

Appendix J

Environmental Management Plan



CITY OF IQALUIT

Environmental Management Plan (Draft)

Landfill and Waste Transfer Station

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1.0 Introduction

1.1 Background

The City of Iqaluit (City) is in the process of implementing its Solid Waste Management Strategy to service their near and long term (75 years) municipal solid waste disposal requirements. Founded on a previously-completed conceptual design and facility siting exercise, key elements of the project include a solid waste transfer station (WTS) within the immediate urban area of the City where residential and commercial waste will be hauled to, processed, and compacted in bales or in the case of waste wood and cardboard, shredded and pelletized for use as a fuel source for an on-site biomass boiler. Tires, metal and some construction and demolition (C&D) wastes will also be shredded and or baled for landfilling or transported south for recycling. The resulting solid waste bales and possibly a smaller amount of unbaled construction and demolition waste will be trucked to an engineered balefill landfill site located approximately six kilometres from the WTS. The vehicles transferring the waste bales will access the road leading to the landfill site from the waste transfer station to avoid having the transfer vehicle travel through the City.

Other planned features of the WTS include a public drop off area for Household Hazardous Wastes (HHW) and a vehicle logger/compactor unit; in both instances allowing for the preparation of waste materials prior to shipping to approved management facilities in the south.

The access road that will be used to reach the new landfill site has been designed by EXP Services Inc. who will also be providing Construction Contract Administration services for the construction of the road. It is anticipated that the construction of the road will be included in the new landfill and waste transfer station contractor's scope of work.

To address their objectives, and following a competitive proposal process, the City engaged Dillon Consulting Limited (Dillon) to provide design and construction contract administration services to support the establishment of the transfer station/baling facility and the engineered landfill site. The engineered landfill will be designed for 75 years of operation but for the construction/build portion of the Project only the first stage of the landfill (Stage 1 Operational Landfill) will be constructed (e.g., first two cells and ancillary components to meet five and 10 year operational requirements, e.g., five years per cell).

Development of the proposed facilities is scheduled to occur during the 2020 and 2021 construction seasons, with facility commissioning in the fall of 2021.

1.2 Site Description

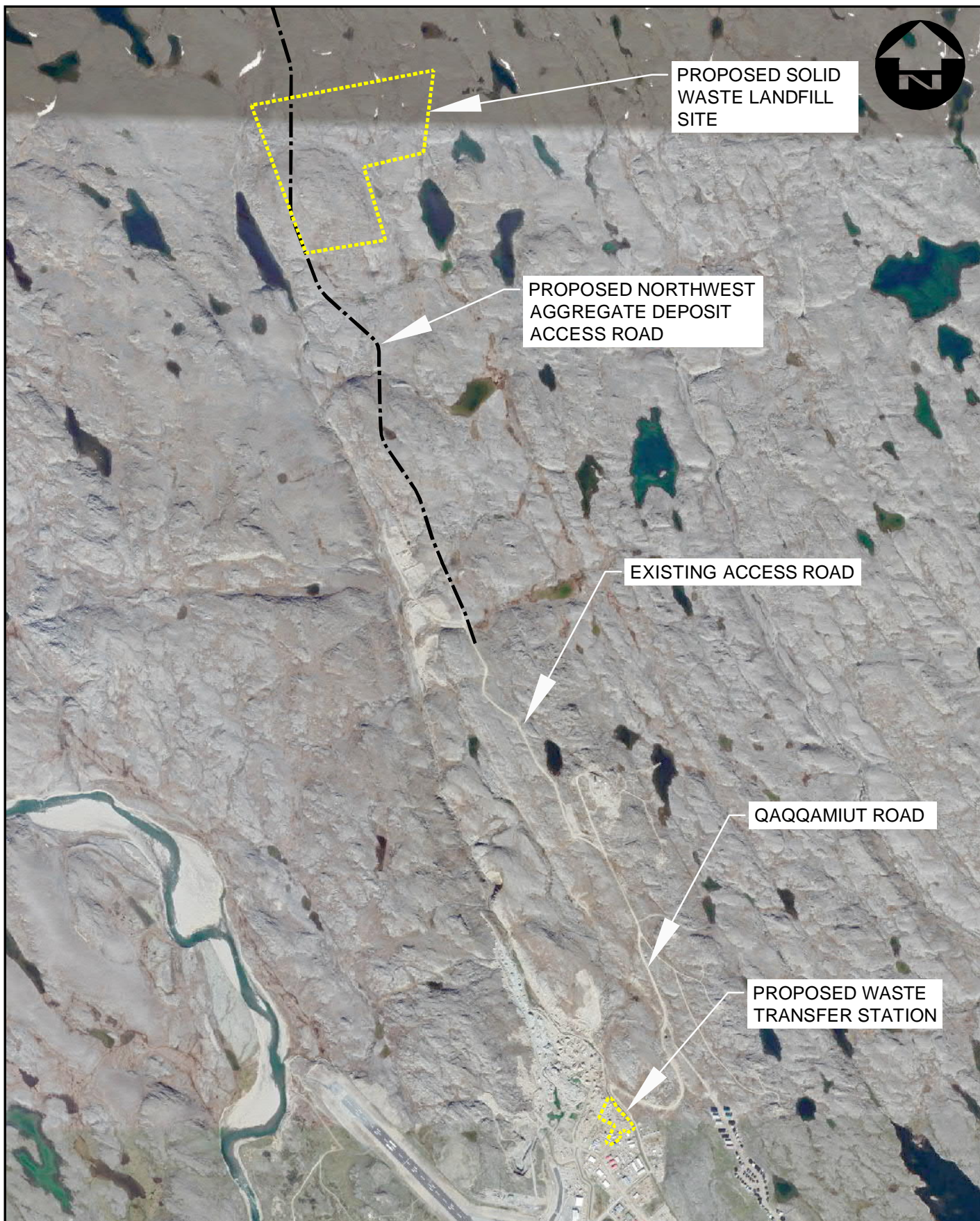
This ERP applies to the Iqaluit Waste Management Facility (IWMF), including the Waste Transfer Station (WTS) and Landfill, Iqaluit, Nunavut. Iqaluit is located at the south end of Baffin Island, on Frobisher Bay

at 64° 44' N latitude and 68° 31' E longitude. Access to the City is limited, with the only year-round access provided by commercial aircraft; sealift can also be utilized during the summer months.

The Landfill site is located approximately six kilometres northwest of the Iqaluit and occupies an approximate area of 22 ha. The WTS is located at the end of Kakivak Court. The site occupies an area of approximately 2.4 ha and comprises an office building, scale house, transfer station and contaminant storage area.

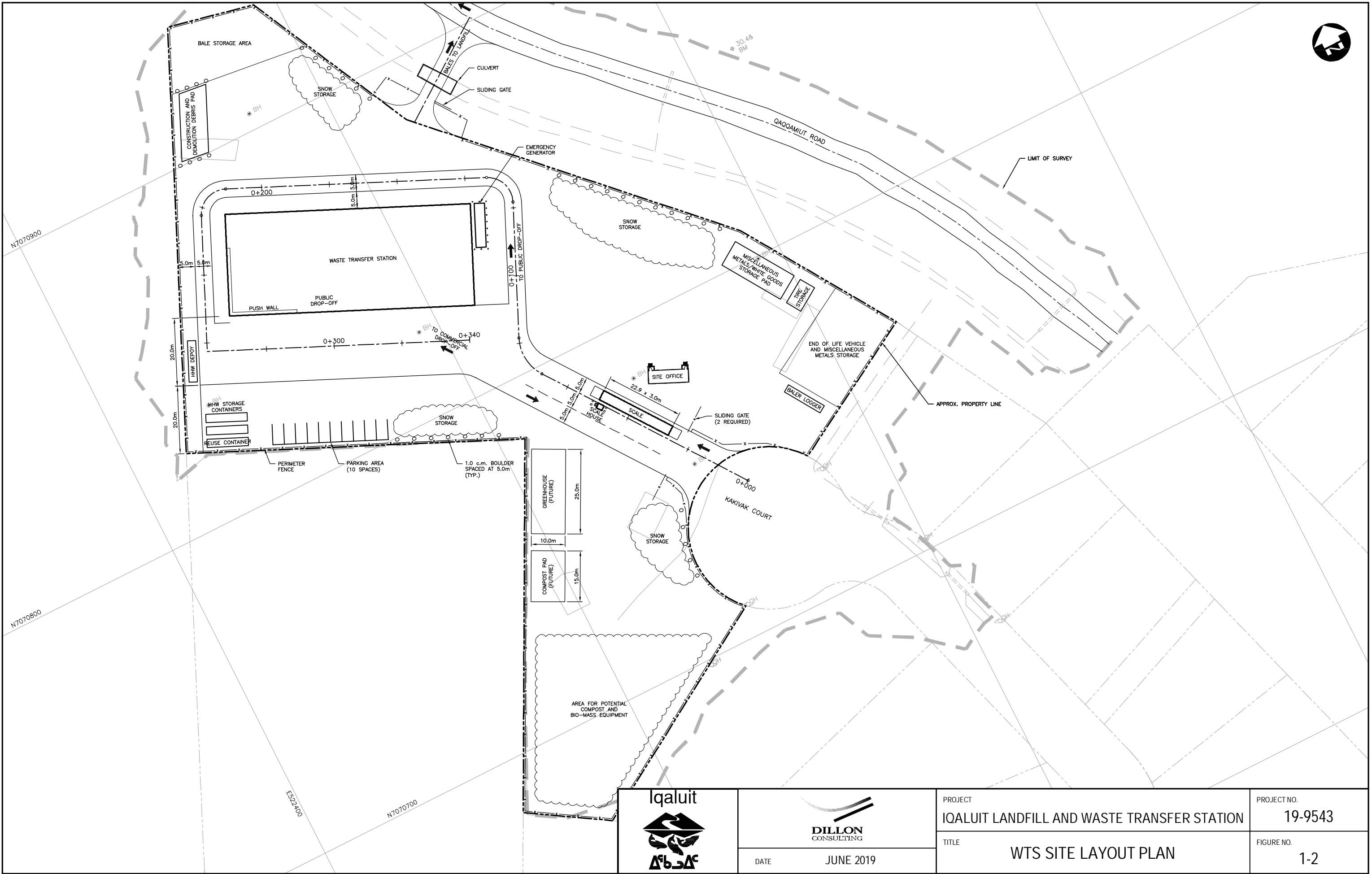
The overall site locations are presented on **Figure 1-1**, with the layouts for the WTS and the Landfill being provided on **Figures 1-2** and **1-3**, respectively.



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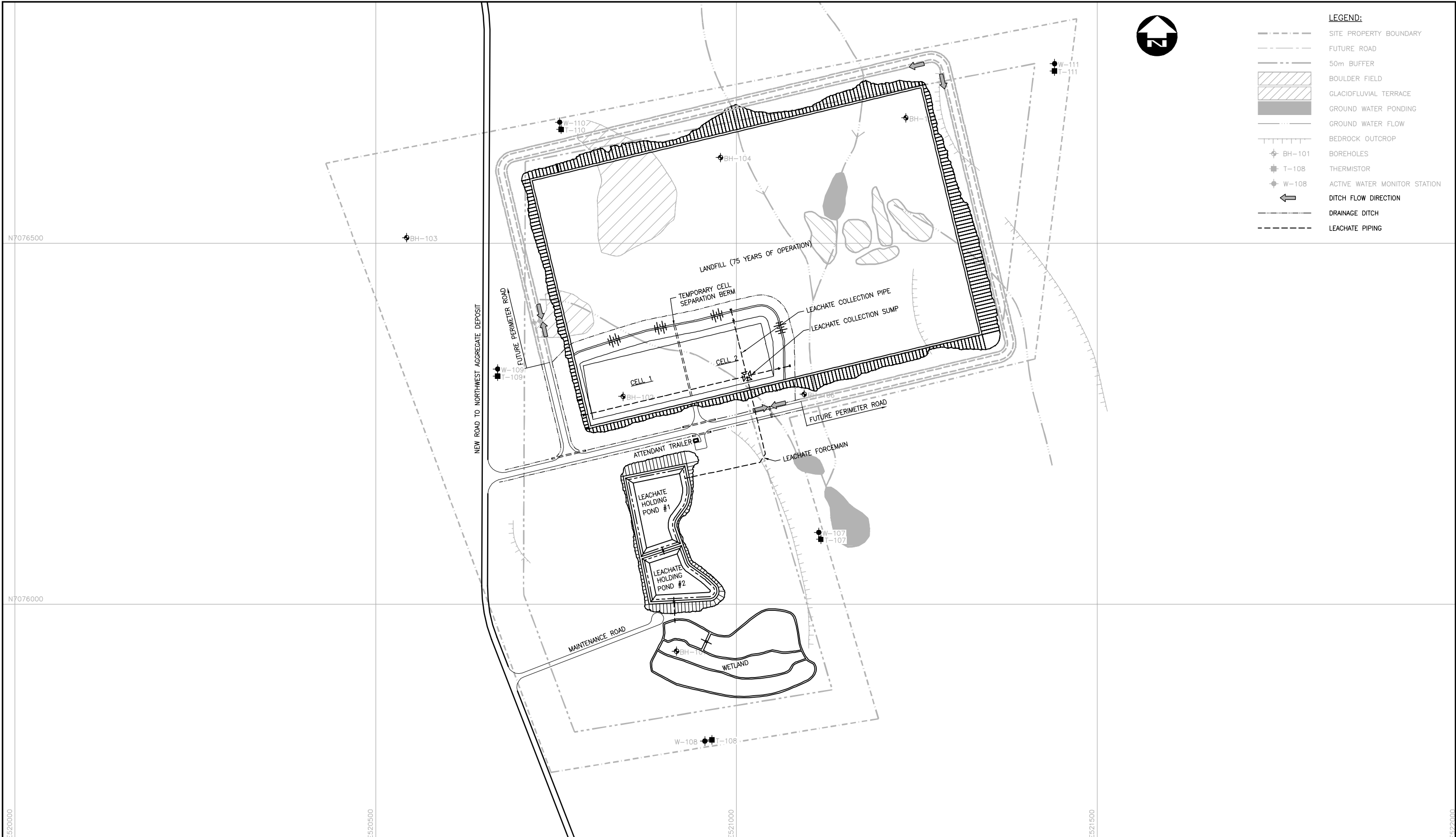
 DILLON CONSULTING	PROJECT IQALUIT LANDFILL AND WASTE TRANSFER STATION	PROJECT NO. 19-9543
	TITLE SITE LOCATIONS	FIGURE NO. 1-1
DATE JUNE 2019		



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 Iqaluit	 DILLON CONSULTING	PROJECT IQALUIT LANDFILL AND WASTE TRANSFER STATION	PROJECT NO. 19-9543
		TITLE WTS SITE LAYOUT PLAN	FIGURE NO. 1-2

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 Iqaluit	 DILLON CONSULTING	PROJECT IQALUIT LANDFILL AND WASTE TRANSFER STATION	PROJECT NO. 19-9543
		TITLE LANDFILL LAYOUT PLAN	FIGURE NO. 1-3

1.3 Purpose of the Environmental Management Plan

This Environmental Management Plan (EMP) provides a framework by which to assess, track and document the project's environmental compliance requirements and provides a basis for the systematic management of environmental risks. The EMP is designed to implement, and form a basis for, the environmental protection and mitigation measures described in the Environmental Protection Plan (EPP) for this project.

The EMP acts as the overarching document for both the EPP and Emergency Response Plan (ERP) by outlining the roles and responsibilities for project personnel for both documents, and describes the legislation governing these documents. The EPP describes the environmental protection measures to be implemented throughout the project, and acts as a resource for the City and its contractors to avoid or mitigate potential adverse environmental effects to receptors. The ERP provides guidance to project personnel for responding to an emergency situation, as well as it covers all aspects of emergency planning and response.

The EMP Describes:

- The City's environmental commitments to regulatory agencies, stakeholders, the natural environment and the general public;
- Roles and responsibilities of project personnel regarding environmental protection and mitigation, inspection, and reporting during the construction of the Landfill and WTS;
- Environmental protection and mitigation measures to be implemented during construction to ensure compliance with regulatory requirements; and
- Procedures to deal with environmental contingencies that may arise during construction.

The EMP describes the environmental protection procedures to be implemented for each of the environmental features/parameters identified in the EPP, and associated correspondences for this project to maintain environmental compliance by the Operator and its contractors. The EMP will serve as a procedural document to support the objective that all environmental compliance requirements are met, tracked and documented. The EMP will also serve as an educational tool for the orientation and training of project personnel.

2.0 Project Personnel, Roles and Responsibilities

The following sections of the EMP outline the roles and responsibilities of the City and its assigned contractors. These responsibilities include reporting, notifications, guidelines on documentation and incident reporting.

It is the responsibility of project personnel to ensure that the environmental commitments outlined in this EMP, as well as the Environmental Impact Assessment (EIA) and associated follow-up correspondence, are adhered to.

The EMP will be incorporated into the orientation and training exercise for applicable on-site personnel working on the project. A copy of this EMP will be available at a location designated on the construction site at all times during construction. Project personnel working on the site are to be aware of the existence of this EMP, its requirements and where it is located on-site.

The ERP portion of the EMP contains vital information on project personnel, roles and responsibilities, and procedures involved in emergency situations at the Landfill and WTS. It is imperative that the ERP be reviewed by all project personnel before commencing the Operations Phase of the project, as well as at regular intervals during operation.

2.1 Owner – City of Iqaluit

As the Operator of the Landfill and WTS, the City will be responsible for ensuring its third party representative and the Contractor's Site Supervisor are made aware of the EMP and its requirements, and that the commitments contained therein are implemented. The City of Iqaluit is responsible for ensuring that construction requirements, and associated regulations, are followed. The City of Iqaluit will also provide guidance and technical support to on-site personnel with respect to environmental compliance.

2.2 Owner's Representative – Dillon Consulting Limited

During the construction phase, the Owner's representative will be a third party consultant (Dillon Consulting Limited) responsible for ensuring the EMP is implemented in accordance with procedures outlined in this document and compliance obligations are satisfied. The Owner's representative will be responsible for supervising the activities of the Contractor to ensure all required environmental protection and mitigation measures are implemented. The Owner's representative will ensure that reporting and documentation procedures and requirements stipulated in the EMP are completed.

The Owner's representative will, at a minimum:

- Serve as an independent (third party); and
- Provide technical services associated with the completion of the project.

2.3 Contractor's Site Supervisor

The Contractor's Site Supervisor will ensure that the requirements of the Landfill and WST EMP, applicable to its work, are implemented to ensure environmental compliance. The Contractor will also ensure that a separate ERP for work associated with the Construction Phase of the project is completed and approved before construction operations commence. In the event of a spill during the Construction Phase of the project, the Site Supervisor will ensure that the City and Environmental Protection (Government of Nunavut) are made aware of the spill and any clean-up measures taken.

2.4 Contact Information

Appendix A provides contact information for key project contacts as of May 2019. This listing is to be reviewed and revised on a regular basis, acknowledging City personnel changes as well as future construction projects.

2.5 Documentation Procedures

Continuous and effective communication and documentation is a key component of the environmental protection and mitigation process. Consistent with regulatory requirements, it will serve to support the reliable dissemination of pertinent documents and manuals for project personnel during the completion of site activities.

During the initial construction phase of the project (as well as during future contractor construction activities at either the Landfill or WTS), the Owner's representative and Contractor's Site Supervisor will maintain project documents and updates/revisions of documents (including this EMP), drawings and manuals, permits, and approvals at a designated location on the project site. During Operational, Closure and Post Closure activities (e.g., activities led by the City of Iqaluit), the Owner will be responsible for addressing the requirements of the EMP. Applicable project personnel will be advised of the location(s) of these documents, and will be required to comply with the practices and procedures outlined therein.

3.0 Regulatory Requirements

The EMP has been developed in consideration of relevant legislative requirements. The Owner's representative and the Contractor will ensure that work associated with the project is undertaken in accordance with the items outlined in the scope of work for the project. The following legislation is applicable to the Landfill and WTS development for the City.

3.1 Federal Legislation

Fisheries Act

This Act prohibits the unregulated deposit of a deleterious substance into waters frequented by fish. It protects both the marine environment and freshwater features.

Canadian Environmental Protection Act (CEPA)

Through this Act, any activity that may alter, disrupt or destroy fish habitat, as defined in the Fisheries Act, may trigger a federal environmental assessment under CEPA. Relevant Regulations under this Act include the PCB Regulations (2008), which provide guidance for disposal of polychlorinated biphenyls (PCBs) and/or PCB waste; the Ozone-Depleting Substances and Halocarbon Alternatives Regulations (ODSHAR), which was released in 2016, and provides guidance and regulations surrounding manufacturing, import, export, use, sale, and transfer of these substances.

Migratory Birds Convention Act

This Act protects birds crossing provincial and international borders, working with other countries to ensure safe flyways for migratory birds.

Transportation of Dangerous Goods Act

This Act creates regulations to monitor and ensure safe practices for the handling, storage, and transportation of designated dangerous goods.

Workplace Hazardous Materials Information System Act (WHMIS)

This Act regulates all WHMIS requirements. Any personnel working with or near hazardous materials shall have WHMIS training.

3.2 Territorial Legislation

Nunavut Wildlife Act

This Act protects all wildlife in Nunavut and requires an assessment to ensure this project will not harm sensitive species within Nunavut.

Nunavut Environmental Protection Act

Among other matters, this Act ensures that environmental assessments are completed before construction related to new projects in Nunavut can commence. Contravention of the Act could lead to fines and/or imprisonment.

Nunavut Planning and Project Assessment Act

This Act regulates the planning of new projects and the processes required for project assessment. It promotes one assessment for one project.

Nunavut Waters and Nunavut Surface Rights Tribunal Act

This Act governs land use and permitting for new projects and developments within Nunavut.

Nunavut Safety Act

This Act ensures safe work practices are in place and followed by all project personnel at work sites. Punishment of fines and/or imprisonment could be administered through the authority of this Act.

3.3 Municipal Legislation

No municipal legislation applicable to the proposed project activities or implementation of this EMP has been identified.

3.4 Permits and Approvals

Iqaluit Building Bylaw

Permits to construct buildings must be obtained from the Building Inspector within the City. If construction is not started within a year of permit approval, the permit becomes invalid.

4.0 Environmental Protection Plans

A separate plan has been prepared for both the Construction Phase and the Operations, Closure and Post Closure Phase of the project. These plans are included as **Appendix B** and **Appendix C**, respectively. The EPPs describe the environmental protection measures to be implemented for the various relevant environmental considerations, during each phase of the project. The EPP for each project phase acts as a resource for the City or its contractors to avoid or mitigate potential adverse environmental effects to receptors.

4.1 Construction Phase Outline

The Construction Phase EPP consists of the following information:

- Introduction
 - Purpose of This Document
 - Regulatory Context
- Project Roles and Responsibilities
- Environmental Considerations
 - Vegetation
 - Wetlands and Watercourses
 - Wildlife and Wildlife Habitat
 - Fish and Fish Habitat
 - Species at Risk or Species of Special Status
 - Heritage and Cultural Resources
- Environmental Protection Measures
- Monitoring and Inspection
- Contingency and Emergency Response Plan
 - Spill Response Plan
 - Small Spills/Leaks
 - Large Spills/Leaks
 - Incidental Discovery of Sensitive or Protected Species Contingency Plan

4.2 Operations, Closure and Post Closure Phase Outline

The Operations, Closure and Post Closure Phase EPP consists of the following information:

- Introduction
 - Purpose of This Document
 - Regulatory Context
- Project Roles and Responsibilities
- Environmental Considerations
 - Species at Risk or Species of Special Status
- Environmental Protection Measures

- Monitoring and Inspection
- Contingency and Emergency Response Plan
 - Spill Response Plan
 - Small Spills/Leaks
 - Large Spills/Leaks
 - Incidental Discovery of Sensitive or Protected Species Contingency Plan

Emergency Response Plan

The ERP has been included as **Appendix D** and provides guidance to Operations Phase project personnel for responding to an emergency situation.

The ERP consists of the following information:

- Introduction
 - Scope of Plan
- Types of Emergencies Covered by Plan
- Emergency Response Coordinators
 - Emergency Service Contacts
- Notification Procedures
- On-Site Emergency Equipment
- Emergency Response Procedures
 - Medical Emergencies
 - Vehicle Fires
 - Building Fires
 - Landfill Fires
 - Liquid/Chemical Spills
 - Gas Leaks/Suspicious Odours
 - Explosions
 - Extreme Weather Events
 - Power Outages
 - Dangerous Animal Encounters
 - Violent/Criminal Behaviour
- Evacuation Plan
 - Evacuation Routes
- ERP Distribution and Updating
- Post Emergency Review and Plan Assessment
- Readiness Review
 - Emergency Reporting
 - Simulation Exercises

Appendix A

Project Contact List

Table 1: Contact Information for Key Project Contacts

CITY OF IQALUIT			
CONTACT	PAGER #	WORK #	CELL #
Dispatch	N/A	979-5650	-
Chief Administrative Officer (CAO)	N/A	979-5666	222-2953
Director of Public Works and Engineering	N/A	975-8509	222-2965
Operations Superintendent, Public Works	N/A	979-5631	222-2956
Manager of Engineering (Vacant)	-	-	-
Utilidor Manager	N/A	979-5632	222-2966
Utilidor on-call	32	N/A	222-3243
Garage/Roads Foreman	N/A	979-5668	N/A
Trucked Services Foreman	N/A	979-5612	222-2947
Owner's Third Party Representative- Dillon Consulting Limited (Keith Barnes)	-	(403)215-8885 ext. 4310	(403)827-6299

EMERGENCY SERVICES		
CONTACT	WORK #	CELL #
Dispatch	979-5650	-
Duty Officer (Fire/Ambulance)	979-4422	-
Fire Chief	979-5657	222-5073
Deputy Fire Chief	979-5650	222-2955
Deputy Fire Chief	979-5650	222-3981
Chief Municipal Enforcement Officer	979-5670	222-5521
RCMP	979-1111 979-0123	
GOVERNMENT RESOURCES- SPILL LINE		
24-Hour Spill Line	Telephone #	(867)920-8130

EXTERNAL ASSISTANCE- GOVERNMENT RESOURCES	
DEPARTMENT	CONTACT #
Environmental Protection, Government of Nunavut	975-5900
Indian and Northern Affairs Canada, Nunavut District Manager	975-4295
Indian and Northern Affairs, Baffin Sub-District	975-4295
Environment and Climate Change Canada, Iqaluit	975-4636
Department of Fisheries and Oceans, Iqaluit	979-8000
Regional Public Health Officer, Government of Nunavut	979-7652

CONTRACTOR	CONTACT #
Baffin Building Systems	979-5903
Kudlik Construction Ltd	979-1166

CONTRACTOR	CONTACT #
Nunavut Excavating Ltd	975-3320
RL Hanson	979-6004
Tower Arctic Ltd.	979-6465
Qikiqtaaluk Environmental	
Nunatta Environmental	

Appendix B

Environmental Protection Plan –
Construction Phase
(under separate cover)



CITY OF IQALUIT

Environmental Protection Plan (Draft) Construction Phase

Landfill and Waste Transfer Station

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B	Orders, Permits and Licenses (to be added when available)
C	Erosion and Sediment Control Plan (to be added when added)

1.0

Introduction

1.1

Purpose of This Document

This Environmental Protection Plan (EPP) has been prepared as part of an overarching Environmental Management Plan (EMP) and describes the environmental protection measures to be implemented during construction of the City of Iqaluit's (the City's) proposed Waste Transfer Station (WTS) and Landfill. The purpose of the EPP is to be a resource for the City and its contractors during the construction phase to avoid or mitigate potential adverse environmental effects to various receptors. This EPP is based on a desktop review of publically available records and site assessments conducted for the Landfill and Transfer Station locations, completed by EXP Services Inc. (Delvin, 2018a; Delvin 2018b; EXP, 2018).

This EPP includes instructions for carrying out construction activities, outlines environmental protection measures (as they relate to the project activities) and provides a reference for environmental inspection staff to support decision-making during the construction phase of the project. **Once the construction phase of the project is complete, refer to the Operations, Closure, and Post-Closure Phases Environmental Protection Plan for phase-specific protection and mitigation measures.**

Key project contacts (as of May 2019) are provided in **Appendix A**.

1.2

Regulatory Context

The environmental regulatory framework that the project falls under includes:

1. *Fisheries Act*;
2. *Species at Risk Act*;
3. *Canadian Environmental Protection Act*;
4. *Nunavut Wildlife Act*;
5. *Nunavut Environmental Protection Act*; and
6. *Nunavut Waters and Nunavut Surface Rights Tribunal Act*.

Project Roles and Responsibilities

The following section outlines the roles and responsibilities of the City and its assigned contractors. These responsibilities include reporting, notifications, guidelines on documentation and incident reporting. The responsibilities of all parties are outlined below.

City of Iqaluit – Owner (All Project Phases)

As the Operator of the Landfill and Transfer Station, the City will be responsible for ensuring that its employees and third party representatives are made aware of the EPP and associated plans, and that the commitments contained therein are implemented. The City is responsible for ensuring that the requirements of construction and associated regulations are met. The City will also provide guidance and technical support to on-site personnel with respect to environmental compliance.

Contractor (Construction Phase Only)

As a component of its contractual obligations, the Contractor (for initial and future construction initiatives) will be responsible for developing and implementing an Environmental Protection Plan specific to its personnel and project activities. In the event of a spill during construction phases of the project, the Contractor's site supervisor will ensure that the City and Environmental Inspector (EI) are made aware of the spill and measures are taken to address the environmental impacts.

Dillon Consulting Limited - Owner's Representative (Construction Phase Only)

The Owner's representative will be a third party consultant (e.g., Dillon Consulting Limited), responsible for corroborating that the EPP is implemented by the Contractor, in accordance with procedures outlined in this document, and compliance obligations are met. The Owner's representative will confirm that reporting, documentation procedures and requirements stipulated in the EPP are completed by the Contractor.

The Owner's representative will, at a minimum, and as directed by the Owner:

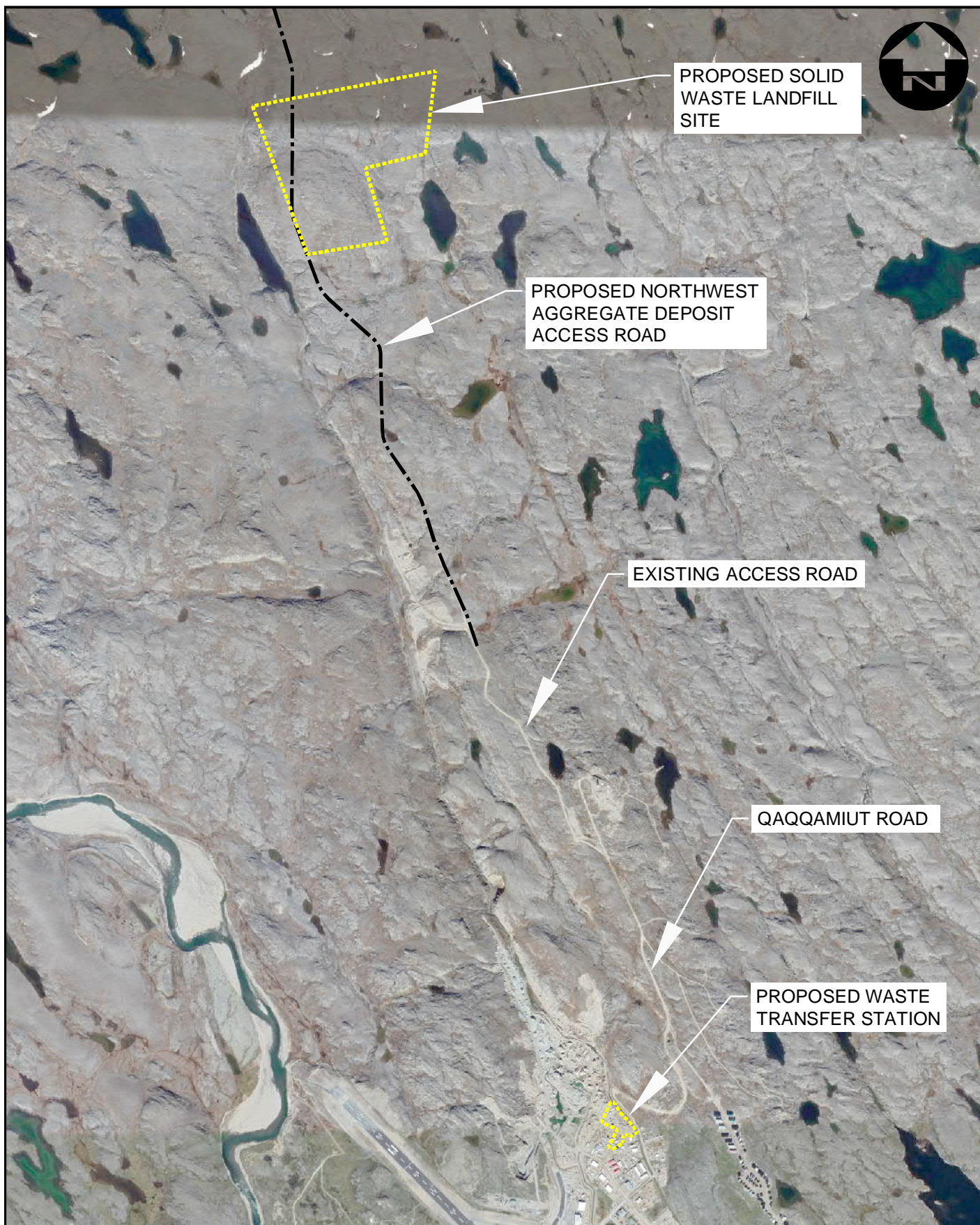
- Serve as an independent (third party); and
- Provide technical services associated with the completion of the project.


3.0 Environmental Considerations

The environmental setting of the project areas (**Figure 3-1**) was assessed using a desktop review of publically-available records and site assessments completed by EXP Services Inc. (Delvin, 2018a; Delvin 2018b; EXP, 2018). The two sites are located in the Meta Incognita Peninsula Ecoregion, which is characterized by rock outcroppings interspersed with sandy morainal veneers and frozen organic deposits, static cryosols with turbic and organic cryosol soils, and continuous permafrost with mainly medium ice content (Ecological Framework of Canada, 2019).

The Landfill site is approximately 22 ha in size, consisting predominantly of rolling hills with some bedrock outcrops in the south central region, small glacio-fluvial terraces in the northwest region, and boulder fields in the northwest and central portions of the site (EXP, 2018). The Transfer Station location is an industrial site, within the City, and is approximately 2.4 ha in size, covered by fill consisting of sand and gravel with boulders and cobbles (Delvin, 2018a, Delvin 2018b).

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 DILLON CONSULTING	PROJECT IQALUIT LANDFILL AND WASTE TRANSFER STATION	PROJECT NO. 19-9543
	TITLE SITE LOCATIONS	FIGURE NO. 3-1
DATE JUNE 2019		

3.1 Vegetation

The landscape of the Meta Incognita Peninsula Ecoregion is dominated by tundra shrub vegetation, consisting of Dwarf Birch (*Betula nana*), Willow (*Salix spp.*), Labrador Tea (*Ledum spp.*), *Dryas spp.* and *Vaccinium spp.* (Ecological Framework of Canada, 2019). The nearby landscape, as characterized by Sylvia Grinnell Territorial Park reports, contains shallow, low-nutrient soils and continuous dwarf vegetation, meaning that vegetation growth is generally less than 30 cm tall (Nunavut Parks, 2019). Traditionally-important plant species found nearby include Mountain Sorrel (*Oxyria digyna*), Crowberry (*Empetrum spp.*), Blueberry (*Vaccinium spp.*), Mountain Cranberry (*Vaccinium spp.*), Arctic Willow (*Salix arctic*), Arctic Cotton (*Eriophorum callitrix*) and Labrador Tea (*Ledum spp.*). Other vegetation includes rock lichens, drought-tolerant vegetation, sedge grasses and the official flower of Nunavut - the Purple Mountain Saxifrage (*Saxifraga oppositifolia*).

Landfill

Twenty-three plant species were observed at the site location, none of which are protected under the federal *Species at Risk Act* (SARA) (EXP, 2018). The dominant and sub-dominant plant species observed included Arctic Willow (*Salix arctica*), Net-vein Willow (*Salix reticulata*), Bog Bilberry (*Vaccinium uliginosum*), Arctic Bell Heather (*Cassiope tetragona*) and Reindeer Lichen (*Cladina spp.*) (EXP, 2018).

Waste Transfer Station

The site is predominately covered with fill but some vegetation, such as grasses, exist along the northern perimeter and along the creek adjacent to the north site boundary (Delvin, 2018a).

3.2 Wetlands and Watercourses

Landfill

There are a number of small ephemeral drainages that cross the site, and discharge into a small pond and lake southeast of the site boundary (EXP, 2018). The pond and lake drain into Carney Creek, approximately 200 m west of the site, before discharging into the Koojesse Inlet of Frobisher Bay (EXP, 2018).

Waste Transfer Station

There are no waterbodies reported on the site location; however, there are a few small bodies of water 30 m west of the site, as well as a stream contained within a road ditch located along the north eastern boundary (Delvin, 2018a; Delvin, 2018b). The stream drains into Koojesse Inlet, which is located approximately 2 km southeast of the site.

3.3 Wildlife and Wildlife Habitat

Wildlife that frequent the region, as characterized by species found in Sylvia Grinnell Territorial Park, include Caribou (*Rangifer tarandus*), Arctic Foxes (*Vulpes lagopus*), Arctic Hares (*Lepus arcticus*), other small mammals; and although infrequent; Polar Bears (*Ursus maritimus*) (Nunavut Parks, 2019). Migratory bird species known to occur within the region include the Common Ringed Plover (*Charadrius*

hiaticula), Lapland Longspur (*Calcarius lapponicus*), Snow Bunting (*Plectrophenax nivalis*), Northern Wheatear (*Oenanthe oenanthe*), Red-Throated Loon (*Gavia stellate*), Peregrine Falcon (*Falco peregrinus*), Gyrfalcon (*Falco rusticolus*), Lesser Golden Plover (*Pluvialis dominica*), Semipalmated Sandpiper (*Calidris pusilla*) and Horned Lark (*Eremophila alpestris*) (Nunavut Parks, 2019).

Landfill

Eleven wildlife species were observed at the site location – three mammals, five birds and three insects – but none are protected under SARA legislation (EXP, 2018). The wildlife species observed at the site included: Lemming (*Lemmus trimucronatus*), Fox (*Vulpes sp.*), Caribou (*Rangifer tarandus*), Savannah Sparrow (*Passerculus trimucronatus*), Red-throated Loon (*Gavia stellate*), Common Raven (*Corvus corax*), Falcon (*Falco sp.*), American Pipit (*Anthus rubescens*), American Copper (*Lycaena phlaeas*), Forest Bumblebee (*Bombus sylvicola*) and Wolf Spider (*Hogna lenta*).

Waste Transfer Station

No reports were found that indicated wildlife populations or wildlife habitat are present within the site boundary.

3.4 Fish and Fish Habitat

Landfill

The waterbodies within the site boundary are unlikely to be accessible to fish; however, the stream that collects surface drainage from the Landfill site contributes to Carney Creek, which connects to a small lake west of the site reportedly providing habitat for Arctic Char (EXP, 2018).

Waste Transfer Station

No reports were found that indicated fish populations or fish habitat are present within the site boundary.

3.5 Species at Risk or Species of Special Status

The following Species at Risk (SAR) or species of special status (see **Table 3-1**) have the potential to be impacted by the proposed project.

Table 3-3-1: Wildlife Species at Risk

Common Name	Scientific Name	COSEWIC Status	SARA Status	Schedule 1
Caribou (barren-ground population)	Rangifer tarandus	Threatened	No Status	No
Harlequin Duck	Histrionicus histrionicus	Special Concern	Special Concern	Yes
Polar Bear	Ursus maritimus	Special Concern	Special Concern	Yes
Red Knot (rufa subspecies)	Calidris canutus rufa	Endangered	Endangered	Yes
Red-necked Phalarope	Phalaropus lobatus	Special Concern	No Status	No
Ross's Gull	Rhodostethia rosea	Threatened	Threatened	Yes
Wolverine	Gulo gulo	Special Concern	Special Concern	Yes

While not all of the listed species were identified at the time the surveys were conducted at the sites, these species are known to live in the area, and could be present or visit the sites during the lifespan of this project.

3.6 Heritage and Cultural Resources

Landfill

There are no designated cultural heritage or archaeological/paleontological features identified within the site boundary; however, the proposed site and adjacent landscape is used for outdoor recreational and traditional activities (EXP, 2018). These reported activities include hunting, fishing, berry picking, camping, winter skiing, picnicking and dog walking (EXP, 2018).

Waste Transfer Station

No reports were found that indicated cultural heritage or archaeological/paleontological features are present within the site boundary.

4.0

Environmental Protection Measures

The purpose of this section is to provide specific mitigation measures for the project team to implement or confirm implementations, in order to avoid or reduce potential environmental impacts. Mitigation measures for the Contractor to implement are outlined for various components of the project in **Tables 4-1 to 4-3** below. Within each table, the mitigation measures are sorted by issue/activity. Revision of specific mitigation measures outlined in the EPP may be required to address unforeseen site-specific conditions or as a result of ongoing consultation.

Applicable Orders, Permits and Licenses for the project are provided in **Appendix B**.

Table 4-1: Mitigation Measures for Planning and Regulatory Requirements

Issue/Activity	Mitigation Measures
Work Progress Schedule	<ol style="list-style-type: none"> 1. Works must be conducted according to regulatory approvals, permits, and licenses obtained for the work. These documents shall be displayed at each work site. 2. Adhere to planned project scheduling as outlined in the applicable regulatory permits and approvals. 3. Schedule and conduct activities to adhere to applicable timing windows and avoid restricted activity periods, where feasible, as follows: <ul style="list-style-type: none"> • Where possible, pre-clear shrubs and tall grasses prior to the onset of migratory bird nesting period (May 6 – September 1) to discourage nesting on the construction footprint. 4. A copy of this EPP and its included plans, regulatory approvals, permits and/or licenses will be available on-site at all times. 5. As part of pre-construction survey marking, conduct the following: <ul style="list-style-type: none"> • Clearly flag or stake the boundaries of the project area before construction, including the corners of the work areas. Maintain the corner markings until the work areas are reclaimed. • Clearly flag or stake the boundaries of temporary access roads. • Maintain survey markings until construction and clean-up activities are complete.
Discipline	<ol style="list-style-type: none"> 6. Workers who shows careless or wanton neglect of the environment, or disregard requirements put forward in the EPP will be identified, the incident recorded, and the Contractor will take appropriate action.
Environmental Training	<ol style="list-style-type: none"> 7. Prior to the beginning of construction, a pre-job meeting will be held with relevant project personnel (e.g., engineering, safety and environment employees, observers, contractor supervisors) where this EPP, environmental concerns, mitigation measures, and regulations specific to the work, corporate policies and procedures, specific stakeholder conditions, specific conditions on associated permits, and contingency measures will be reviewed with the Contractor. 8. Environmental training will be provided to field level project personnel, as part of the site orientation, prior to starting work. This training, reviewed by the Owner and their representative, will be provided by the Contractor.

Table 4-2: Mitigations Measures for Construction

Issue/Activity	Mitigation Measures
Work Areas	<ol style="list-style-type: none"> 1. Project activities must occur within the approved workspace. 2. Where necessary, the applicable work area boundaries must be clearly staked or marked with flagging tape.
Erosion and Sediment Control*	<ol style="list-style-type: none"> 3. Erosion and sediment controls shall be installed prior to commencing excavations or work in areas susceptible to erosion. 4. If activities involve ground disturbance within 100 m of any watercourse or wetland, erosion control structures must be installed between the natural areas and the work areas to create separation of the work area, as required. 5. Erosion and sediment control measures are to be left in place, where feasible, until all work is complete. 6. Erosion and sediment control measures are to be routinely inspected and maintained in proper working order. 7. Erosion and sediment control measures are not static and may need to be upgraded and/or amended as directed by the Regulators, Owner, or their representative, as site conditions change. 8. The Contractor shall repair failed erosion and sediment control measures as soon as possible. 9. If drifting soil or topsoil loss is evident in areas prone to wind erosion, conduct the following: <ul style="list-style-type: none"> • Suspend topsoil stripping operations during high winds; • Apply a tackifier to the stripped topsoil pile; and/or • Install wind barriers. 10. Topsoil handling will be suspended during high winds when soil erosion is evident and during heavy rains if soil becomes saturated. Topsoil will not be handled until winds have decreased and/or topsoil has drained and dried. 11. After final grading, stabilize disturbed steep slopes with permanent erosion control structures, especially if heavy runoff or heavy storms are likely, and there is a risk of substantial erosion. 12. Remove silt fence and erosion control measures only after the site has been stabilized.
Equipment Cleaning and Condition	<ol style="list-style-type: none"> 13. Construction equipment, including tracked equipment and rubber-tired vehicles, shall arrive on the job site clean (i.e., free of soil and vegetative debris) and in good working order with no oil, hydraulic, or other fluid leaks. 14. Machinery and equipment shall be inspected for leaks throughout the duration of construction.
Clearing, Grubbing, and Grading	<ol style="list-style-type: none"> 15. Construction work will be confined to the defined workspace. 16. Soil disturbance will only occur within the designated areas of the project required for surface or subsurface work. 17. Limit the extent of clearing, grubbing and grading to the minimum extent feasible. 18. Store material in discrete piles or windrows. 19. Ensure that stripped or graded soil does not spread outside of the project area. 20. Segregate topsoil from subsoil fill. 21. Consult with the Owner's representative prior to clearing or removing vegetation near watercourses. 22. Prior to any vegetation clearing or soil stripping, the appropriate wildlife and birds nest surveys must be completed prior to the start of clearing operations.

Issue/Activity	Mitigation Measures
Drainage Control	<ul style="list-style-type: none"> 23. Ensure construction activities do not obstruct natural drainage, where possible, and facilitate drainage around the work area when avoidance is not possible. 24. Following construction, grade to re-establish surface drainage patterns and maintain existing site grades. 25. Leave gaps in windrows, at obvious drainages, on side-hill terrain and wherever seepage occurs, to reduce interference with natural drainage patterns. 26. Interceptor ditches and sumps are to be maintained free of accumulated sediment. Inspections are to be carried out regularly; cleaning to occur as required.
Dust and Noise Control	<ul style="list-style-type: none"> 27. Vehicle use on public roads and project access routes will be in accordance with applicable laws and road use agreements (e.g., load restrictions). 28. Vehicles will not exceed speed limits established for the area and will lower speeds in specific conditions, such as areas of high erosion hazard. 29. Personnel will avoid unnecessary wheel spin when traveling or operating on soil. 30. Personnel will not unnecessarily idle vehicles or equipment. 31. Ensure equipment and machinery is in good working order with proper noise abatement equipment (i.e., mufflers or enclosures). 32. Locate stationary equipment, such as compressors and generators, away from noise receptors to limit the transmission of noise off-site. 33. Notify the Owner or their representative of any noise complaints that may be received by project personnel, public agencies, or individuals.
Fuel and Hazardous Material Storage	<ul style="list-style-type: none"> 34. Hazardous materials must be labeled, stored and handled according to Workplace Hazardous Materials Information System regulations. 35. Fuel storage containers and tanks will be appropriately labeled. 36. Adequate spill response materials are available and accessible at the site. 37. Fuel containers and filters must be stored in secondary containment. 38. Jerry cans and other mobile fuel containers must always be stored in secondary containment while being used and returned to the storage area, as soon feasible following use. 39. Refueling points and fuel storage tanks, including secondary containment and gas cans, will be inspected regularly. All leaks must be repaired immediately.
Equipment Refueling and Servicing	<ul style="list-style-type: none"> 40. Regularly inspect and maintain all heavy equipment and vehicles used for the project, including fuel transfer hoses and fuel/oil lines, to ensure that the systems are in good condition and free of leaks. Equipment or vehicles with deficiencies will be taken out of service and repaired. 41. Refueling equipment will be attended at all times while refueling. 42. Refueling of equipment will not take place within 30 m of any wetland or watercourse. 43. Drip trays are to be in place while refueling occurs to contain overfilling, drips and spills. 44. All vehicle servicing with the potential for accidental spills shall take place above an impervious tarp, and servicing will not take place within 30 m of wetlands or watercourses. 45. Spill kits should be accessible while refueling. 46. Spill mats and/or drip pans/trays will be placed under all mobile fueling containers, equipment, and vehicles, when not in use or parked for longer than two hours.

Issue/Activity	Mitigation Measures
Spill Response, Reporting and Notification	<p>47. The Contractor will notify the Owner or their representative, as soon possible, following the discovery of a spill of any volume.</p> <p>48. The Contractor will notify Regulatory agencies and community liaisons, where required, to notify them of the spill.</p> <p>49. A written spill report must be submitted to the Owner and their representative by the Contractor within 24 hours of any spill.</p>
Air Emissions	<p>50. Do not unnecessarily idle vehicles or equipment.</p> <p>51. Ensure equipment is well maintained.</p> <p>52. Notify the Owner or their representative of any odour complaints that may be received by project personnel, public agencies, or individuals.</p>
Light Emissions	<p>53. Lighting will be restricted to the minimum required to complete the works safely.</p> <p>54. Lighting will be directed to the work area to reduce light pollution during dark hours to the extent feasible.</p>
Wildlife Encounters and Sightings	<p>55. Feeding or harassing wildlife is prohibited.</p> <p>56. Travel within posted speed limits and yield to wildlife.</p> <p>57. Report incidents of collisions or close calls with wildlife to the Owner or their representative.</p> <p>58. The Contractor will notify the Owner and/or their representative of the following wildlife sightings:</p> <ul style="list-style-type: none"> • Any suspected SAR or suspected species of special status, which are listed in Table 3-1; • Any dead or sick/diseased wildlife; and • Any food caches, dens, or nests found within or close to the site. <p>59. The Government of Nunavut will be notified of wildlife encounters by the Owner, when required.</p> <p>60. If previously unidentified listed or sensitive wildlife species or their site-specific habitat (e.g., dens, nests) are identified during construction, the Contractor will report the sighting to the Owner or their representative and implement the Wildlife Species of Concern Discovery Contingency Plan (Section 6.2).</p>
Water Management	<p>61. Water taking/withdrawal can only be carried out while personnel are on-site or nearby, allowing for regular inspection and maintenance of the pumping and discharge system.</p> <p>62. Prior to discharging any water to the environment, the water must be inspected for any signs of contaminants. If signs of contaminants are present, the water must be collected and hauled to a disposal facility or sampled and analyzed to determine if the water meets Canadian Council of Ministers of the Environment water quality guidelines for the protection of aquatic life.</p> <p>63. Water is to be discharged using pumps that will be directed to sediment removal materials (i.e., filter bag) or water settlement areas, in low-lying, vegetated areas at least 30 m away from a watercourse or wetland. At no time shall water be discharged directly into a watercourse or wetland. Dewatering volumes are to be monitored and recorded daily.</p> <p>64. Where possible, discharge locations should be chosen that are near the dewatered area to maintain the local water table elevation.</p> <p>65. Suitable discharge locations will be reviewed and confirmed by the Construction Manager and the EI.</p>

Issue/Activity	Mitigation Measures
Discovery of Heritage Resources, Sites, or Artifacts	<p>66. Avoid impacts on lands outside of the work areas, including vegetation clearing.</p> <p>67. If any artifacts or signs of archaeological artifacts are encountered, all work in the area will be stopped immediately and the Owner and their representative will be immediately notified. Work will not resume until the Regulator has approved mitigation measures are implemented. Do not operate vehicles or equipment within 30 m of a known or suspected archaeological site, or burial ground.</p> <p>68. The Owner will notify the following, as soon as possible, upon the discovery of an archaeological or historical site:</p> <ul style="list-style-type: none"> • Government of Nunavut Territorial Archaeologist 867 934-2040 and include the following information: <ul style="list-style-type: none"> ○ Name and contact information of the person who made the discovery; ○ The date of discovery; ○ The nature of the object or fossil; ○ A description of the site and any artifacts/fossils noted; ○ A few photographs of the artifact/fossil and/or site; ○ A GPS reading of the location, if possible; ○ Any other relevant information; and ○ Regulations: subsection 51 (1) of the <i>Nunavut Act</i> and the Nunavut Archaeological and Palaeontological Sites Regulations. <p>69. No one shall knowingly remove, disturb, or displace any archaeological specimen or site.</p>

Issue/Activity	Mitigation Measures
<p>Watercourse Protection</p>	<p>70. Install effective erosion control and sediment control measures before starting work to prevent sediment from entering any waterbody or spreading outside of the work site.</p> <p>71. Wash, refuel, and service machinery, and store fuel and other materials for the machinery in such a way that prevent any deleterious substances from entering the water.</p> <p>72. Schedule work to avoid wet, windy, and rainy periods that may cause erosion and sedimentation.</p> <p>73. Apply the following mitigation measures to ensure fish habitat is maintained when crossing waterbodies:</p> <ul style="list-style-type: none"> • Install a temporary bridge structure over the waterbody. The temporary bridge will be placed above the ordinary high water mark so that instream works are not required. Use matting to cross non-fish bearing watercourses and wetlands. • Use temporary crossing structures or other practices to cross watercourses with steep and/or highly erodible (e.g., dominated by organic materials and silts) banks and beds. • Design and construct approaches to the watercourse or waterbody, such that they are perpendicular to the watercourse or waterbody to minimize loss or disturbance to riparian vegetation. • The banks of the watercourses are not to be cut unless otherwise authorized by the Regulators. • Do not remove naturally occurring material from the bed and banks of any watercourse below the ordinary high water mark. • Do not store material on the ice surface of a watercourse, unless required for immediate use. • Minimize the disturbance of riparian vegetation within the immediate boundary of watercourse crossings to the extent practical. • Install suitable erosion and sediment controls measures around work areas near watercourses and wetlands to prevent resuspension of sediment into waterbodies. • If works around watercourse or wetland crossings cause exposed soils and/or bank stability issues, remediate the exposed banks upon completion of the work. • Do not ford wet streams. • Remove all construction materials from site upon crossing completion. <p>74. Notify the Owner's representative if any suspected contamination is discovered in or near a waterbody, who will initiate the applicable investigation and sampling to be completed to confirm suspect soil or water:</p> <ul style="list-style-type: none"> • Soil or slurry material should be considered contaminated, if any of the following are found: <ul style="list-style-type: none"> ○ Oil residue; ○ Gaseous odour; ○ Discoloured soil; and/or ○ Sheen on water. • Upon discovery of potential impacted soil or water, the site observer and their Project Manager will consult with the Owner to determine proper sampling requirements. • If required, the Owner will notify the applicable regulators of the newly discovered impacts. • Contaminated materials will be disposed of in accordance with the Waste Management Plan. • Consult with the Owner prior to disposing of any contaminated waste. requirements are met and an approved facility has been arranged to receive the waste.

Table 4-3: Waste Management Procedures

Issue/Activity	Mitigation Measures
Waste Handling and Disposal	<ol style="list-style-type: none"> 1. Appropriate waste disposal facilities for each waste type to be produced by the project must be identified by the Contractor, prior to starting work. 2. All waste leaving the site must be accompanied with an appropriate waybill, bill of lading or waste manifest. Consult with the Owner or their representative to determine what type of paperwork is required. 3. Notify waste disposal facilities of waste shipments prior to leaving the site and determine if any there are facility sampling requirements. 4. No wastes may be disposed of on-site. 5. If wastes, including wastewater, are to be disposed of at a local municipal waste facility, agreements should be in place between the receiving local municipal waste facility and the Contractor, prior to any wastes being hauled. 6. All sewage and solid waste will be contained and sealed in watertight containers. 7. Tanks used for transporting greywater will be watertight, and will be regularly and properly inspected and maintained by the operator.

5.0 Monitoring and Inspection

As a defined Contractor responsibility, monitoring and inspection activities are to be conducted during the construction phase of the project, to assess any impacts to the surrounding environment and habitat. Environmental monitoring and inspections are important during this phase because the potential for negative impacts to the environment and habitats occurring within and outside the site area is high. It is imperative that spills and other incidents, which impact the environment and wildlife in the area, such as the discovery of a nesting bird in the construction zone, are reported immediately. If a site characteristic is deemed problematic, appropriate mitigations measures are to be implemented. There may be a need to revise specific monitoring and inspection activities outlined below to address unforeseen site-specific conditions.

6.0 Contingency and Emergency Response Plans

6.1 Spill Response Plan

The following sections contain spill response plans for small and large spills. Mitigation measures pertaining to Fuel and Hazardous Material Storage, Equipment Refueling and Servicing and Spill Response, Reporting, and Notification is found in **Section 4.0 - Environmental Protection Measures**.

6.1.1 Small Spills/Leaks

Spills or leaks less than 20 L are considered a small spill and the following procedure must be followed:

1. The first observer will check the immediate area for any affected or injured personnel, and will inform the Contractor, as soon as possible.
2. The Contractor will:
 - a. Ensure activity in the area is restricted to guarantee the safety of the personnel cleaning up the spill.
 - b. Direct staff to take appropriate emergency environmental protection measures such as placing booms, barrier, or absorbent pads around the spill to prevent liquid escape into the environment or into surface waterbodies.
 - c. Shovel the spilled material and clean-up debris into a drum, bin, or bag;
 - d. Label the container(s) as "Spill Material" along with the spilled substance and date. Place it in a safe storage area.
 - e. Notify the Department of Environment for the Government of Nunavut and take their direction as appropriate.
 - f. Complete a *Spill Report Form* detailing the following:
 - i. Amount of product spilled;
 - ii. Name of material spilled if known. If the material is unknown, indicate as such in the log;
 - iii. Person who discovered the spill;
 - iv. Date and time of the spill;
 - v. Estimated volume of spill clean-up material used; and
 - vi. Any other relevant details.
 - g. Forward the incident report/memo to the supervisor for review; and
 - h. Attempt to determine the cause of the release, if risk to further release exists, and if feasible, mitigate the cause to prevent further releases.

6.1.2 Large Spills/Leaks

Spills or leaks greater than 20 L are considered a large spill. For a large spill, the following procedure must be followed:

1. The first observer will check the immediate area for any affected or injured personnel, and will inform the Emergency Coordinator, as soon as possible.

2. The Contractor will take control of the emergency and complete the remaining steps:
 - a. Clear all personnel out of the area.
 - b. Notify the Department of Environment for the Government of Nunavut and take direction from the Department or their designated authority.
 - c. If over 100 L of fuel is spilled, or the spill volume is unknown, by law it must be reported to the Government of Nunavut. Report a spill in one of the following two ways:
 - i. Call the 24-Hour Spill Report Line at 867-920-8130; or
 - ii. Complete the *Spill Report Form* from the Nunavut Government (found in **Appendix E** of this report) and fax it to 867-873-6924, or email it to spills@gov.nt.ca.
3. For other Schedule B Contaminants (NWT Reg, 2006), if greater than the reference amount of contaminant was spilled or you are unaware of how much was spilled, by law it must be reported to the Government of Nunavut. To report a spill of Schedule B Contaminants, phone the 24-Hour spill Report Line at 867-920-8130. A list of Schedule B Contaminants and the reference spill volumes (NWT Reg, 2006) are presented in **Table 6-1**.

Table 6-1: Schedule B Contaminant Reference Spill Amounts

TDGA Class	Description of Contaminant	Amount Spilled
1	Explosives	Any amount
2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity greater than 100 L
2.2	Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L
2.3	Compressed gas (toxic)	Any amount
2.4	Compressed gas (corrosive)	Any amount
3.1, 3.2, 3.3	Flammable liquid	100 L
4.1	Flammable solid	25 kg
4.2	Spontaneously combustible solids	25 kg
4.3	Water reactant solids	25 kg
5.1	Oxidizing substances	50 L or 50 kg
5.2	Organic peroxides	1 L or 1 kg
6.1	Poisonous substances	5 L or 5 kg

4. Use appropriate personal protective equipment (PPE) for proper handling of material;
5. If there is danger due to exposure, fire, explosion, or if public safety, the Contractor will suspend operation. All personnel should evacuate to the Emergency Muster Area. If the Emergency Muster Area is an unsafe area due to the conditions, personnel must proceed to an Alternative Muster Area.
 - a. Contractors should take attendance from preprinted list.
 - b. Phone and seek guidance from the 24-Hour Spill Report Line at (867-920-8130).

6. If the chemical spill is too dangerous or toxic to handle with equipment on-site or if it appears to be dangerous, reactive, or unknown, contact the 24-Hour Spill Report Line (867-920-8130) for guidance and assistance.
7. If safe to do so, direct staff to take appropriate emergency environmental protection measures such as placing booms, barrier, or absorbent pads around the spill to prevent liquid escape into the environment or into surface waterbodies. If necessary, create a ditch around the area of the spill or leak, or build a berm to minimize the movement of the spilled product.
8. Shut off all valves to utilities in the area, if they pose a potential risk to the spill clean-up personnel.
9. Block any sewers or drains in the area if they pose a potential risk to the spill clean-up personnel.
10. Place the spill clean-up material into an open top drum or lugger bin, including disposable PPE used in the spill clean-up.
11. Complete a *Spill Report Form* detailing the following:
 - a. Amount of product spilled;
 - b. Name of material spilled if it is known; if the material is unknown, indicate that it is unknown in the log;
 - c. Person who noted the spill;
 - d. Date and time of the spill;
 - e. Estimated volume of spill clean-up material use; and
 - f. Any other relevant details.
12. Forward the incident report/memo to the supervisor for review.
13. Supervisor will make arrangements for proper disposal of spill and spill clean-up material.
14. Attempt to determine the cause of the release and if there is a risk of a future release.
15. Assess and potentially upgrade the level of emergency, if necessary.

6.2 Incidental Discovery of Sensitive or Protected Species Contingency Plan

In the event that wildlife species of concern or their specific habitat are discovered on-site during construction, the following mitigation steps will occur:

1. Suspend work immediately in the vicinity of the newly discovered wildlife species of concern. Work may not resume until the measures below are complete.
2. Notify the Contractor, who will notify the Owner and/or their representative.
3. The Owner, engaging specialist advice as necessary, will assess the potential discovery and either allow construction to resume or proceed by notifying:
 - a. Applicable government agencies, as required; and
 - b. Wildlife Consultants (i.e., Dillon Consulting Limited).
4. The wildlife consultant may deem it necessary to visit the site to develop an appropriate mitigation plan. The mitigation measures available may include:
 - Abiding by seasonal timing constraints within the recommended set back distances;
 - Abiding by daily timing restrictions on construction activities;

- Narrowing the proposed area of disturbance, and protect the site using fencing and signage;
- Altering or delaying construction activities to avoid sensory disturbance (e.g., avoid burning, loud noises, bright lights, etc.);
- Extending road or watercourse bores to avoid or minimize site-specific effect;
- Informing all users of access restrictions in the fenced sites;
- Altering the route to avoid the site;
- Installing nest boxes/platforms and/or replace/enhance habitat during reclamation or restoration; and
- Relocating nests, habitat features, or individuals if practical and monitor post-construction response.

The wildlife or wildlife habitat will be assessed based on the following criteria:

1. The location of the wildlife or wildlife habitat with respect to the proposed construction site;
2. The presence of topographic features or vegetation to effectively screen the wildlife or habitat from the construction activities;
3. The species critical timing restraints in relation to the timing of construction; and
4. The potential to alter construction activities to minimize or avoid sensory disturbance.

References

- Delvin, M. 2018a. Phase I Environmental Site Assessment, New Waste Transfer Station, Iqaluit, NU. Prepared for City of Iqaluit, Project: New Waste Transfer Station, OTT-00248813-A0 by EXP Services Inc.
- Delvin, M. 2018b. Phase II Environmental Site Assessment, New Waste Transfer Station, Iqaluit, NU. Prepared for City of Iqaluit, Project: New Waste Transfer Station, OTT-00248813-A0 by EXP Services Inc.
- Ecological Framework of Canada. 2019. Ecoregions of Canada – Meta Incognita Peninsula. Retrieved from <http://ecozones.ca/english/region/28.html> (accessed 08.05.2019).
- EXP Services Inc. (EXP). 2018. Physical and Biological Assessment, Proposed New Landfill Site, Iqaluit, NU. Prepared for City of Iqaluit, Project: New Landfill Site, OTT-00248813-A0 by EXP Services Inc.
- Northwest Territories Regulations (Nunavut) (NWT Reg). 2006. Spill Contingency Planning and Reporting Regulations, NWT Reg (Nu) 068-93, Retrieved from <https://www.canlii.org/en/nu/laws/regu/nwt-reg-nu-068-93/latest/nwt-reg-nu-068-93.html> (accessed 08.05.2019).
- Nunavut Parks. 2019. Sylvia Grinnell Territorial Park. Retrieved from <https://nunavutparks.com/parks-special-places/sylvia-grinnell-territorial-park/> (accessed 08.05.2019).

Appendix A

Project Contact List

Table 1: Contact Information for Key Project Contacts

CITY OF IQALUIT			
CONTACT	PAGER #	WORK #	CELL #
Dispatch	N/A	979-5650	-
Chief Administrative Officer (CAO)	N/A	979-5666	222-2953
Director of Public Works and Engineering	N/A	975-8509	222-2965
Operations Superintendent, Public Works	N/A	979-5631	222-2956
Manager of Engineering (Vacant)	-	-	-
Utilidor Manager	N/A	979-5632	222-2966
Utilidor on-call	32	N/A	222-3243
Garage/Roads Foreman	N/A	979-5668	N/A
Trucked Services Foreman	N/A	979-5612	222-2947
Owner's Third Party Representative- Dillon Consulting Limited (Keith Barnes)	-	(403)215-8885 ext. 4310	(403)827-6299

EMERGENCY SERVICES		
CONTACT	WORK #	CELL #
Dispatch	979-5650	-
Duty Officer (Fire/Ambulance)	979-4422	-
Fire Chief	979-5657	222-5073
Deputy Fire Chief	979-5650	222-2955
Deputy Fire Chief	979-5650	222-3981
Chief Municipal Enforcement Officer	979-5670	222-5521
RCMP	979-1111 979-0123	
GOVERNMENT RESOURCES- SPILL LINE		
24-Hour Spill Line	Telephone #	(867)920-8130

EXTERNAL ASSISTANCE- GOVERNMENT RESOURCES	
DEPARTMENT	CONTACT #
Environmental Protection, Government of Nunavut	975-5900
Indian and Northern Affairs Canada, Nunavut District Manager	975-4295
Indian and Northern Affairs, Baffin Sub-District	975-4295
Environment and Climate Change Canada, Iqaluit	975-4636
Department of Fisheries and Oceans, Iqaluit	979-8000
Regional Public Health Officer, Government of Nunavut	979-7652

CONTRACTOR	CONTACT #
Baffin Building Systems	979-5903
Kudlik Construction Ltd	979-1166

CONTRACTOR	CONTACT #
Nunavut Excavating Ltd	975-3320
RL Hanson	979-6004
Tower Arctic Ltd.	979-6465
Qikiqtaaluk Environmental	
Nunatta Environmental	

Appendix B

Orders, Permits and Licenses
(to be added when available)

Appendix C

Erosion and Sediment Control Plan (to be added when added)

Appendix C

Environmental Protection Plan –
Operations, Closure and Post-Closure Phase
(under separate cover)



CITY OF IQALUIT

Environmental Protection Plan (Draft) Operations, Closure and Post-Closure Phases

Landfill and Waste Transfer Station

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Appendices

- A Project Contact List
- B Orders, Permits and Licenses (to be added when available)
- C Erosion and Sediment Control Plan (to be added when available)

1.0 Introduction

1.1 Purpose of This Document

This Environmental Protection Plan (EPP) has been prepared as part of an overarching Environmental Management Plan (EMP) and describes the environmental protection measures to be implemented during the operation, closure, and post-closure phases of the City of Iqaluit's (the City's) proposed Waste Transfer Station (WTS) and Landfill. The purpose of the EPP is to be a resource for the City to utilize to avoid or mitigate potential adverse environmental effects to various receptors. This EPP is based on a desktop review of publically available records and site assessments conducted for the Landfill and Transfer Station locations, completed by EXP Services Inc. (Delvin, 2018a; Delvin 2018b; EXP, 2018).

This EPP outlines environmental protection measures, as they relate to facility activities, and provides a reference for environmental inspection staff to support decision-making **during the operations, closure, and post-closure phases of the project.**

Key project contacts (as of May 2019) are provided in **Appendix A.**

1.2 Regulatory Context

The environmental regulatory framework that the project falls under includes:

1. *Fisheries Act;*
2. *Species at Risk Act;*
3. *Canadian Environmental Protection Act;*
4. *Nunavut Wildlife Act;*
5. *Nunavut Environmental Protection Act;* and
6. *Nunavut Waters and Nunavut Surface Rights Tribunal Act.*

2.0 Project Roles and Responsibilities

The following section outlines the roles and responsibilities of the City. These responsibilities include reporting, notifications, guidelines on documentation and incident reporting.

City of Iqaluit - Owner

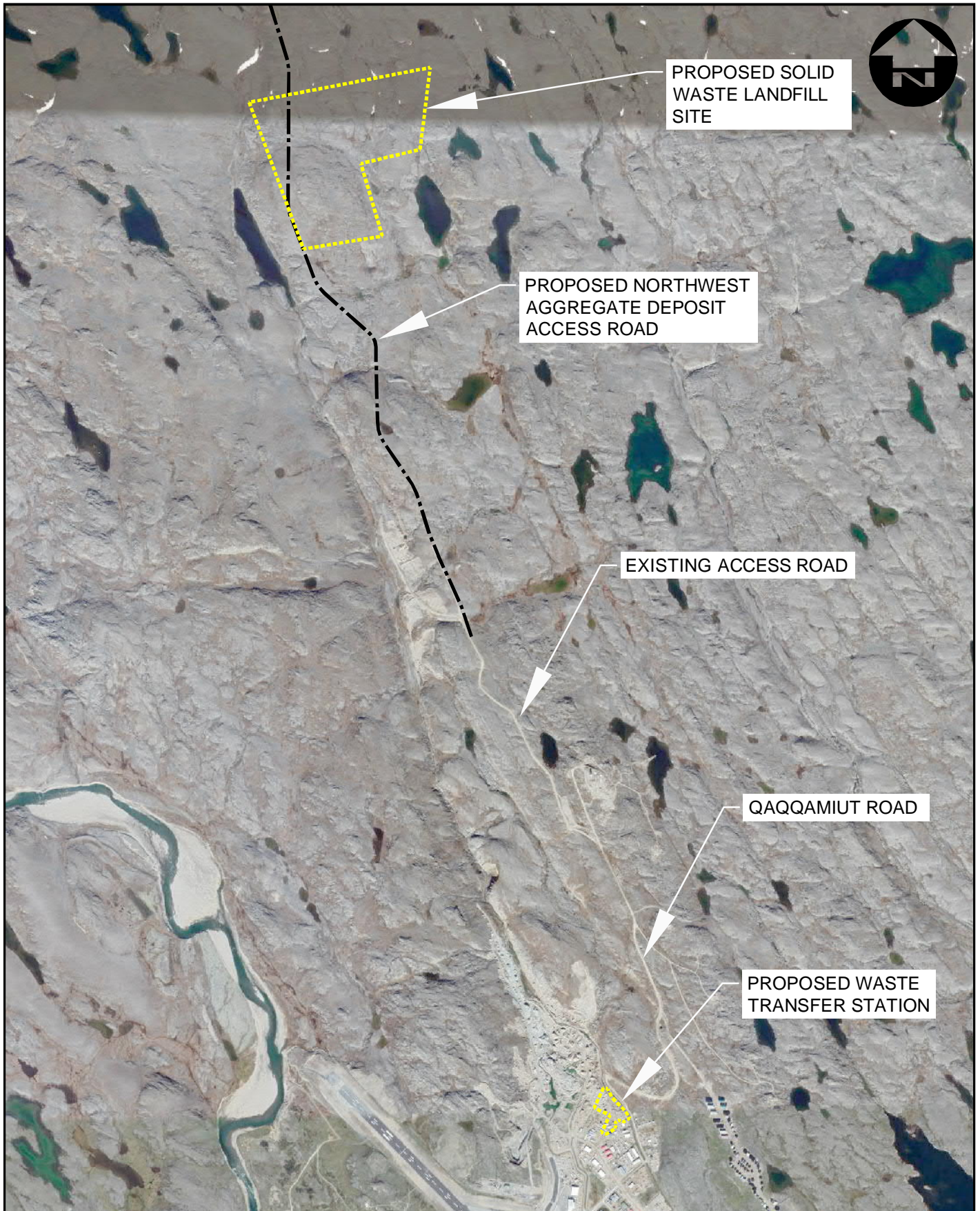
As the Operator of the Landfill and Transfer Station, the City will be responsible for ensuring that employees are made aware of the EPP and associated plans, and that the commitments contained therein are implemented. The City is responsible for ensuring that associated regulations are met, and providing guidance and technical support to on-site personnel with respect to environmental compliance.


3.0 Environmental Considerations

The environmental setting of the project areas (**Figure 3-1**) was assessed using a desktop review of publically-available records and site assessments completed by EXP Services Inc. (Delvin, 2018a; Delvin 2018b; EXP, 2018). The two sites are located in the Meta Incognita Peninsula Ecoregion, which is characterized by rock outcroppings interspersed with sandy morainal veneers and frozen organic deposits, static cryosols with turbic and organic cryosol soils, and continuous permafrost with mainly medium ice content (Ecological Framework of Canada, 2019).

The Landfill site is approximately 22 ha in size, consisting predominantly of rolling hills with some bedrock outcrops in the south central region, small glacio-fluvial terraces in the northwest region, and boulder fields in the northwest and central portions of the site (EXP, 2018). The Transfer Station location is an industrial site, within the City, and is approximately 2.4 ha in size, covered by fill consisting of sand and gravel with boulders and cobbles (Delvin, 2018a; Delvin 2018b).

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 DILLON CONSULTING	PROJECT IQALUIT LANDFILL AND WASTE TRANSFER STATION	PROJECT NO. 19-9543
	TITLE SITE LOCATIONS	FIGURE NO. 3-1
DATE JUNE 2019		

3.1 Species at Risk or Species of Special Status

The following Species at Risk (SAR) or species of special status (see **Table 3-1**) have the potential to be impacted by the proposed project:

Table 3-3-1: Wildlife Species at Risk

Common Name	Scientific Name	COSEWIC Status	SARA Status	Schedule 1
Caribou (barren-ground population)	Rangifer tarandus	Threatened	No Status	No
Harlequin Duck	Histrionicus histrionicus	Special Concern	Special Concern	Yes
Polar Bear	Ursus maritimus	Special Concern	Special Concern	Yes
Red Knot (rufa subspecies)	Calidris canutus rufa	Endangered	Endangered	Yes
Red-necked Phalarope	Phalaropus lobatus	Special Concern	No Status	No
Ross's Gull	Rhodostethia rosea	Threatened	Threatened	Yes
Wolverine	Gulo gulo	Special Concern	Special Concern	Yes

While not all of the listed species were identified at the time the surveys were conducted at the sites, these species are known to live in the area, and could be present or visit the sites during the lifespan of this project.

4.0

Environmental Protection Measures

The purpose of this section is to provide specific mitigation measures for the City to implement or confirm implementations, in order to avoid or reduce potential environmental impacts. The mitigation measures outlined in **Table 4-1** are to be implemented in the operations, closure and post-closure phases of the project. The operations phase describes the time from when normal operations begin, following construction, until the closure and decommissioning begins. Mitigation measures for the City to implement during the operations phase of the project are outlined in **Table 4-2** below. The mitigation measures to implement during the closure phase of the project, which describes the point in time when normal operations cease until when the closure and decommissioning activities end, are outlined in **Table 4-3**. The mitigation measures to implement during the post-closure phase are outlined in **Table 4-4**. Within each table, the mitigation measures are sorted by issue/activity. Revisions of specific mitigation measures outlined in the EPP may be required to address unforeseen site-specific conditions or as a result of ongoing operations.

Applicable Orders, Permits and Licenses for the project are provided in **Appendix B**.

Table 4-1: Mitigation Measures for Post-Construction Phases

Issue/Activity	Mitigation Measures
Work Progress Schedule	<ol style="list-style-type: none"> 1. Works must be conducted according to regulatory approvals, permits and licenses obtained for the work. These documents shall be displayed at each work site. 2. Adhere to planned project scheduling as outlined in the applicable regulatory permits and approvals. 3. Schedule and conduct activities to adhere to applicable timing windows and avoid restricted activity periods, where feasible. 4. A copy of this EPP and its included plans, regulatory approvals, permits, and/or licenses will be available on-site at all times.
Documentation	<ol style="list-style-type: none"> 5. Maintain an up-to-date documentation record of all site activities related to monitoring, site inspections, maintenance, repairs and remedial actions. 6. Document all incidences of nuisance activity, including illegal dumping, nuisance animals and fires. 7. Document complaints received from individuals, public agencies and project staff.
Nuisance Control	<ol style="list-style-type: none"> 8. Report incidences of illegal dumping to the Manager of Solid Waste and the appropriate legal personnel. 9. Report incidences of nuisance animals to the Manager of Solid Waste and take the appropriate avoidance/deterrence measures. 10. Report incidences of fires on-site to the Manager of Solid Waste and contact the appropriate emergency services
Discipline	<ol style="list-style-type: none"> 11. Workers who shows careless or wanton neglect of the environment or disregards requirements put forward in the EPP will be identified, the incident recorded and the Manager of Solid Waste will take appropriate action.
Environmental Training	<ol style="list-style-type: none"> 12. Environmental training will be provided to facility staff, as part of the site orientation, prior to starting work.

Table 4-2: Mitigations Measures for Site Operations

Issue/Activity	Mitigation Measures
Work Areas	1. Project activities must occur within the approved workspace.
Drainage Control	2. Ensure operation activities do not obstruct natural drainage, where possible. If avoidance is not possible, facilitate drainage around the work area. 3. Interceptor ditches and sumps are to be maintained free of accumulated sediment. Inspections are to be carried out regularly; cleaning to occur as required.
Erosion and Sediment Control*	4. Erosion and sediment controls shall be installed prior to activities in areas susceptible to erosion. 5. If activities involve ground disturbance within 100 m of any watercourse or wetland, erosion control structures must be installed between the natural areas and the work areas to create separation of the work area, as required. 6. Erosion and sediment control measures are to be left in place, where feasible, until all work is complete and the site has been stabilized. 7. Erosion and sediment control measures are to be routinely inspected and maintained in proper working order. 8. Erosion and sediment control measures are not static and may need to be upgraded and/or amended as directed by the Regulators, as site conditions change. 9. The City shall repair failed erosion and sediment control measures as soon as possible. 10. If drifting soils or topsoil loss is evident in areas prone to wind erosion, conduct the following, as appropriate: <ul style="list-style-type: none"> • Suspend topsoil stripping operations during high winds; • Apply a tackifier to the stripped topsoil pile; and/or • Install wind barriers. 11. Topsoil handling will be suspended during high winds when soil erosion is evident and during heavy rains, if soil becomes saturated. Topsoil will not be handled until winds have decreased and/or topsoil has drained and dried.
Fuel and Hazardous Material Storage	12. Hazardous materials must be labeled, stored, and handled according to Workplace Hazardous Materials Information System (WHMIS) regulations. 13. Fuel storage containers and tanks will be appropriately labeled. 14. Adequate spill response materials are available and accessible at the site. 15. Fuel containers and filters must be stored in secondary containment. 16. Jerry cans and other mobile fuel containers must always be stored in secondary containment while being used and returned to the storage area, as soon as feasible following use. 17. Refueling points and fuel storage tanks, including secondary containment and gas cans, will be inspected regularly. All leaks must be repaired immediately.

Issue/Activity	Mitigation Measures
Equipment Refueling and Servicing	<ul style="list-style-type: none"> 18. Regularly inspect and maintain all heavy equipment and vehicles used during site operation, including fuel transfer hoses and fuel/oil lines, to ensure that the systems are in good condition and free of leaks. Equipment or vehicles with deficiencies will be taken out of service and repaired. 19. Refueling equipment will be attended at all times while refueling. 20. Refueling of equipment will not take place within 30 m of any wetland or watercourse. 21. Drip trays are to be in place while refueling occurs to contain overfilling, drips and spills. 22. All vehicle servicing with the potential for accidental spills shall take place above an impervious tarp, and servicing will not take place within 30 m of wetlands or watercourses. 23. Spill kits should be accessible while refueling. 24. Spill mats and/or drip pans/trays will be placed under all mobile fueling containers. 25. Staff will notify the Facility Supervisor, as soon possible, following the discovery of a spill of any volume. The Facility Supervisor will subsequently contact the Manager of Solid Waste with the information. 26. The Manager of Solid Waste will notify regulatory agencies and community liaisons, where required, to notify them of the spill. 27. A written spill report must be submitted to the Manager of Solid Waste within 24 hours of any spill. Inspect hydraulic, fuel and lubrication systems of equipment on a regular basis to ensure that the systems are in good condition and free of leaks. 28. All fuel containers or filters must be stored in secondary containment. 29. Refueling equipment will be attended at all times while refueling. 30. Refueling of equipment will not take place within 30 m of any wetland or watercourse.
Spill Response, Reporting and Notification	<ul style="list-style-type: none"> 31. Drip trays are to be in place while refueling occurs to contain overfilling, drips and spills. 32. All vehicle servicing with the potential for accidental spills shall take place above an impervious tarp, and servicing will not take place within 30 m of wetlands or watercourses. 33. Spill kits should be accessible while refueling. 34. Regular inspection and maintenance will be conducted for all heavy equipment and vehicles used for the project, including fuel transfer hoses and fuel/oil lines. Equipment or vehicles with deficiencies will be taken out of service and repaired. 35. Hazardous materials must be labeled, stored and handled according to WHMIS regulations. 36. Spill mats and/or drip pans/trays will be placed under all mobile fueling containers, equipment, and vehicles, when not in use or parked for longer than two hours.
Air Emissions	<ul style="list-style-type: none"> 37. Ensure equipment and vehicles are well maintained. 38. Notify the Manager of Solid Waste of any odour complaints that may be received by project personnel, public agencies or individuals.
Noise	<ul style="list-style-type: none"> 39. Ensure equipment and vehicles are in good working order with proper noise abatement equipment (i.e., mufflers or enclosures).
Light Emissions	<ul style="list-style-type: none"> 40. Lighting will be restricted to the minimum required to complete the works safely. 41. Lighting will be directed to the work area to reduce light pollution during dark hours to the extent feasible.

Issue/Activity	Mitigation Measures
Wildlife Encounters and Sightings	<p>42. Feeding or harassing wildlife is prohibited.</p> <p>43. Travel within posted speed limits and yield to wildlife.</p> <p>44. Report incidents of collisions or close calls with wildlife to the Manager of Solid Waste.</p> <p>45. Notify the Manager of Solid Waste of the following wildlife sightings:</p> <ul style="list-style-type: none"> Any suspected species at risk or suspected species of special status, which are listed in Table 3-1; Any dead or sick/diseased wildlife; and Any food caches, dens, or nests found within or close to the site. <p>46. The Government of Nunavut will be notified of wildlife encounters by the Manager of Solid Waste when required.</p> <p>47. If previously unidentified listed or sensitive wildlife species or their site-specific habitat (e.g., dens, nests) are identified during operation, report the sighting to the Manager of Solid Waste and implement the Wildlife Species of Concern Discovery Contingency Plan (Section 6.2).</p>
Water Management	<p>48. Water taking/withdrawal can only be carried out while personnel are on-site or nearby, allowing for regular inspection and maintenance of the pumping and discharge system.</p> <p>49. Prior to discharging any water to the environment, the water must be inspected for any signs of contaminants. If signs of contaminants are present the water must be collected and hauled to a disposal facility or sampled and analyzed to determine if the water meets Canadian Council of Ministers of the Environment water quality guidelines for the protection of aquatic life.</p> <p>50. Water is to be discharged using pumps that will be directed to sediment removal materials (i.e., filter bag) or water settlement areas, in low-lying, vegetated areas at least 30 m away from a watercourse or wetland. At no time shall water be discharged directly into a watercourse or wetland. Dewatering volumes are to be monitored and recorded daily.</p> <p>51. Where possible, discharge locations should be chosen that are near the dewatered area to maintain the local water table elevation.</p> <p>52. Suitable discharge locations will be reviewed and confirmed by the Manager of Solid Waste.</p>

Issue/Activity	Mitigation Measures
Watercourse Protection	<p>53. Install effective erosion control and sediment control measures before starting work near a waterbody.</p> <p>54. Wash, refuel, and service machinery, and store fuel and other materials for the machinery in such a way that prevent any deleterious substances from entering the water.</p> <p>55. Schedule work to avoid wet, windy, and rainy periods that may cause erosion and sedimentation.</p> <p>56. Notify the Manager of Solid Waste if any suspected contamination is discovered in or near a waterbody, who will initiate the applicable investigation and sampling to be completed to confirm suspect soil or water:</p> <ul style="list-style-type: none"> • Soil or slurry material should be considered contaminated if any of the following are found: <ul style="list-style-type: none"> ○ Oil residue; ○ Gaseous odour; ○ Discoloured soil; and/or ○ Sheen on water. • Upon discovery of potential impacted soil or water, staff will consult with the Manager of Solid Waste to determine proper sampling requirements. • If required, the Manager of Solid Waste will notify the applicable regulators of the newly discovered impacts. • Contaminated materials will be disposed of in accordance with the Waste Management Plan.
Leachate Management	<p>57. Complete leachate management activities in accordance with the Operations and Maintenance Manual (under separate cover).</p>
Landfill Gas Management	<p>58. Complete landfill gas management activities in accordance with the Operations and Maintenance Manual (under separate cover).</p>
Waste Handling and Disposal	<p>59. Appropriate waste disposal facilities for each waste type to be produced by the project must be identified by the Manager of Solid Waste.</p> <p>60. All waste leaving the site must be accompanied with an appropriate waybill, bill of lading or waste manifest. Consult with the Manager of Solid Waste to determine what type of paperwork is required.</p> <p>61. Notify waste disposal facilities of waste shipments prior to leaving the site and determine if any there are facility sampling requirements.</p> <p>62. All sewage and solid waste will be contained and sealed in watertight containers.</p> <p>63. Tanks used for transporting greywater will be watertight, and will be regularly and properly inspected and maintained by the operator.</p>

Issue/Activity	Mitigation Measures
Transportation	<ol style="list-style-type: none"> 64. Vehicle use on public roads and project access routes will be in accordance with applicable laws and road use agreements (e.g., load restrictions). 65. Regularly inspect and maintain vehicles to keep them in proper working order. 66. Drivers must maintain an up-to-date transportation documentation system and carry the appropriate transportation documents (e.g., drivers licence, bill of lading, waybill, log book, etc.). 67. Vehicles will not exceed speed limits established for the area and will lower speeds in specific conditions such as areas of high erosion hazard. 68. Vehicles must yield to wildlife. 69. Personnel will avoid unnecessary wheel spin when traveling or operating on soil. 70. Do not necessarily idle vehicles or equipment. 71. Secure all loads with the appropriate tie-down equipment or load covers, and inspect the load immediately prior to commencing driving and once arriving at the destination. 72. If the load becomes unstable, immediately cease driving and re-secure the load 73. If a loss-of-load occurs, report the incident to the Manager of Solid Waste and seek guidance about the appropriate procedures moving forward. 74. If a vehicle or equipment breaks down during transportation, report the incident to the Manager of Solid Waste and seek assistance to fix the broken machinery. Do not operate the broken vehicle or equipment until it is in proper working order again. 75. If a vehicle or equipment get into an accident or encounters an accident during transportation, immediately contact the appropriate emergency services and report the incident to the Manager of Solid Waste. 76. Notify the Manager of Solid Waste of any noise complaints that may be received by project personnel, public agencies, or individuals.

Table 4-3: Mitigation Measures for Closure

Issue/Activity	Mitigation Measures
Work Areas	<ol style="list-style-type: none"> 1. Project activities must occur within the approved workspace.
Work Schedule	<ol style="list-style-type: none"> 2. Schedule closure and decommissioning activities to reduce interference with migratory bird restrictions and fish habitat timing restriction, as much as practical.
Reclamation	<ol style="list-style-type: none"> 3. Complete reclamation of the work areas in accordance with the Closure and Decommissioning Plan (under separate cover). 4. Restore any trails used by traditional land users that were impacted by the project.
Debris Removal	<ol style="list-style-type: none"> 5. Remove all debris and bins from the work area.
Drainage Control	<ol style="list-style-type: none"> 6. Ensure activities do not obstruct natural drainage, where possible. If avoidance is not possible, facilitate drainage around the work area. 7. Grade to establish a minimum slope of 3% across the top of the waste fill area to allow surface water drainage off-site and to discourage infiltration, leachate production, and erosion.

Issue/Activity	Mitigation Measures
<p>Erosion and Sediment Control*</p> <p><i>*: noted as a low potential activity of concern given local soil conditions.</i></p>	<ol style="list-style-type: none"> 8. Soil disturbance will only occur within the designated areas of the project. 9. Erosion and sediment control measures shall be installed prior to commencing excavations or work in areas susceptible to erosion. 10. If activities involve ground disturbance within 100 m of any water course or wetland, erosion control structures must be installed between the natural areas and the work areas to create separation of the work area, as required. 11. Erosion and sediment control measures are to be left in place, where feasible, until all work is complete and the site has been stabilized. 12. Erosion and sediment control measures are to be routinely inspected and maintained in proper working order. 13. The City shall repair failed erosion and sediment control measures, as soon as possible. 14. Erosion and sediment control measures are not static and may need to be upgraded and/or amended, as directed by the Regulators, as site conditions change. 15. Topsoil handling will be suspended during high winds when soil and erosion is evident, and during heavy rains if soil becomes saturated. Topsoil will not be handled until winds have decreased and/or topsoil has drained and dried. 16. If drifting soils or topsoil loss is evident in areas prone to wind erosion, conducting the following, as appropriate: <ul style="list-style-type: none"> • Suspend topsoil disturbed activities during high winds; • Apply a tackifier to the disturbed topsoil; and/or • Install wind barriers.
<p>Fuel and Hazardous Material Storage</p>	<ol style="list-style-type: none"> 17. Hazardous materials must be labeled, stored, and handled according to WHMIS regulations. 18. Fuel storage containers and tanks will be appropriately labeled. 19. Adequate spill response materials are available and accessible at the site. 20. Fuel containers and filters must be stored in secondary containment. 21. Jerry cans and other mobile fuel containers must always be stored in secondary containment while being used and returned to the storage area, as soon feasible following use. 22. Refueling points and fuel storage tanks, including secondary containment and gas cans, will be inspected regularly. All leaks must be repaired immediately.
<p>Equipment Refueling and Servicing</p>	<ol style="list-style-type: none"> 23. Regularly inspect and maintain all heavy equipment and vehicles used during site operations, including fuel transfer hoses and fuel/oil lines, to ensure that the systems are in good condition and free of leaks. Equipment or vehicles with deficiencies will be taken out of service and repaired. 24. Refueling equipment will be attended at all times, while refueling. 25. Refueling of equipment will not take place within 30 m of any wetland or watercourse. 26. Drip trays are to be in place while refueling occurs to contain overfilling, drips and spills. 27. All vehicle servicing with the potential for accidental spills shall take place above an impervious tarp, and servicing will not take place within 30 m of wetlands or watercourses. 28. Spill kits should be accessible while refueling. 29. Spill mats and/or drip pans/trays will be placed under all mobile fueling containers.

Issue/Activity	Mitigation Measures
Spill Response, Reporting and Notification	<p>30. Staff will notify the Facility Supervisor, as soon possible, following the discovery of a spill of any volume.</p> <p>31. The Manager of Solid Waste will notify regulatory agencies and community liaisons where required to notify them of the spill.</p> <p>32. A written spill report must be submitted to the Manager of Solid Waste within 24 hours of any spill. Inspect hydraulic, fuel and lubrication systems of equipment on a regular basis to ensure that the systems are in good condition and free of leaks.</p> <p>33. All fuel containers or filters must be stored in secondary containment.</p> <p>34. Refueling equipment will be attended at all times while refueling.</p> <p>35. Refueling of equipment will not take place within 30 m of any wetland or watercourse.</p> <p>36. Drip trays are to be in place while refueling occurs to contain overfilling, drips and spills.</p> <p>37. All vehicle servicing with the potential for accidental spills shall take place above an impervious tarp, and servicing will not take place within 30 m of wetlands or watercourses.</p> <p>38. Spill kits should be accessible while refueling.</p> <p>39. Regular inspection and maintenance will be conducted for all heavy equipment and vehicles used for the project, including fuel transfer hoses and fuel/oil lines. Equipment or vehicles with deficiencies will be taken out of service and repaired.</p> <p>40. Hazardous materials must be labeled, stored, and handled according to WHMIS regulations.</p> <p>41. Spill mats and/or drip pans/trays will be placed under all mobile fueling containers and under equipment and vehicles when not in use or parked for longer than two hours.</p>
Air Emissions	<p>42. Do not unnecessarily idle vehicles or equipment.</p> <p>43. Ensure equipment is well maintained.</p> <p>44. Notify the Manager of Solid Waste of any odour complaints that may be received by project personnel, public agencies, or individuals.</p>
Noise	<p>45. Ensure equipment and machinery is in good working order with proper noise abatement equipment (i.e. mufflers or enclosures).</p>
Light Emissions	<p>46. Lighting will be restricted to the minimum required to complete the works safely.</p> <p>47. Lighting will be directed to the work area to reduce light pollution during dark hours to the extent feasible.</p>
Wildlife Encounters and Sightings	<p>48. Feeding or harassing wildlife is prohibited.</p> <p>49. Travel within posted speed limits and yield to wildlife.</p> <p>50. Report incidents of collisions or close calls with wildlife to the Manager of Solid Waste.</p> <p>51. Notify the Manager of Solid Waste of the following wildlife sightings:</p> <ul style="list-style-type: none"> • Any suspected species at risk or suspected species of special status, which are listed in Table 3-1; • Any dead or sick/diseased wildlife; and • Any food caches, dens, or nests found within or close to site. <p>52. The Government of Nunavut will be notified of wildlife encounters by the Manager of Solid Waste when required.</p> <p>53. If previously unidentified listed or sensitive wildlife species or their site-specific habitat (e.g., dens, nests) are identified during operation, report the sighting to the Manager of Solid Waste and implement the Wildlife Species of Concern Discovery Contingency Plan (Section 6.2).</p>

Issue/Activity	Mitigation Measures
Transportation	<p>54. Vehicle use on public roads and project access routes will be in accordance with applicable laws and road use agreements (e.g., load restrictions).</p> <p>55. Drivers must maintain an up-to-date transportation documentation system and carry the appropriate transportation documents (e.g., drivers licence, bill of lading, waybill, log book, etc.).</p> <p>56. Vehicles will not exceed speed limits established for the area and will lower speeds in specific conditions such as areas of high erosion hazard.</p> <p>57. Personnel will avoid unnecessary wheel spin when traveling or operating on soil.</p> <p>58. Do not necessarily idle vehicles or equipment.</p> <p>59. Ensure equipment and machinery is in good working order.</p> <p>60. Secure all loads with the appropriate tie-down equipment or load covers, and inspect the load immediately prior to commencing driving and once arriving at the destination.</p> <p>61. If the load becomes unstable, immediately cease driving and re-secure the load</p> <p>62. If a loss-of-load occurs, report the incident to the Manager of Solid Waste and seek guidance about the appropriate procedures moving forward.</p> <p>63. If a vehicle or equipment breaks down during transportation, report the incident to the Manager of Solid Waste and seek assistance to fix the broken machinery. Do not operate the broken vehicle or equipment until it is in proper working order again.</p> <p>64. If a vehicle or equipment get into an accident or encounters an accident during transportation, immediately contact the appropriate emergency services and report the incident to the Manager of Solid Waste.</p> <p>65. Notify the Manager of Solid Waste of any noise complaints that may be received by project personnel, public agencies, or individuals.</p>
Leachate Management	<p>66. Monitor and maintain the leachate collection and removal systems regularly.</p> <p>67. Implement appropriate system updates/upgrades, as necessary.</p>
Gas Management	<p>68. Monitor and maintain landfill gas collection and controls regularly.</p> <p>69. Implement appropriate system updates/upgrades, as necessary.</p>
Waste Handling and Disposal	<p>70. Appropriate waste disposal facilities for each waste type to be produced by the project must be identified by the Manager of Solid Waste.</p> <p>71. All waste leaving the site must be accompanied with an appropriate waybill, bill of lading or waste manifest. Consult with the Manager of Solid Waste to determine what type of paperwork is required.</p> <p>72. Notify waste disposal facilities of waste shipments prior to leaving the site and determine if any there are facility sampling requirements.</p> <p>73. All sewage and solid waste will be contained and sealed in watertight containers.</p> <p>74. Tanks used for transporting greywater will be watertight, and will be regularly and properly inspected and maintained by the operator.</p>
Vegetation	<p>75. Prepare the site in such a manner as to facilitate natural vegetation establishment.</p>
Hazardous Material Monitoring	<p>76. Before final grading and the installation of the site cover occurs, conduct a hazardous material assessment to determine if there is contamination on-site. The assessment should include air, soil, surface water and groundwater sampling.</p> <p>77. Report any contamination to the Manager of Solid Waste and in the report describe the type, extent, degree, and approximate volume of the contamination.</p> <p>78. Wear the appropriate personal protective equipment (PPE) while conducting the hazardous material assessment.</p>

Table 4-4: Mitigation Measures for Post-Closure

Issue/Activity	Mitigation Measures
Drainage Control	1. Monitor the final cover integrity and make repairs/additions, as appropriate. 2. Monitor the site for low areas resulting from soil settlement or subsidence of the site. Fill these areas with soil to restore the desired site topography, where appropriate.
Erosion and Sediment Control	3. Monitor for erosion of top soils and implement erosion control measures, where appropriate. 4. Monitor long-term erosion and sediment control structures and make repairs, as necessary.
Leachate Management	5. Monitor and maintain the leachate collection and removal systems regularly. 6. Implement appropriate system updates/upgrades, as necessary.
Gas Management	7. Monitor and maintain landfill gas collection and controls regularly. 8. Implement appropriate system updates/upgrades, as necessary.
Vegetation	9. Maintain site vegetation and implement vegetation additions, removals, and cutting activities, where appropriate.
Hazardous Material Monitoring	10. Monitor surface water annually and report all incidences of contamination to the Manager of Solid Waste. 11. Monitor groundwater (active layer) for leachate and site contamination. Report all incidences of contamination to the Manager of Solid Waste. 12. Wear the appropriate PPE while conducting the site monitoring activities.

5.0

Monitoring and Inspection

As a responsibility of the City of Iqaluit, monitoring and inspection activities are to be conducted during the operations, closure, and post-closure phases of the project to assess any impacts to the surrounding environment and habitat. It is imperative that spills and other incidents, which negatively impact the environment and wildlife, are reported immediately. If a site characteristic is deemed problematic, appropriate mitigation measures will be implemented. There may be a need to revise specific monitoring and inspection activities outlined below to address unforeseen site-specific conditions or as a result of ongoing operations.

6.0

Contingency and Emergency Response Plan

6.1

Spill Response Plan

The following sections contain spill response plans for small and large spills. Mitigation measures pertaining to Fuel and Hazardous Material Storage, Equipment Refueling and Servicing and Spill Response, Reporting, and Notification is found in **Section 4.0 - Environmental Protection Measures**.

6.1.1

Small Spills/Leaks

Spills or leaks less than 20 L are considered a small spill and the following procedure must be followed:

1. The first observer will check the immediate area for any affected or injured personnel, and will inform the Manager of Solid Waste as soon as possible.
2. The Manager of Solid Waste will:
 - a. Ensure activity in the area is restricted to guarantee the safety of the personnel cleaning up the spill.
 - b. Direct staff to take appropriate emergency environmental protection measures such as placing booms, barrier, or absorbent pads around the spill to prevent liquid escape into the environment or into surface waterbodies.
 - c. Shovel the spilled material and clean-up debris into a drum, bin, or bag;
 - d. Label the container(s) as "Spill Material" along with the spilled substance and date. Place it in a safe storage area.
 - e. Notify the Department of Environment for the Government of Nunavut and take their direction as appropriate.
 - f. Complete a *Spill Report Form* detailing the following:
 - i. Amount of product spilled;
 - ii. Name of material spilled if known. If the material is unknown, indicate as such in the log;
 - iii. Person who discovered the spill;
 - iv. Date and time of the spill;
 - v. Estimated volume of spill clean-up material used; and
 - vi. Any other relevant details.
 - g. Forward the incident report/memo to the supervisor for review; and
 - h. Attempt to determine the cause of the release, if risk to further release exists, and if feasible, mitigate the cause to prevent further releases.

6.1.2

Large Spills/Leaks

Spills or leaks greater than 20 L are considered a large spill. For a large spill, the following procedure must be followed:

1. The first observer will check the immediate area for any affected or injured personnel and will inform the Emergency Coordinator as soon as possible.

2. The Manager of Solid Waste will take control of the emergency and complete the remaining steps:
3. Clear all personnel out of the area.
4. Notify the Department of Environment for the Government of Nunavut and take direction from the Department or their designated authority.
5. If over 100 L of fuel is spilled, or the spill volume is unknown, by law it must be reported to the Government of Nunavut. Report a spill in one of the following two ways:
 - a. Call the 24-Hour Spill Report Line at 867-920-8130, or
 - b. Complete the *Spill Report Form* from the Nunavut Government in **Appendix E** and then fax it to 867-873-6924 or email it to spills@gov.nt.ca.
6. For other Schedule B Contaminants (NWT Reg, 2006), if greater than the reference amount of contaminant was spilled or you are unaware of how much was spilled, by law it must be reported to the Government of Nunavut. To report a spill of Schedule B Contaminants, phone the 24-Hour spill Report Line at 867-920-8130. A list of Schedule B Contaminants and the reference spill volumes (NWT Reg, 2006) are presented in **Table 6-1**.

Table 6-1: Schedule B Contaminant Reference Spill Amounts

TDGA Class	Description of Contaminant	Amount Spilled
1	Explosives	Any amount
2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity greater than 100 L
2.2	Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L
2.3	Compressed gas (toxic)	Any amount
2.4	Compressed gas (corrosive)	Any amount
3.1, 3.2, 3.3	Flammable liquid	100 L
4.1	Flammable solid	25 kg
4.2	Spontaneously combustible solids	25 kg
4.3	Water reactant solids	25 kg
5.1	Oxidizing substances	50 L or 50 kg
5.2	Organic peroxides	1 L or 1 kg
6.1	Poisonous substances	5 L or 5 kg

1. Use appropriate personal protective equipment (PPE) for proper handling of material;
2. If there is danger due to exposure, fire, explosion, or if public safety, the Manager of Solid Waste will suspend operation. All personnel should evacuate to the Emergency Muster Area. If the Emergency Muster Area is an unsafe area due to the conditions, personnel must proceed to an Alternative Muster Area.
 - a. The Facility Manager should take attendance from preprinted list.
 - b. Phone and seek guidance from the 24-Hour Spill Report Line at (867-920-8130).

3. If the chemical spill is too dangerous or toxic to handle with equipment on-site or if it appears to be dangerous, reactive, or unknown, contact the 24-Hour Spill Report Line (867-920-8130) for guidance and assistance.
4. If safe to do so, direct staff to take appropriate emergency environmental protection measures such as placing booms, barrier, or absorbent pads around the spill to prevent liquid escape into the environment or into surface waterbodies. If necessary, create a ditch around the area of the spill or leak, or build a berm to minimize the movement of the spilled product.
5. Shut off all valves to utilities in the area, if they pose a potential risk to the spill clean-up personnel.
6. Block any sewers or drains in the area if they pose a potential risk to the spill clean-up personnel.
7. Place the spill clean-up material into an open top drum or lugger bin, including disposable PPE used in the spill clean-up.
8. Complete a *Spill Report Form* detailing the following:
 - a. Amount of product spilled;
 - b. Name of material spilled if it is known; if the material is unknown, indicate that it is unknown in the log;
 - c. Person who noted the spill;
 - d. Date and time of the spill;
 - e. Estimated volume of spill clean-up material use; and
 - f. Any other relevant details.
9. Forward the incident report/memo to the Manager of Solid Waste for review.
10. The Manager of Solid Waste will make arrangements for proper disposal of spill and spill clean-up material.
11. Attempt to determine the cause of the release and if there is a risk of a future release.
12. Assess and potentially upgrade the level of emergency, if necessary.

6.2 Incidental Discovery of Sensitive or Protected Species Contingency Plan

In the event that wildlife species of concern or their specific habitat are discovered on-site during construction, the following mitigation steps will occur:

1. Suspend work immediately in the vicinity of the newly discovered wildlife species of concern. Work may not resume until the measures below are complete.
2. Notify the Manager of Solid Waste, who will notify the Director of Engineering and Public Works.
3. The Manager of Solid Waste, engaging specialist advice as necessary, will assess the potential discovery and either allow construction to resume or proceed by notifying:
 - a. Applicable government agencies, as required; and
 - b. Wildlife Consultants.
4. The wildlife consultant may deem it necessary to visit the site to develop an appropriate mitigation plan. The mitigation measures available may include:
 - Abiding by seasonal timing constraints within the recommended set back distances;
 - Abiding by daily timing restrictions on construction activities;

- Narrowing the proposed area of disturbance, and protect the site using fencing and signage;
- Altering or delaying construction activities to avoid sensory disturbance (e.g., avoid burning, loud noises, bright lights, etc.);
- Extending road or watercourse bores to avoid or minimize site-specific effect;
- Informing all users of access restrictions in the fenced sites;
- Altering the route to avoid the site;
- Installing nest boxes/platforms and/or replace/enhance habitat during reclamation or restoration; and
- Relocating nests, habitat features, or individuals if practical and monitor post-construction response.

The wildlife or wildlife habitat will be assessed based on the following criteria:

1. The location of the wildlife or wildlife habitat with respect to the proposed construction site;
2. The presence of topographic features or vegetation to effectively screen the wildlife or habitat from the construction activities;
3. The species critical timing restraints in relation to the timing of construction; and
4. The potential to alter construction activities to minimize or avoid sensory disturbance.

References

- Delvin, M. 2018a. Phase I Environmental Site Assessment, New Waste Transfer Station, Iqaluit, NU. Prepared for City of Iqaluit, Project: New Waste Transfer Station, OTT-00248813-A0 by EXP Services Inc.
- Delvin, M. 2018b. Phase II Environmental Site Assessment, New Waste Transfer Station, Iqaluit, NU. Prepared for City of Iqaluit, Project: New Waste Transfer Station, OTT-00248813-A0 by EXP Services Inc.
- Ecological Framework of Canada. 2019. Ecoregions of Canada – Meta Incognita Peninsula. Retrieved from <http://ecozones.ca/english/region/28.html> (accessed 08.05.2019).
- EXP Services Inc. (EXP). 2018. Physical and Biological Assessment, Proposed New Landfill Site, Iqaluit, NU. Prepared for City of Iqaluit, Project: New Landfill Site, OTT-00248813-A0 by EXP Services Inc.
- Northwest Territories Regulations (Nunavut) (NWT Reg). 2006. Spill Contingency Planning and Reporting Regulations, NWT Reg (Nu) 068-93, Retrieved from <https://www.canlii.org/en/nu/laws/regu/nwt-reg-nu-068-93/latest/nwt-reg-nu-068-93.html> (accessed 08.05.2019).
- Nunavut Parks. 2019. Sylvia Grinnell Territorial Park. Retrieved from <https://nunavutparks.com/parks-special-places/sylvia-grinnell-territorial-park/> (accessed 08.05.2019).

Appendix A

Project Contact List

Table 1: Contact Information for Key Project Contacts

CITY OF IQALUIT			
CONTACT	PAGER #	WORK #	CELL #
Dispatch	N/A	979-5650	-
Chief Administrative Officer (CAO)	N/A	979-5666	222-2953
Director of Public Works and Engineering	N/A	975-8509	222-2965
Operations Superintendent, Public Works	N/A	979-5631	222-2956
Manager of Engineering (Vacant)	-	-	-
Utilidor Manager	N/A	979-5632	222-2966
Utilidor on-call	32	N/A	222-3243
Garage/Roads Foreman	N/A	979-5668	N/A
Trucked Services Foreman	N/A	979-5612	222-2947
Owner's Third Party Representative- Dillon Consulting Limited (Keith Barnes)	-	(403)215-8885 ext. 4310	(403)827-6299

EMERGENCY SERVICES		
CONTACT	WORK #	CELL #
Dispatch	979-5650	-
Duty Officer (Fire/Ambulance)	979-4422	-
Fire Chief	979-5657	222-5073
Deputy Fire Chief	979-5650	222-2955
Deputy Fire Chief	979-5650	222-3981
Chief Municipal Enforcement Officer	979-5670	222-5521
RCMP	979-1111 979-0123	

GOVERNMENT RESOURCES- SPILL LINE		
24-Hour Spill Line	Telephone #	(867)920-8130

EXTERNAL ASSISTANCE- GOVERNMENT RESOURCES	
DEPARTMENT	CONTACT #
Environmental Protection, Government of Nunavut	975-5900
Indian and Northern Affairs Canada, Nunavut District Manager	975-4295
Indian and Northern Affairs, Baffin Sub-District	975-4295
Environment and Climate Change Canada, Iqaluit	975-4636
Department of Fisheries and Oceans, Iqaluit	979-8000
Regional Public Health Officer, Government of Nunavut	979-7652

CONTRACTOR	CONTACT #
Baffin Building Systems	979-5903
Kudlik Construction Ltd	979-1166

CONTRACTOR	CONTACT #
Nunavut Excavating Ltd	975-3320
RL Hanson	979-6004
Tower Arctic Ltd.	979-6465
Qikiqtaaluk Environmental	
Nunatta Environmental	

Appendix B

Orders, Permits and Licenses
(to be added when available)

Appendix C

Erosion and Sediment Control Plan (to be added when available)

Appendix D

Emergency Response Plan (under separate cover)



CITY OF IQALUIT

Emergency Response Plan (Draft)

Landfill and Waste Transfer Station

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TELEPHONE LISTING

To be posted at the Site Office, Scale House, Waste Transfer Station and Landfill Attendant Trailer

Revision Date: May 2019

EMERGENCY:

General Emergency (RCMP) 867 979 1111

GENERAL:

Fire/Ambulance: 867 979 4422

Police: RCMP (general inquiry and assistance) 867 979 0123

Government Agencies:

Nunavut Department of Environment:

Environmental Emergencies 867 920 8130

Nunavut Department of Community and Government Services:

Emergency Management 867 975 5320

Nunavut Water Board (NWB) 867 360 6338

Administration:

Director of Engineering and Public Works (Matt Hamp) office: 867 975 8509
cell: 897 222 2965

Manager of Solid Waste (TBA) 867 979 XXXX

Facility Supervisor (TBA) 867 979 XXXX

Public Works Operations Superintendent office: 867 979 5631
cell: 867 222 2956

1.0

Introduction

The purpose of this Emergency Response Plan (ERP) is to provide guidance to facility personnel for responding to an emergency. This document has been prepared as part of an overarching Environmental Management Plan for the City of Iqaluit Landfill and Waste Transfer Station (WTS); this document provides further guidance on responding to environmental emergencies and can be used in conjunction with this ERP. These policies and procedures define how the City of Iqaluit (the City) will protect human health and the environment during the Operations and Closure Phases of the project. The ERP covers all aspects of emergency planning and response including types of emergencies, key contact information, notification processes, emergency procedures, and reporting. Mechanisms for updating the ERP have also been incorporated.

This plan must be reviewed by all employees, as part of their training, and at regular intervals during operations.

During initial and future construction efforts at the Landfill and WTS, the primary contractor in charge of construction activities will be obliged to prepare a separate ERP outlining construction-specific hazards and related emergency procedures to be followed by site personnel. Due to changing conditions and the nature of construction operations, the hazards and procedures outlined in the construction phase ERP will differ significantly from those during the Operations Phase.

1.1

Scope of Plan

Location

This ERP applies to the Iqaluit Waste Management Facility (IWMF), including the Waste Transfer Station (WTS) and Landfill, Iqaluit, Nunavut.

Definitions

For the purposes of the ERP, an emergency is defined as any accident, incident, or unplanned event or situation that requires immediate and urgent action to prevent or minimize harm to persons, the environment, or property.

Individuals referred to by their titles, including the Chief Administrative Officer (CAO), Director of Engineering and Public Works (Director), Manager of Solid Waste (Manger), Facility Supervisor and Health and Safety Officer, are all employees of the City of Iqaluit.

Philosophy

No emergency response plan can identify every type of emergency, or predict the details of a given situation. This ERP will provide guidance for specific occurrences at the landfill site, and is designed to be

adaptable for future requirements. The procedures provided here should be implemented with due diligence, based on sound judgement and experience.

Prevention

Proper preventative measures, close monitoring, training, and effective management are the best lines of defence against accidents and emergencies. The most effective method for mitigating accidents and emergencies is through best management practices to reduce the likelihood of an occurrence.

Readiness

All personnel working at the site should be aware of and prepared for events covered in the ERP.

Priorities

The foremost priority of site personnel in the event of an emergency is the protection of themselves and other individuals, as well as the environment. The next priority is the protection of property.

Definition of an Emergency

For the purposes of this ERP, an emergency is defined as any accident, incident, unplanned event, or situation that requires immediate and urgent action to prevent or minimize harm to persons, the environment, or property.

1.2 Individual Responsibilities

It is the responsibility of all site personnel to follow safe practices, and to be vigilant and prepared for potential emergencies. Management and individuals in designated roles have further responsibility to enable and monitor readiness.

It is the responsibility of the **Manager** to:

- Ensure the ERP is accessible and ready to be implemented in the event of an emergency;
- Ensure all staff are trained in the ERP contents and procedures;
- Prepare incident reports in the event of an emergency; and
- Assign the responsibilities of the **Emergency Response Coordinator (ERC)** to the designated individual or alternative employee.

It is the responsibility of the **ERC** to:

- Determine the urgency of an identified situation and whether it constitutes an emergency;
- Implement the elements of the ERP;
- Direct the activities of site personnel;
- Delegate responsibility to other site personnel, as required;
- Contact the relevant authorities;
- Inform and consult with the Manager and any other internal stakeholders; and
- Allocate the necessary resources to adequately respond to the emergency.

It is the responsibility of **all site personnel** to:

- Be familiar with the provisions of the ERP;
- Take direction from the ERC and his/her delegate (as applicable) during an emergency; and
- Be alert for and report the initial signs of potential.

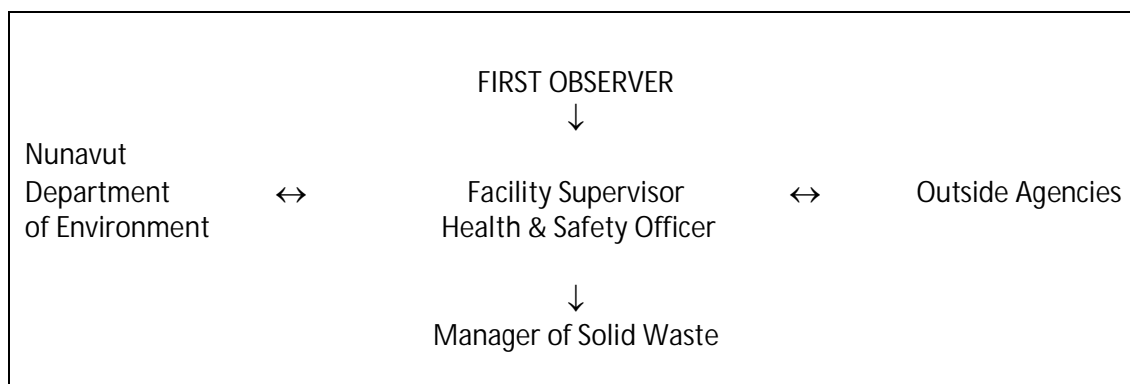
It is the responsibility of the **first observer** of a potential emergency to:

- Rapidly assess any details that may be useful in describing the potential emergency;
- Take any immediate steps that may be safely performed to protect themselves, other persons and the environment, and to protect property, where possible;
- Notify a supervisor, the Landfill Manager and/or the ERC; and
- Wait for further instructions.

For all emergencies, day or night, all employees and contractors should report to the designated Muster Point (see **Section 5**). The Visitor Log, maintained at the Scale House, can be used to verify all employees, contractors and visitors are accounted for.

1.3 Notification Procedures

During an emergency or potential emergency, the chain of authority for designating the Emergency Coordinator is as follows:



If one of these individuals cannot be contacted immediately, the next highest person on the chain of authority should be contacted. Efforts should continue to be made to contact any unavailable individuals even if someone higher in the chain has been notified.

Emergency Coordinator

The Emergency Coordinator is that person highest in the chain of authority who is aware of the emergency and is present at the site. He or she will serve as Emergency Coordinator until succeeded by a person higher in the chain of authority.

If contacted while away from the site during an emergency, all individuals in the chain of authority will take reasonable steps to travel to the site immediately, and remain there until the situation is considered under control.

1.4 Emergency Numbers

The contacts and telephone numbers **provided at the front of this document** shall be posted near all telephones at the site, and are identical to those found prior to the Operations and Maintenance Manual Table of Contents. These numbers should also be stored on the cellular phones of all site personnel. The numbers are to be confirmed, updated, and reposted annually, with the revision date prominently indicated.

1.5 Levels of Response

Once an emergency has been confirmed and declared by the Emergency Coordinator, the steps outlined in this section will be implemented.

Based on the available information, the Emergency Coordinator will declare a **Level III**, a **Level II**, or a **Level I** emergency as defined below:

Level III: Continue Working and Monitor Communications

All personnel are to continue with their duties unless otherwise directed by the Emergency Coordinator, and shall constantly monitor communications for changes in the status of the emergency.

The ERC is to establish contact with all personnel on the site and inform them of the Level III status.

Level II: Gather at Designated Area

All personnel will abandon their duties in a controlled manner, and gather on-site at an area designated by the ERC.

Unless otherwise directed, personal property, including vehicles, is not to be collected.

Level I: Evacuate

All personnel will evacuate at the direction of the ERC, using the designated exit route and meeting at the designated gathering area beyond the site.

The existing communications network used during normal operations at the site will be used in the event of an emergency, including direct contact, two-way radio, or telephone (fixed, mobile, and

cellular). Once an emergency is declared, all site personnel are to maintain an open communication line with the ERC at all times.

The on-site gathering areas used during a Level II emergency will normally be located at:

- Landfill:
 - At the intersection of the landfill access road and the Northwest Aggregate Deposit Access Road.
- WTS:
 - Either outside the Scale House or at the main site entrance gate. Any evacuation from the site will normally be conducted via the Kakivak Court with the Qaqqamiut Road gate as an optional evacuation route.

If a Level I emergency is called before a Level II is called or completed, the ERC will announce the evacuation, the exit route and outside gathering area. Personnel will proceed directly to the outside gathering area, while avoiding travel over the landfill or near the site of the emergency during the evacuation.

After evacuation, personnel are to remain at the off-site gathering area to be accounted for, and shall wait until directed to re-enter the site or to leave.

The primary evacuation routes shall be the following:

- From the Landfill;
 - Via the landfill access road to the Northwest Aggregate Deposit Access Road, continuing to the Qaqqamiut Road.
- From the WTS;
 - Via the main gate to the Kakivak Court, continuing to Federal Road.

During Level II and Level I emergencies, and for as long as the situation is safe, a Gate Monitor will be posted at the main WTS and/or Landfill entrance gate. Non-site or non-emergency personnel (e.g., waste haulers, contractors, visitors, media) will NOT be permitted entry to the site during the emergency. The Emergency Coordinator may also choose to prevent any entry to the site during a Level III emergency. If conditions require the Gate Monitor to abandon the gate, the gate will be closed but not locked.

During Level II and Level I emergencies, the Emergency Coordinator will appoint a Site Clearer to direct non-site personnel to leave the site. The Site Clearer will contact all non-site personnel, record their names and/or license plate numbers, and direct them to leave immediately and to check with the Gate Monitor as they leave. The Site Clearer will then crosscheck the list of names and license plates with the Gate Monitor to ensure that all non-site personnel have left the site.

1.6 Public Relations

All communications with the public concerning the emergency, including media contact, will be conducted by the Manager or designate.

2.0 Types of Emergencies Covered by ERP

This ERP addresses the following emergencies at the City's facilities:

- Medical Emergencies;
- Vehicle Fires;
- Building Fires;
- Landfill Fires;
- Liquid/Chemical Spills;
- Gas Leaks/Suspicious Odours;
- Explosions;
- Extreme Weather Events;
- Power Outages;
- Dangerous Animal Encounters; and
- Violent Criminal Behaviour.

Other emergencies or other occurrences including environmental spills, stormwater impacts, and erosion/sediment control issues are included in the Environmental Protection Plan (EPP).

3.0

On-Site Emergency Equipment

As a minimum, the following emergency equipment and supplies are to be kept at the site at the indicated locations. All personnel are to familiarize themselves with their location and be trained in their operation.

- First aid kits - All mobile equipment and buildings;
- Fire extinguishers - All mobile equipment and buildings;
- Eye wash stations – Waste Transfer Station, Landfill Attendant Trailer;
- Respirators – Waste Transfer Station; and
- Oil absorbent materials - All mobile equipment and buildings.

The Manager is responsible for maintaining emergency equipment and supplies. Equipment Operators are responsible for reporting any deficiencies with safety equipment and supplies associated with vehicles they operate. All site personnel are responsible for reporting observed deficiencies with any safety equipment and supplies.

4.0 Emergency Response Procedures

The following sections identify the recommended response to several contingency situations and emergencies. It can be expected that situations other than those described below may arise from time to time, and should be responded to in a manner appropriate for the emergency situation at that time.

4.1 Medical Emergencies

It is required that at least one member of the Landfill or WTS staff has been trained, and is current in Emergency First Aid and CPR.

In the case of a medical emergency, the staff member with Emergency First Aid Training will be informed and will generally follow the PRIORITY ACTION APPROACH outlined below for life-threatening situations:

- Take charge of the situation.
- Call out for help to attract bystanders.
- Assess the hazards.
- Make the area safe for the First Aiders and others.
- Identify himself or herself as a First Aider and ask the injured party if they can help.
- Assess the casualty for life-threatening conditions.
- Provide first aid for life-threatening conditions.
- Send someone to call for help and notify the ERC.
- Organize bystanders to:
 - Help make the area safe.
 - Ensure that all casualties have been discovered.
 - Call ambulance, police, and other emergency personnel.
 - Assist with first aid, as directed.

If the casualty has a suspected head or spinal injury, do not move the victim, but carefully steady and support the head and neck without moving the head before establishing responsiveness.

4.2 Vehicle Fires

All collection vehicles and landfill equipment shall be supplied with a fire extinguisher, as well as fire suppression systems in major landfill equipment.

The equipment operator will follow the procedure below in the case of an equipment/vehicle fire:

- Notify the ERC;
- Try to move the machine to an isolated area, but only if it is safe to do so from a personnel perspective;
- Shut down the machine; and

- ONLY IF THE OPERATOR DETERMINES THAT IT IS SAFE TO DO SO, use the supplied fire extinguisher to put out the fire.

The ERC will follow the procedure below in the case of vehicle fire:

- Take direction from the Emergency Services in responding to the fire; and
- Alert the Department of the Environment in the event that the vehicle has the potential to release contaminants to the environment, as a result of the fire and/or contains waste.

4.3 Building Fires

Fire extinguishers are strategically located in all buildings. If the fire is small, persons identifying the fire should try to put it out with a fire extinguisher. If the fire cannot be controlled or is severe when identified, the below procedure below should be followed:

- Notify the ERC and/or the closest Supervisor;
- Evacuate to the designated assembly area or muster point;
- ERC or Supervisor will report the fire to the local Emergency Services;
- Ensure clear access for arrival of Fire Department;
- Inform the Fire Department of any pertinent details of the fire (location, extent, cause, combustible materials, actions taken) and on-site firefighting resources (water supply, heavy equipment); and
- Assist only if, and as directed by, firefighting personnel.

4.4 Landfill Fires

Landfill fires can result from undetected hot loads that are landfilled. The following procedures will be followed upon identification of a fire and notification of the Emergency Coordinator.

Assess the Situation. The employee first observing the potential or actual fire will:

- Determine the number, location, extent and possible cause of the landfill fire;
- Notify the ERC and all on-site Landfill staff;
- The ERC will contact the Fire Department, as necessary;
- Provide the Fire Department with as much information relating to the fire and its cause(s), as possible, to assist them in responding appropriately to the situation; and
- If multiple fire locations exist, the ERC will determine, as best as possible, the priority fires for fighting first. In this regard, the ERC will take direction once the Fire Department has arrived.

Prepare for Firefighting. The ERC will assign staff to:

- Prepare an area away from the working face to be clear of vegetation and waste (preferably virgin ground);
- Excavate soil nearby for use in smothering the fire, if insufficient cover material is at hand; and
- Assemble portable pumps and hoses.

Contain the Fire: The ERC will, in conjunction with direction from the Fire Department, assign staff to:

- Construct a fire break, as close to the burning area as possible, to limit surface spreading of the fire;
- Suppress flames with water;
- Push smouldering material to the clear area, while continuing to spray with water; and
- Smother the fire by adding soil and compacting.

Monitor the Situation: The ERC will assign staff to:

- Continue to monitor the fire site and smothered material following the apparent extinguishing of the fire; and
- Leave burnt material isolated and exposed for two days after extinguishing to ensure no subsequent outbreak of fire.

4.5 Liquid/Chemical Spills

The first observer will check the immediate area for any affected or injured personnel, and will inform the ERC, as soon as possible.

The ERC will:

- Direct staff to take appropriate emergency environmental protection measures, such as placing booms or barriers around the spill to prevent liquid escape into the environment or into surface water bodies.
- Call the Nunavut Department of Environment – Environmental Emergencies (867 920 8130), if the spilled substance quantity exceeds the minimum notification requirements (refer to the EPP).
- Notify the Department of Environment for the Government of Nunavut.
- In the event that liquids have reached surface water bodies, attempt to prevent further release to minimize the potential effects of the release.
- Take direction from the Department of Environment or their designated authority.
- Attempt to determine the cause of release and whether a risk of a further release exists.
- Assess and potentially upgrade the level of the emergency, as necessary.

For additional information on spills and releases, please consult the EPP (Section 6.0).

4.6 Gas Leaks/Suspicious Odours

In the event you smell gas and suspect a leak immediately cease all operations. **DO NOT SWITCH ON LIGHTS OR ANY ELECTRICAL EQUIPMENT. Do not turn switches on or off; leave them in the position they are in, as this action can generate sparks.**

- Notify dispatch or the ERC.

- Evacuate the building/equipment by the nearest exit. Notify other building occupants to do so as well.
- Once outside, move away from the building and head to the designated waiting area to await further instructions.
- Contact the Fire Department, as necessary.

4.7 Explosions

In the event of an explosion in a building, staff should take the following actions:

- Immediately take cover under tables, desks, or other such objects providing protection against flying glass or debris.
- Evacuate the immediate area of the explosion.
- Notify dispatch of the occurrence.
- Seek out and assist injured and disabled persons in evacuating the building. Exit via the nearest safe exit.
- Once outside, move to the designated assembly area.
- Await further instructions. Do not return to the building unless instructed to do so by the ERC.
- Ensure clear access for arrival of Fire Department. Keep roadways and walkways clear for emergency vehicles.
- The ERC will inform emergency response personnel of any pertinent details of the explosion, such as location, extent, cause, combustible, or flammable materials in the area of the explosion and what actions are to be taken.

4.8 Extreme Weather Events

Extreme weather events might include snow storms, extreme cold warnings, ice storms or extremely high winds. If extreme weather events occur, the following actions will be taken:

- When a weather warning is issued by Environment Canada, the Superintendent of Public Works will consult with the appropriate authorities at Environment Canada to determine the anticipated severity and duration of the weather event.
- The Facility Supervisor will hold a planning meeting prior to a foul weather event to prepare and implement a foul weather action plan.
- Loose materials that can be blown around or damaged will be moved inside or tied down.
- Doors and windows will be secured.
- Communication equipment will be checked.

4.9 Power Outages

Power outages will affect the operation of any weigh scales, pumping stations and ventilation systems for buildings, in addition to any normal operating systems therein. The loss of power does not necessarily constitute an emergency. Indoor gas detection and alarm systems (such as carbon monoxide

monitors on tipping floors) will not be functional during a power outage. The procedure below will be followed if a power outage exceeds five minutes and alternative ventilation cannot be activated (such as opening truck access doors):

- Staff will evacuate the buildings and gather at the designated assembly area; and
- Building re-entry will be allowed after power has been restored and indoor gas detection alarms are silenced.

It is acknowledged that the WTS is equipped with an emergency generator that should serve to mitigate issues associated with power outages.

4.10 Dangerous Animal Encounters

Certain animals can pose a danger to landfill staff or the public. In particular, polar bears and other bear species can cause serious injury or death as a result of contact with humans, and extreme care should be exercised when a bear is in the area. Bears are attracted to garbage and will readily enter landfills and other areas where garbage is stored in search of food. They can also become habituated to areas where food sources have been previously available.

In the event of a bear encounter, the following measures should be undertaken:

- Notify any and all personnel working in the area, as well as the ERC, of the presence of a bear.
- Contact the relevant authorities, if necessary.
- **Do not approach bears for photography or any other reason!** This leads to habituation and encourages more frequent encounters with humans.
- If a bear approaches, a number of deterrents can be used to startle or frighten the bear away:
 - Rubber bullets;
 - Bean bag round;
 - Cracker shells;
 - Scare cartridges;
 - Pen launcher;
 - Pepper spray;
 - Noisemakers; and
 - Warning shots.
- Electric fencing and vehicles can also be effective deterrents to bear encounters.

4.11 Violent/Criminal Behaviour

If you observe a crime in progress or behaviour that you suspect is criminal, immediately notify police at 867 979 1111.

DO NOT APPROACH OR ATTEMPT TO APREHEND THE PERSON(S) INVOLVED!

The following items are recommendations for dealing with robbery/assault:

- Cooperate, give the person exactly what they are looking for, nothing more.
- Try to notice distinguishing traits, such as clothing, race, height, weight, age, eye colour, facial hair, or other identifying features such as scars, moles, tattoos, eyewear, etc.
- Pay attention to the type of weapon used, if applicable.
- Listen carefully to their voice for distinguishing characteristics (i.e., an accent, lisp, stutter)
- Record what direction they go after the confrontation. If they use a vehicle, record the licence plate number, and make and model of the vehicle.
- Notify the police by calling **867 979 1111** immediately after the person leaves. Stay on the telephone with the police dispatcher and provide additional information as changes in the situation occur, until the first police officer arrives at your location.
- Cooperate fully with the police investigation.

5.0

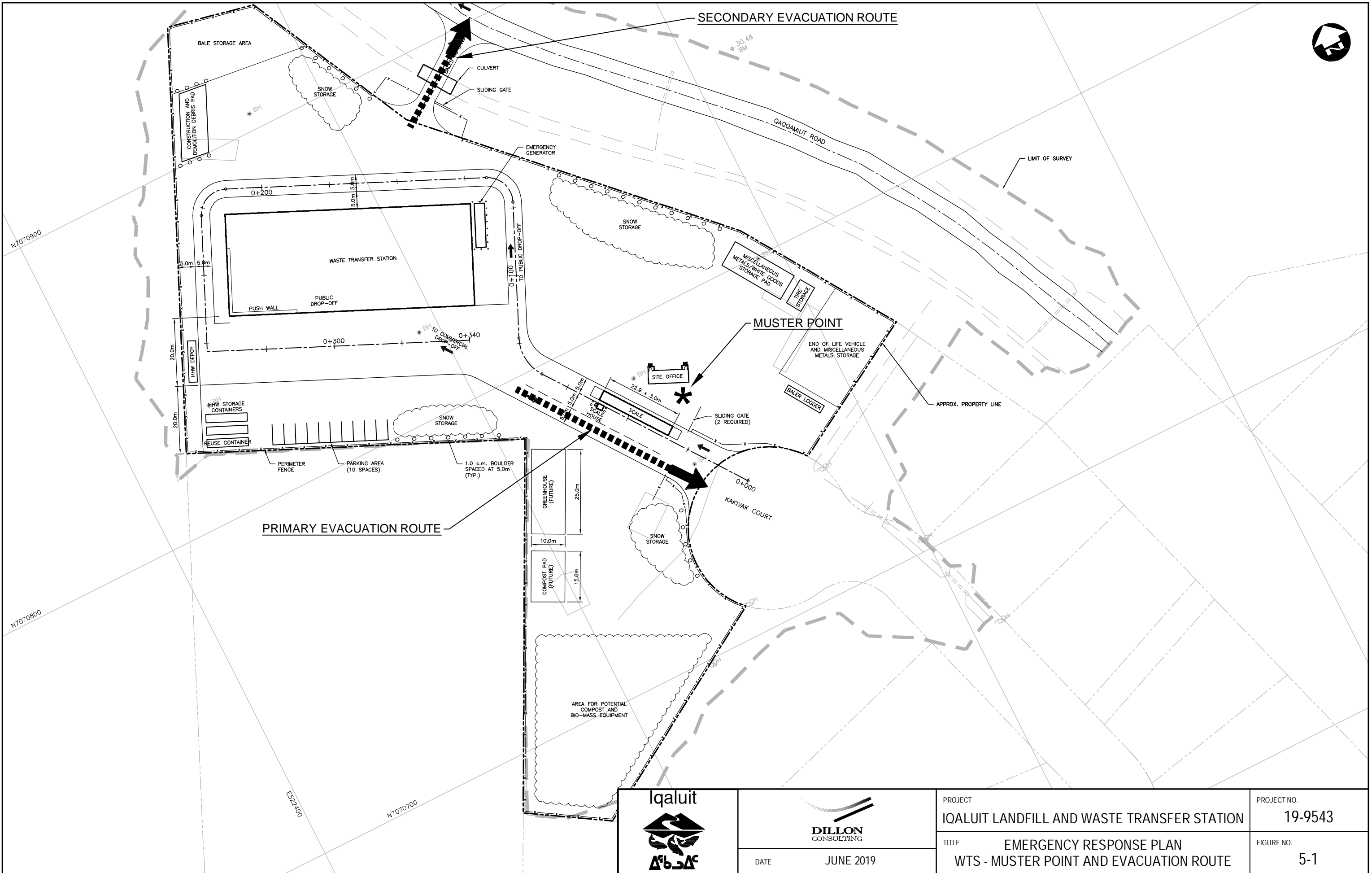
Evacuation Plan



5.1

Evacuation Routes

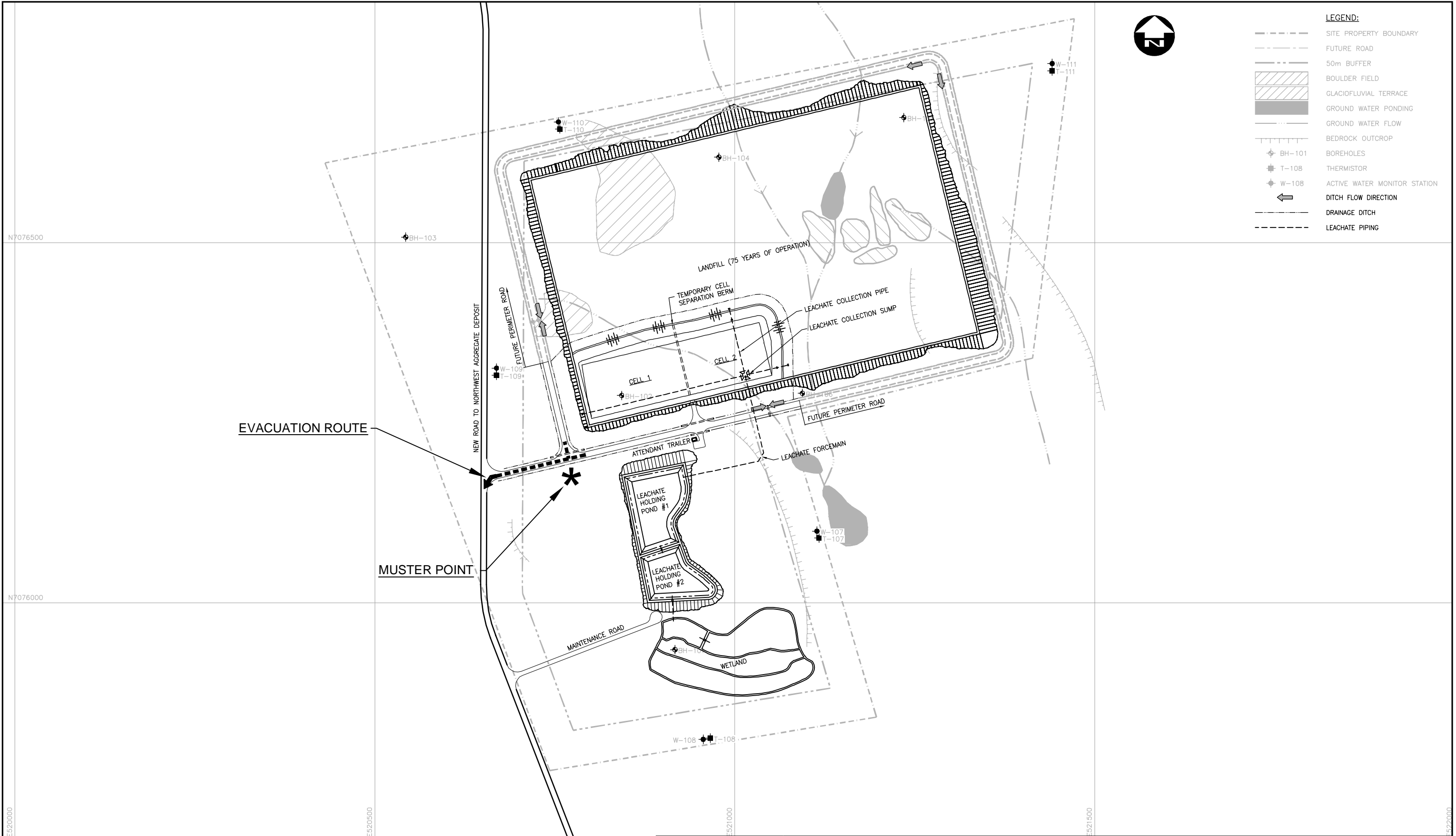
Figures 5-1 and 5-2 identify evacuation routes and muster points for both the WTS and Landfill. In the event of an emergency where evacuation is required, move quickly and orderly to the muster point or designated assembly area, and await further instruction. Look around at the assembled people to determine if anyone is missing and inform the ERC, emergency services, or others, as applicable.



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		PROJECT	PROJECT NO.
		IQALUIT LANDFILL AND WASTE TRANSFER STATION	19-9543
	TITLE		FIGURE NO.
	EMERGENCY RESPONSE PLAN WTS - MUSTER POINT AND EVACUATION ROUTE		5-1
	DATE		
	JUNE 2019		

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	 DILLON CONSULTING	PROJECT IQALUIT LANDFILL AND WASTE TRANSFER STATION	PROJECT NO. 19-9543
		TITLE EMERGENCY RESPONSE PLAN LANDFILL - MUSTER POINT AND EVACUATION ROUTE	FIGURE NO. 5-2

6.0 Emergency Response Plan Distribution and Updating

This ERP will be used as a training tool for all new staff upon hire. The ERP will be easily accessible at both the WTS Office and the Landfill Attendant Trailer. The ERP will be reviewed annually and updated for changes that have occurred over the previous year.

7.0

Post Emergency Review and Plan Assessment

Following an accident or incident outlined within the ERP, a review of the effectiveness of this plan will be conducted to identify any areas of improvement, if applicable. This assessment should be conducted by the Director of Engineering and Public Works, the Manager of Solid Waste and any other affected parties. Any improvements identified during this meeting should be made to the ERP, as soon as practicable, to ensure more effective emergency response if future incidents occur.

8.0 Readiness Review

8.1 Emergency Reporting

Brief but accurate records will be kept during an emergency situation by the ERC. This will assist in later analyses, reporting and plan revisions. Within five working days of the resolution of the event (i.e., when the event is no longer an emergency), the Director of Engineering and Public Works will provide the Nunavut Impact Review Board with a brief written report concerning the emergency. This report will include:

- An account of the circumstances that caused the emergency.
- An account of events during the emergency, including chronology.
- The current status of the site with respect to the emergency.
- Measures to be taken to minimize similar occurrences.

An evaluation of the performance of coordinators, site personnel and the ERP during an emergency, and planned measures to address and identified inadequacies of the ERP shall be undertaken.

8.2 Simulation Exercises

A simulation exercise will be designed by the Manager of Solid Waste and conducted at intervals of 12 months. The purpose of the simulation exercise is to provide opportunity for training and reiteration, and test the readiness of the site, equipment, and associated personnel in the event of an emergency situation.

Each exercise may include any or all of the following, at the discretion of the Superintendent of Public Works:

- Establishing lines of authority.
- Arranging coordination and communication.
- Mobilizing personnel and equipment.
- Deploying personnel and equipment under controlled conditions (e.g., mock injuries, contained fires).
- Contacting external agencies.
- Evacuation.

Each exercise will be arranged and executed in conjunction with the appropriate agencies. All efforts will be made to reduce the risk to personnel, environment and property to a minimum.

Each exercise may include simulation of one of the situations covered in this ERP. No exercise needs be duplicated within a five year period.