

# Appendix A

## Waste Management Plan



# Edie Lake Quarry Geotechnical Assessment Program

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## Waste Management Plan

Government of the Northwest Territories – Department of Infrastructure  
January 2021

# Plan Maintenance and Control

**Table 1**      **Waste Management Plan Document History**

<b>Version #</b>	<b>Section(s) Revised</b>	<b>Description of Revision</b>	<b>Prepared by</b>	<b>Issue Date</b>
v. 1.0	Not Applicable	Not Applicable	GNWT INF	January 2021

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# Abbreviations

ENR	Department of Environment and Natural Resources, GNWT
EPA	Environmental Protection Agency
GNWT	Government of the Northwest Territories
INF	Department of Infrastructure, GNWT
kg	Kilogram
km	Kilometre
L	Litre
m	Metre
NT	Northwest Territories
NWT	Northwest Territories
PCAR	Prohibition Creek Access Road
PDR	Project Description Report
SCP	Spill Contingency Plan
SLWB	Sahtu Land and Water Board
TDGR	Transportation of Dangerous Goods Regulations
WMP	Waste Management Plan

# 1 Introduction

This Waste Management Plan (WMP) has been developed by the Government of the Northwest Territories (GNWT) Department of Infrastructure (INF) for use during the completion of the geotechnical assessment program at Eddie Lake Quarry (the Project).

The purpose of the WMP is to provide a guide to all site personnel on the waste management goals, objectives and procedures to be followed during the Project. The WMP will ensure components of the environment, including air, water, land, vegetation, wildlife and fish, are not negatively affected by the Project. It will ensure aesthetic and land use values remain intact; comply with all applicable acts and regulations as well as conditions outlined in the INF's land use permit.

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## 1.2 Effective Date

The WMP is effective upon commencement of the Project. The WMP will be revised as needed to reflect site-specific conditions. Revisions will be submitted to the Sahtu Land and Water Board (SLWB).

### 1.3 Distribution List

This plan and the most recent revisions will be distributed to:

- Project Manager, Mackenzie Valley Highway, INF
- Project Manager, Kalo-Stantec
- Project Manager, Tetrattech
- SLWB
- GNWT, Department of Lands, Sahtu Region

### 1.4 Environmental Policy and Procedures

This WMP deals specifically with procedures and policies for the safe handling, storage and disposal of waste materials, which have served their original purpose and are scheduled for disposal. It provides background information on the handling of wastes and details the operational requirements to ensure that the Project is conducted in an environmentally responsible manner.

### 1.5 Legislation and Guidelines

This plan has been developed in consideration of the applicable territorial legislation including the following reference documents:

- Northern Land Use Guidelines: Roads and Trails (GNWT 2015)
- Guideline for the Hazardous Waste Management (GNWT 2017)
- Guidelines for Developing a Waste Management Plan (MVLWB 2011)
- Used Oil and Waste Fuel Management Regulations – Plain Language Guide (ENR 2003)

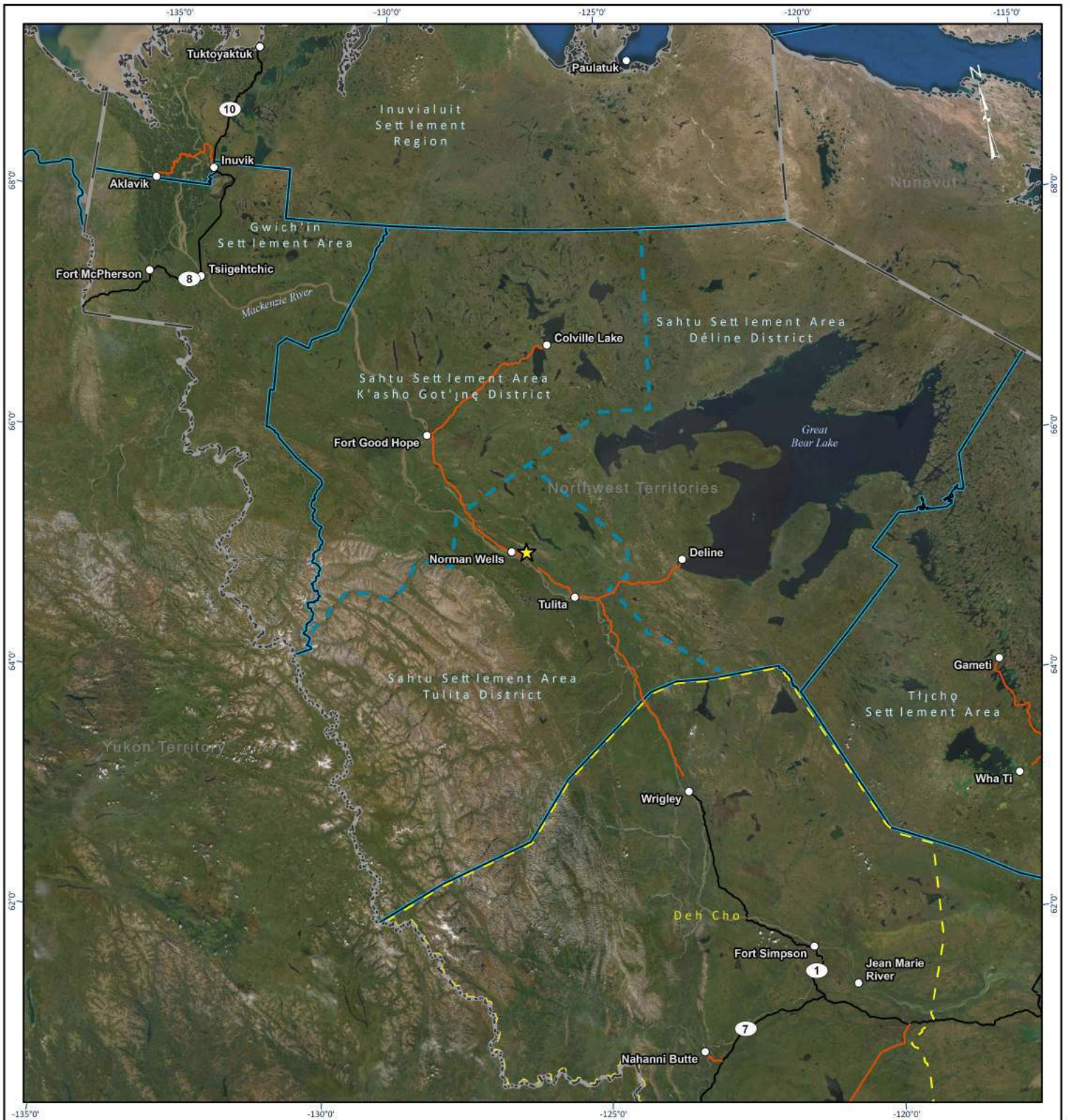
## 2 Project Details

INF is planning to construct a 13 kilometer (km) all-season access road between Canyon Creek and Prohibition Creek located southeast of Norman Wells, Northwest Territories (NT). Prior to advancing this work, a geotechnical assessment program is required to be completed at the Edie Lake Quarry to confirm the suitability of the material proposed to be used during the construction program. The assessment program will include the advancement of boreholes using a pad-mounted core drill at five to seven selected sites within the existing quarry. The Project will consist of the following components:

- Mobilizing and demobilizing drilling equipment to and from the Project work sites.
- Drilling of boreholes at the indicated sites.
- Sourcing water from the municipal water system for the completion of the drilling activities.

Upon completion of the Project, recommendations will be provided to inform and support quarry design. A map of the Project area is included in Figure 2-1 below. Proposed borehole locations are shown in Figure 2-2.





- LEGEND**
- ★ Edie Lake Quarry Project Location
  - Community
  - All-Season Road
  - Winter Road
  - District Boundary
  - Region
  - Settlement Area Boundary
  - Territorial Boundary

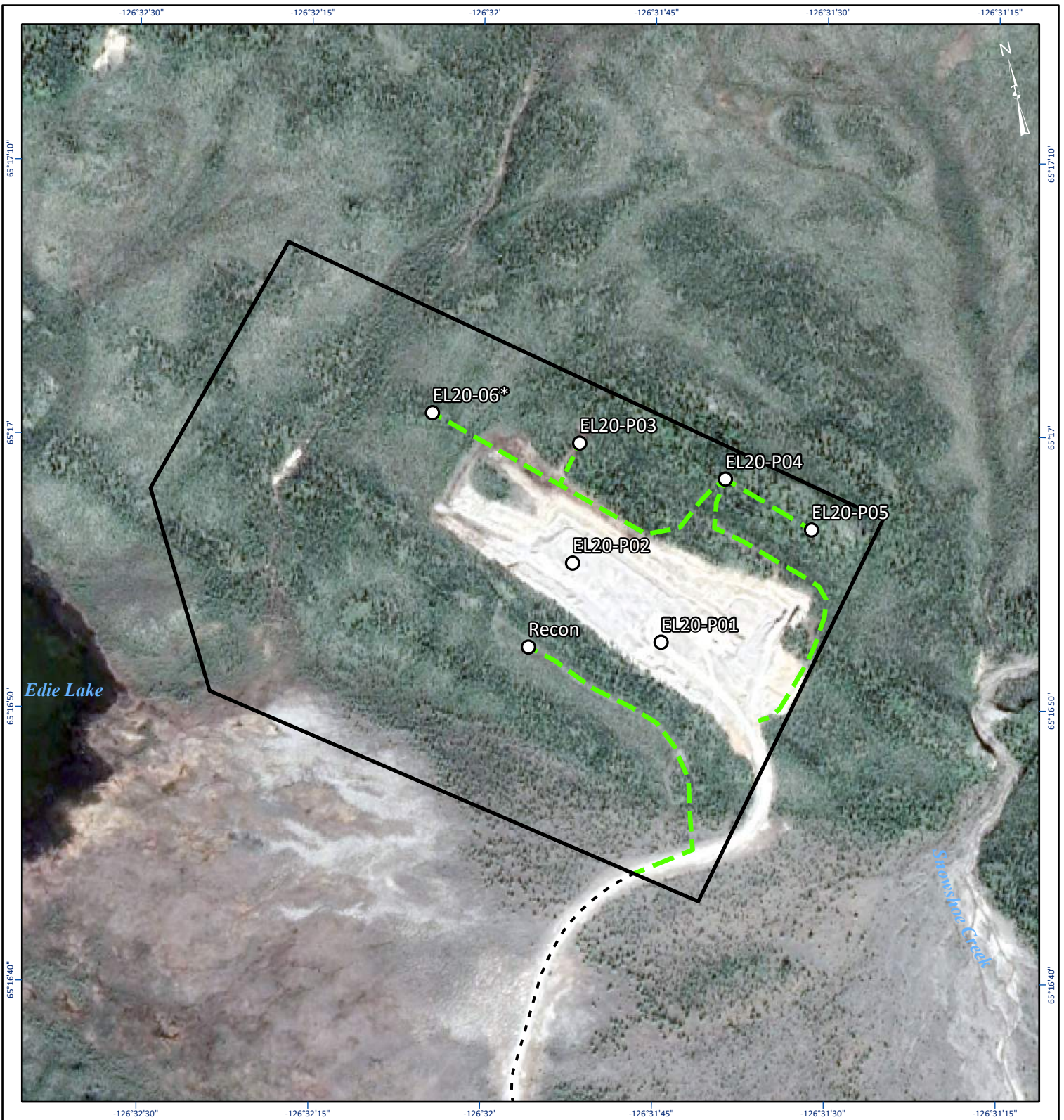


**NOTES**  
 Sources: Project Data: Government of Northwest Territories. Base Data: CanVec, Government of Canada; Government of Northwest Territories; NWT Centre of Geomatics  
 Image Earthstar Geographics  
 Spatial Reference: NAD 1983 Northwest Territories Lambert

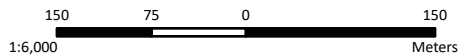
Figure 2-1 - Project Location

GIS	CES	2020-11-10	Doc ID: 144902910-0009 REVA
QA/QC	CS	2020-11-10	Government of the Northwest Territories





- LEGEND**
- Borehole (Proposed)
  - Access Trails to Boreholes
  - - - Haul Road
  - Edie Lake Quarry



**NOTES**  
 Sources: Project Data: Government of Northwest Territories; Base Data: CanVec, Government of Canada; Government of Northwest Territories; NWT Centre of Geomatics  
 Image Source: Government of Northwest Territories; NWT Centre of Geomatics  
 Spatial Reference: NAD 1983 Northwest Territories Lambert

Figure 2-2 - Proposed Borehole Location

GIS	CES	2020-11-10	Doc ID: 144902910-0011 REVA
QA/QC	CS	2020-11-10	Government of the Northwest Territories



## 3 Definitions

Under the authority of the territorial *Environmental Protection Act* (EPA), the GNWT has produced a series of environmental guidelines for the management of specific hazardous wastes commonly produced on similar projects. The Environmental Guideline for Hazardous Waste (GNWT 2017) provides definitions of the terms used in the EPA and describes the acceptable waste management practices. The following definitions are particularly important to this document.

### 3.1 Hazardous Waste

A contaminant is a dangerous good that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage.

A 'hazardous waste' does not include a contaminant that is:

- Household in origin;
- Included in class 1 (explosives) or class 7 (radioactive materials) of the Transportation of Dangerous Goods Regulations (TDGR);
- Exempted as a small quantity;
- An empty container; or
- Intended for disposal in a sewage system or by land filling that meets the applicable standards set out in Schedules 1, III or IV of the Guideline for Industrial Waste Discharges in the NWT.

### 3.2 Empty Container

A container that has been emptied, to the greatest extent possible, using regular handling procedures, but its contents shall not exceed 1% of the container's original capacity or 2 litres (L), whichever is less. This does not include containers which previously contained mercury, or Class 2.3, 5.1 or 6.1 materials of TDGR.

### 3.3 Small Quantity

Hazardous wastes are considered to be small quantities if it is generated in an amount that is less than 5 kilograms (kg) per month if a solid or 5 L per month if a liquid; and where the total quantity accumulated at any one time does not exceed 5 kg or 5 L. This does not apply to wastes that are mercury or in Class 2.3, 5.1 or 6.1 of the TDGR. These wastes must be generated in an amount less than 1 kg per month if a solid or 1 L per month if a liquid; and where the total quantity accumulated at any one time does not exceed 1 kg or 1L.

## 4 Identification of Waste Types

The types of waste anticipated to be generated during the Project are outlined in Table 4-1 below.

**Table 4-1 Project Waste Streams**

<b>Waste Stream</b>	<b>Description</b>	<b>Handling Method</b>	<b>Disposal Method</b>
Domestic wastes (organic and non-organic)	Organic and non-organic waste including garbage, rubbish or food scraps	Place in odour proof secure waste containers	Waste will be progressively removed from the Project work sites and disposed of at the solid waste facility in Norman Wells.
Sewage	Grey/black-water	Stored in a portable washroom facility during the Project.	Will be removed from the Project work sites and disposed at the sewage disposal facility in Norman Wells.

Although not anticipated, the Project may also generate other non-project specific wastes. These wastes are outlined in Table 4-2 below.

**Table 4-2 Other Potential Waste Streams**

<b>Waste Stream</b>	<b>Description</b>	<b>Handling Method</b>	<b>Disposal Method</b>
Wastes generated during spills (including hydrocarbon containers, absorbents, contaminated snow/water)	Contaminated materials with fuel (gasoline or diesel), oil, lubricants, solvents, antifreeze	Place contaminated materials in appropriate storage containers.	Soils or liquid residue will be removed by registered hazardous waste carrier to an approved disposal facility.
Animal carcasses associated with collisions during the Project	Dead or decomposing animal parts	No storage of animal carcasses will be allowed at the Project work sites.	Animal carcasses will be removed and disposed as directed by the GNWT Department of Environment and Natural Resources.
Batteries (lead acid and alkaline)	From personnel and equipment	Place in appropriate containers	Removed and disposed of at an approved disposal facility.

## 4.1 Non-Hazardous Waste

Non-hazardous waste generated during the Project will primarily include domestic waste generated during the drilling program.

The potential environmental effects arising from unmanaged non-hazardous waste include increased wildlife attractants, a change in the aesthetics to the area, degradation of water quality, and degradation of wildlife habitat.

## 4.2 Sewage

During the Project, portable washroom facilities will be utilized by Project personnel. Upon completion of the Project, sewage wastes will be transported to an approved facility in Norman Wells for disposal.

The potential environmental effects arising from unmanaged sewage wastes include degradation of soil quality, degradation of water quality, degradation of wildlife habitat, and harm to on-site personnel.

## 4.3 Hazardous Waste

While it is expected that vehicle maintenance will occur in existing facilities within communities, there may be occasions where equipment requires servicing in the field. Wastes associated with these maintenance activities may include used oil filters, used oil, etc. Other potential hazardous wastes may include contaminated soil, snow or water and sewage if a spill occurs during the Project.

The potential environmental effects arising from unmanaged hazardous wastes include degradation of soil quality, degradation of water quality, degradation of wildlife habitat, and harm to on-site personnel.

# 5 Waste Management Facilities

Various wastes will be generated during the Project. It is essential that these wastes are handled, stored and managed in a safe and environmentally responsible manner.

The contractor for the Project will select the types of fuels and fuel storage tanks to meet the needs of the Project as well as any storage tank volumes and locations. INF expects that diesel and gasoline will be the two primary fuels used, each sourced from existing fuel tanks situated in Norman Wells. Diesel will be used for use in the mobile equipment and vehicles. Gasoline may be required, depending on the type of vehicles that are used during the Project.

INF expects that the external fuel tanks required for the Project will include: fuel tanks mounted in the back of pickup trucks for refueling mobile equipment and vehicles at the Project sites. No fuel storage tanks will be stored at the work sites.

The fuel tanks used during the Project will meet regulatory requirements. If required, INF will provide the Board with an updated list of fuels, tanks, and volumes prior to the start of work.

## 6 Management of Waste Types

This section of the plan describes the general procedures and principles that are to be followed by site personnel in handling and storing wastes. The waste management program will attempt to minimize waste production by applying the principles of reducing the use of materials, reusing materials whenever possible, recycling materials and recovering value from used materials. Additional programs for handling, disposal and recycling of other wastes will be developed as needed. The subsections listed below deal with specific wastes that may be encountered during the Project.

### 6.1 Non-Hazardous, Non-Mineral Wastes

During the Project, the following management and mitigation techniques will be implemented to reduce the potential for environmental effects associated with non-hazardous, non-mineral wastes.

#### 6.1.1 Domestic Waste

Waste management practices will be implemented that minimize attractants to wildlife, including:

- Minimizing and properly disposing of garbage, food wastes and other edible and aromatic substances into odour-proof secure containers (wildlife-proof).
- Separating recyclables such as beverage containers, plastics, alkaline batteries and possible electronics for proper disposal offsite.
- Organizing wastes into containers with secure lids to store onsite. This material will then be progressively removed from site throughout the Project.
- Ensuring work crews inspect work areas to collect and properly dispose of any waste that may have been discarded.

### 6.2 Hazardous Waste

INF is responsible for the proper management and disposal of project-related hazardous waste. If disposal of hazardous waste is required as part of the Project, wastes will be transported off-site using INF's registered hazardous waste number 'NTG027'. The Contractor will be responsible for completing and managing the hazardous waste movement documents according to the Guideline for the General Management of Hazardous Waste in the NWT (ENR 2017), while maintaining contact with INF to ensure proper management of the waste.

The following measures describe the handling and storage of hazardous materials and wastes (fuels, oils and lubricants) that are transported onto the Project site,

- Hazardous wastes will be stored within secondary containment at least 100 metre (m) away from the high water mark of any watercourses, as per the Spill Contingency Plan (SCP) for the Project.
- Any hazardous wastes will be stored in clearly marked containers with lids (i.e., drums) and in clearly marked areas (e.g. signs and flagging).
- Containers will be kept clear of debris and snow to facilitate routine inspections for leaks.
- Hazardous wastes will be removed from the designated storage area as often as possible, but at the end of the Project at a minimum. Wastes will be transported to an approved facility for treatment/disposal.
- If other contaminated materials require disposal (i.e. spill pads), these will be disposed of through a licensed facility.
- Any contaminated snow, soil, and/or water will also be transported to an approved facility for treatment/disposal.

On behalf of the INF (the waste generator), the Contractor will complete the appropriate waste manifest to fulfill TDGR requirements and the requirements of the Guideline for the General Management of Hazardous Waste in the NWT.

### **6.2.1 Sewage**

Sewage will be transported to an approved disposal facility in Norman Wells.

### **6.2.2 Contaminated Soil and Snow**

Contaminated soil and/or snow as a result of hydrocarbon spills or other spill material is anticipated to be minimal as all site personnel will be familiar with the Project's SCP and will follow proper safe operating procedures.

In the event that a spill should occur, it is expected that contaminated soils/snow will be picked up and placed in suitable storage containers (i.e. drum). The wastes will be removed from the Project worksites by a registered hazardous waste carrier and disposed of at an approved facility. Should a larger spill occur, a secondary containment structure or lined facility which may be required. All spills will follow SCP procedures.

### **6.2.3 Waste Oils**

Waste oil will be stored in containers suitable for that purpose. Other waste types, such as antifreeze or solvents will not be stored in the same container as waste oils.

#### **6.2.4        Used Filters**

Used filters will be temporarily stored in filter containers and will then be disposed of at an approved registered facility.

#### **6.2.5        Used Hydrocarbon Containers and Absorbents**

Used hydrocarbon containers, absorbents or rags produced onsite, along with any used spill response materials, such as fibre pads or granular absorbents ('floor dry') will be placed in appropriate containers and disposed at an approved disposal facility in accordance with regulatory requirements.

#### **6.2.6        Animal Carcasses**

If encountered, animal carcasses will be removed from the Project work sites through discussions with the Department of Environment and Natural Resources (ENR).

#### **6.2.7        Batteries**

Lead acid batteries and alkaline batteries will be placed into appropriate containers and disposed of at an approved disposal facility.



## 7 References

- Environment and Natural Resources (ENR). 2003. Used Oil and Waste Fuel Management Regulations – Plain Language Guide. GNWT. Yellowknife, NT. Web access: [https://www.enr.gov.nt.ca/sites/enr/files/guidelines/used\\_oil\\_guide.pdf](https://www.enr.gov.nt.ca/sites/enr/files/guidelines/used_oil_guide.pdf). Last retrieved November 2019.
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- GNWT. 2017. Guideline for the Hazardous Waste Management. Web access: [https://www.enr.gov.nt.ca/sites/enr/files/resources/128-hazardous\\_waste-interactive\\_web\\_0.pdf](https://www.enr.gov.nt.ca/sites/enr/files/resources/128-hazardous_waste-interactive_web_0.pdf). Last retrieved November 2019.
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