)
6. Tires (Mobile and Heavy Equipment)			
Tires - cut in pieces or shredded	x		Disposal in underground
Whole tires		x	Recycling (sent south) Cut or shredded for disposal in landfill or underground

3.2.1 Waste Asbestos

Asbestos being present naturally in rock formations, asbestos related waste will be generated within the production processes. As such, this type of waste will be disposed of according to the MBK-HSS- IH-PRO Asbestos Waste Management procedure. Once ready for disposal, asbestos waste will be capped quickly to minimize exposure, using mini-landfill type of disposal within the existing Landfills.

3.2.2 Electronic Waste (E-Waste)

Electronic waste (e-waste) includes unwanted electronic equipment, such as smart devices and used cables, as well as batteries and fluorescent lights (including compact fluorescent lights). Electronic equipment contains toxins such as mercury, lead, cadmium, beryllium and arsenic. E-waste, if not managed properly, can be harmful to human health and to the environment. Fluorescent lights, for example, contain mercury and cannot be disposed of in regular garbage *(Government of Canada, https://ised-isde.canada.ca/site/office-consumer-affairs/en/be-green-consumer/e-waste).*

End of life electronic products stewardship programs are not regulated in Nunavut *(https://epra.ca/provincial-programs)*. Northwest Territories end-of-life electronics recycling program is operated by The Government of the Northwest Territories (GNWT). The GNWT Electronics Recycling Program website presents the list of what types of electronic equipment can be recycled, as presented on Figure 4. In order to provide a specific list of e-waste to be recycled on site, Table 1 aligns with the list presented by the GNWT and with the current practices on site during operations. Telecom devices and solar panels have been added to the list.

Figure 2 List of recyclable electronics, Government of the Northwest Territories Electronics Recycling Program
*Source: https://www.gov.nt.ca/ecc/en/services/waste-reduction-and-recycling/electronics-recycling-program

3.2.3 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 (Government of Nunavut, Environmental Protection Service, 2003) and as per the *Disposal Guidelines for Fluorescent Lamp Tubes*.

3.2.4 Ozone Depleting Substances

Ozone depleting substances (ODS) include chlorofluorocarbons (CFCs) 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 ODS take place at an approved facility.

3.2.5 Tires

Tires can be landfilled or placed underground as presented in Table 1. Small tires can also be sent south for recycling as per our current practices on site during operations. These are common practices presented in closure plans of similar projects. The sections below present the landfilling and disposal underground options for waste tires, as a large amount of tires will need to be managed during the remaining period of operation and in closure.

Based on timing and space availability of underground sectors ready for backfill, both disposal options of landfilling and underground disposal may be used for waste tires during the remaining period of operation and in closure.

Landfilling

As per Table 1, disposal of whole tires is not possible in the landfill. This is due to the risk of air and ice entrapment that could trigger settlements and stability issues for the landfill and its rockfill cover. The landfilling of whole tires can also be problematic due to the buoyancy issue caused mainly by trapping of gases from landfill material decomposition. In terms of capacity, whole tires landfilling would also take up a lot of volume.

As rubber is acceptable to be landfilled, it is considered that cut or shredded tires could be landfilled. If tires are cut into large pieces, the pieces would need to be placed on the side to avoid as much as possible large void that could promote water and ice accumulation, which could trigger settlement. During landfilling of tires pieces, limited amount of tires (cut or shredded) should be transported and placed in the landfill to avoid having large number of exposed tires stockpiles uncovered close to moving equipment, which would pose a fire hazard. Covering of tires pieces with NAG waste rock should be done promptly after placement in the landfill.

Landfilling tires requires proper health and safety procedures, logistical planning, as well as strict waste placement procedures. Careful planning of capacity and volume estimate for placement of cut tires will also be required to ensure that landfill capacity remains available for other types of waste.

Underground Disposal

Tires are composed of relatively inert material. Tires could be placed in the underground mine for permanent storage, in the backfill of permafrost areas. Waste tires could be co-disposed with rockfill required for backfill. Encapsulation and freeze-back would occur, eliminating any movement of contaminants and any chance of settlement or buoyancy problem. In the interest of optimizing capacity and facilitating transportation, large tires should be cut or shredded before transportation to underground. Tires could be brought gradually to underground when mined sectors within permafrost are ready to be closed and backfilled. As per landfilling, placing tires underground will require proper health and safety procedures, logistical planning, as well as strict waste placement procedures. It will also be important to plan the availability of underground areas ready for backfill, in order to avoid large stockpiles of waste tires close to the portal.

3.2.6 Vehicles and Machinery

Unused or damaged vehicles and machinery are approved to be placed in the landfill as per Table 1. All hazardous material, electronics and other unapproved waste for the landfill must be removed from the vehicles or machinery before placement in the landfill, as per the list presented in Table 1.

Vehicles and machinery with salvageable value could also be sent south by sealift for resale or recycling.

3.3 Total Volume of Waste

An estimate of waste volume is required to determine the approximate 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) of the landfill.

The expected volume of waste produced in closure and required disposal capacity are presented in the Closure and Reclamation Plan. The required landfill capacity will be calculated and regularly reviewed based on the estimated amount of demolition material and decommissioned equipment that will need to be landfilled at the end of the mine life, in addition to general waste forecasted to be generated during the rest of operation active closure.

SECTION 4 • LANDFILL LOCATION AND CONSTRUCTION

4.1 Landfill and protocol for placement of material

The location of Landfill is shown on Figure 1 within the Whale Tail WRSF limits. This landfill will serve as the solid waste disposal facility for the remaining life of mine life. The design of Landfill does not require imported materials or exacting survey data or measurement. This is due to the restriction on materials that can be landfilled and the location of the landfill within the catchment of the Whale Tail WRSF. These factors reduce the need for leachate collection or control or mitigation measures against vectors such as carnivores or raptors. Thus, the main environmental mitigation measure required is a wind screen to reduce windblown debris.

The Landfill will evolve into sub landfills that will be built and buried according to the evolution of the RSF. As the RSF evolves, the elevation and location of the sub landfills will change. The landfill incorporation schematic is presented in Appendix A.

The area to receive waste is bounded by a rock fill berm. The purpose of the rockfill berm is to act as a wind shield for the waste. The sub landfills have a rectangular shape with the length perpendicular to the prevailing wind direction so that much of the waste could be protected from wind by the rockfill berm.

4.2 Leachate Management

The leachate from the landfills has a very low strength (dilute) or is simply absent due to controls on materials placed in the landfills, and thus site-specific landfill leachate management is not required. In the event that any leachate is generated due to periods of heavy rainfall or spring freshet, the runoff will be collected in the WRSF Pond and pumped to the Whale Tail Attenuation Pond for further management. Since the Whale Tail WRSF will cover the Landfill, it is not proposed to have a separate water quality monitoring point for leachate.

4.3 Landfill encapsulation within the Whale Tail WRSF

The Whale Tail Rock Storage Facility contains surplus quantities of waste rock from the Whale Tail and IVR open pits. A classification system is used to identify the use and storage for all mine rock[1]. Specifically, this system identifies potentially acid generating (PAG) or non-acid generating (NPAG) rock types, as well as those with the potential to leach metals.

The Whale Tail WRSF is constructed as a cell, or series of cells, such that the interior of each cell is composed of PAG and/or ML waste rock, and the exterior of each cell is composed of NPAG waste rock. Thus, PAG and/or ML waste rock within the RSF is encapsulated within NPAG waste rock, thereby limiting its exposure to oxidizing agents such as air and water; and providing a buffer for any drainage from the interiors of the cells. The material within the Whale Tail WRSF freezes, which limits internal drainage as infiltrating water becomes frozen. As a further ARD control measure, the Whale Tail WRSF will be capped with a minimum 2 m thick layer of coarse acid-

[1] See Operational ARD/ML Testing and Sampling Plan

buffering ultramafic rock at closure.

Owing to their placement within the Whale Tail WRSF, the landfills are/will also become encapsulated within waste rock. Specifically, the slopes of the sub landfills are covered with an advancing waste rock layer during operations such that the sub landfills are covered by a minimum 0.3 to 1 m thickness of waste rock by the end of each sub landfill operations, prior to the final NPAG cover. Agnico Eagle plans to use NPAG waste rock to surround and cover the landfills wherever practical. As noted above, a minimum 2 m thick layer of NPAG coarse acid-buffering ultramafic rock would also be placed over the landfill cover as part of planned closure activities for the Whale Tail WRSF.

SECTION 5 • LANDFILL OPERATION

5.1 Conceptual Operations Plan

The following is a conceptual plan for operating the landfills.

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 are 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 leveled, are 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 landfills do not require a full-time attendant. Roll off trucks haul waste to the landfills and a dozer is used to spread, compact and level the waste.

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 run off from the Whale Tail WRSF will flow to the WRSF Pond.

5.1.7 Inspections

The environmental department is conducting periodic inspections to ensure compliance with the permit and operational plan.

5.2 Conceptual Closure Plan

After the landfill is no longer required, the wastes will be covered with a 2 m NPAG cover and integrated into the overall contours of the Whale Tail WRSF.

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

It is expected with the latest life of mine assessment to have sufficient space within the existing planned landfills.

The expected volume of waste produced in closure and required disposal capacity will be presented in the Closure and Reclamation Plan, as mentioned in Section 3.4.

5.2.2 Final Cover Design

Subsequent detailed engineering analysis determined that transition layers would not be required to prevent seepage from the landfill and were therefore removed from the original design. When

finalizing the design for the cover, the need for thermistors will be evaluated. The cover surface will be left irregular to capture snow, windblown sediment, and plant seeds. Drainage water if present will be naturally directed to the WRSF Pond, monitored, and discharged.

The waste in the landfills will be covered by 0.3 to 1 m thickness of rockfill following waste placement.
As per the Closure and Reclamation Plan, the landfill will be covered with a minimum of 2 m of NPAG waste rock at closure. The surface runoff from the landfill will be managed as part of the contact water system for the Whale Tail WRSF.

The final landfill slopes will be up to 50%.

5.2.3 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.

5.2.4 Water Management

Contact water from the landfill in closure will continue to be managed under the current Water Management Plan.

SECTION 6 • POTENTIAL ENVIRONMENTAL EFFECTS

The landfills are designed and built as part of the Whale Tail WRSF. The access road to the Waste Rock Storage Facility is used to access the sub landfills.

Landfill activities that were identified to have potential effects on VECs include site preparation and construction, operations and closure.

Potential effects from the landfills on VECs were assessed as follows:

- Degradation of permafrost;
- Change in surface water and groundwater drainage patterns due to proposed landfill footprint (altered landscape);
- Change in groundwater and surface water quality from leachate percolation, leading to degradation of aquatic habitat;
- Change in air quality from dust and windblown debris;
- Loss of vegetation cover and terrestrial mammal habitat due to proposed landfill footprint;
- Attraction of predatory and small mammals to waste; and
- Loss of sites of heritage significance or traditional ways of life.

Several mitigation measures, including management and monitoring plans were implemented as part of the overall Whale Tail Mine and are also incorporated into landfill construction, operations, and closure. The plans that set out detailed site-specific protection measures and procedures that serve to protect the VECs include:

- Water Management Plan;
- Air Quality and Dustfall Monitoring Plan;
- Terrestrial Ecosystem Management Plan;
- Hazardous Materials Management Plan;
- Closure and Reclamation Plan; and
- Water Quality and Flow Monitoring Plan.

6.1 Effects Summary

The primary potential environmental effects from landfill activities included leachate generation, windblown debris and habitat (vegetation) loss. Given the effective implementation of mitigation plans, no residual environmental effects to VECs from construction, operation or closure of the landfills are anticipated. See summary below:

- The leachate that will be generated by the landfills is of very low strength (dilute) or simply absent due to restrictions on the materials that is placed in the landfills. Water drainage from the landfill area would be collected in WRSF Pond and would be managed under the Water Management Plan during operations and closure.

- Rockfill berm acts as a wind shield to reduce amount of windblown debris.

- Habitat loss is minimized because the landfills is designed and built within the footprint of the Whale Tail WRSF. With the implementation of terrestrial habitat reclamation strategies, the final surfaces of the landfills are graded to blend into the existing topography and enhance conditions for wildlife. Terrestrial habitat reclamation strategies will be incorporated as part of the Closure and Reclamation Plan.

SECTION 7 • PLAN REVIEW AND CONTINUAL IMPROVEMENT

The Landfill Design and Management Plan will be reviewed regularly by the Meadowbank Environmental Department in consultation with the engineering department and updated if necessary. Improvements suggested through these reviews would be implemented in consultation with the Nunavut Water Board.

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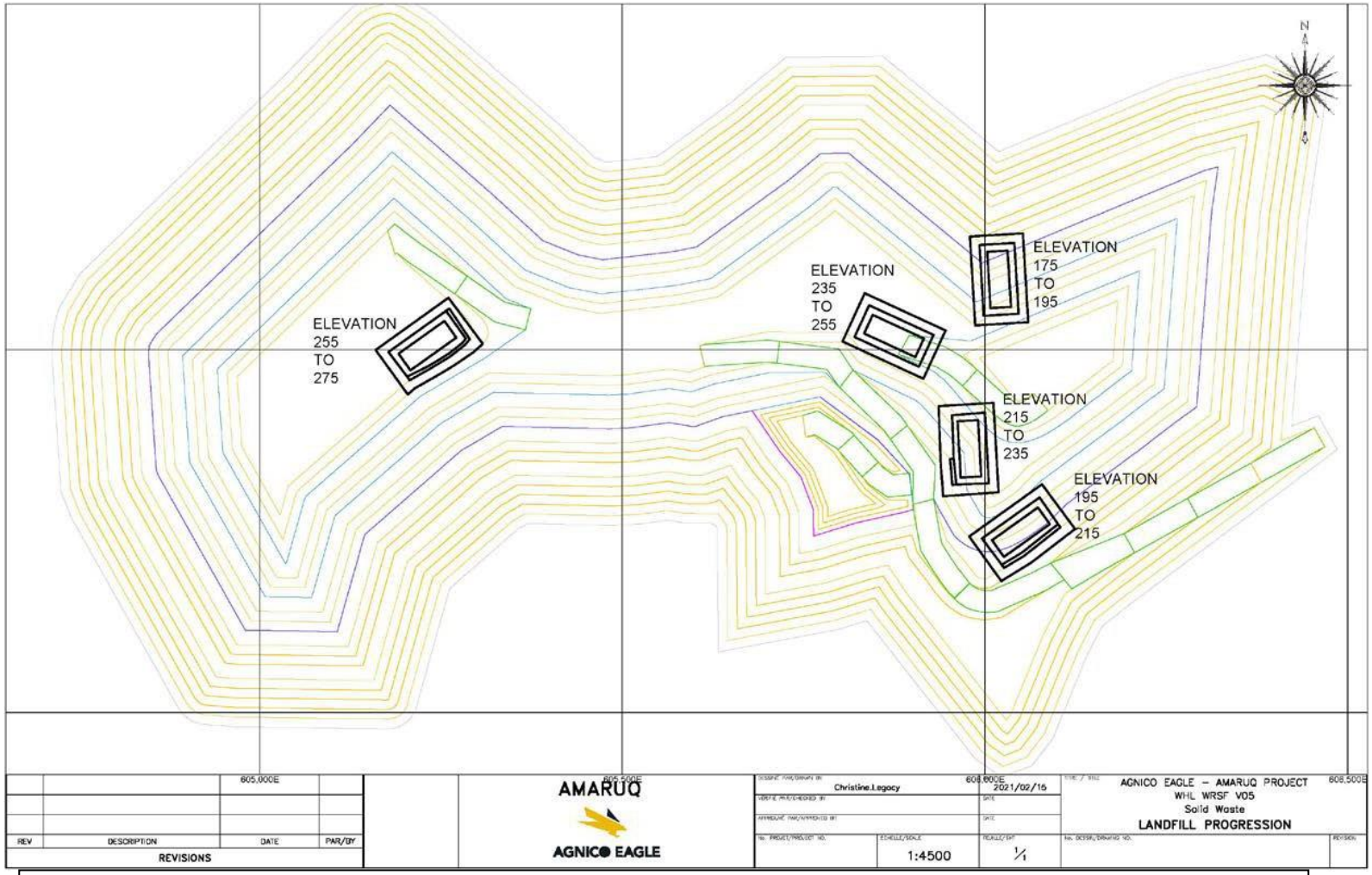
APPENDIX A • LANDFILL INCORPORATION SCHEMATIC



Note: Specific locations and number of sub-landfill could vary based on waste capacity requirements for operation, progressive closure and closure.