

Waste Management Plan

Lockhart All-Season Road Geotechnical
Investigation

October | 2023



Document Control

The Government of the Northwest Territories Department of Infrastructure (GNWT-INF) and its contractors are responsible for the distribution, maintenance and updating of the Waste Management Plan.

This document will be reviewed and possibly revised as needed, but at least annually, taking into account changes in the law, environmental factors, GNWT policies, and any other pertinent site-specific changes.

Version	Section(s) Revised	Description of Revision	Issue Date
1.0	N/A	Submitted with Land Use Permit application	October 2023

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1 Introduction

This Waste Management Plan (WMP) has been developed by the Government of the Northwest Territories - Department of Infrastructure of the (GNWT-INF) for the Lockhart All Season Road (LASR) Geotechnical Investigation (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 geotechnical investigation of the Project.

This WMP deals specifically with procedures and policies for the safe and responsible 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 requirements to ensure that the Project is conducted in an environmentally responsible manner.

1.1 Project Contacts

Primary GNWT-INF contact:

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Strategic Infrastructure
Government of Northwest Territories
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Primary Contractor contact:

To be determined

1.2 Roles and Responsibilities

The GNWT-INF is responsible for the success of this plan and approves all relevant policies and documents, auditing, action planning and the verification process. GNWT-INF contractors who will undertake the field programs are responsible for the implementation and adherence to this Plan.

All GNWT and contractor personnel involved in this Project responsible for the effectiveness of the WMP by completing the required training and supporting its implementation. All personnel will be made aware of this Plan.

1.3 Legislation and Guidelines

This plan has been developed in consideration of the applicable Federal and Territorial legislation including the following guidelines:

- Guidelines for Developing a Waste Management Plan (MVLWB 2011)
- Guideline for Hazardous Waste Management (GNWT-ENR 2017)

Relevant Federal legislation includes:

- *Transportation of Dangerous Goods Act* (Government of Canada 1992)
- *Environmental Protection Act* (Government of Canada 1999)

Relevant Territorial legislation includes:

- *Environmental Protection Act* (GNWT 1988a) and the Used Oil and Waste Fuel Management Regulations (GNWT 2003b)
- *Transportation of Dangerous Goods Act (TDG)* (GNWT 1988b)
- *Waste Reduction and Recovery Act* (GNWT 2003a)
- *Waters Act* and Regulations (GNWT 2014)

2 Project Description

The Government of the Northwest Territories - Department of Infrastructure (GNWT-INF) is proposing to conduct Geotechnical Investigations to gather information in support the development of the Lockhart All Season Road (LASR) between Highway 4 (the Ingraham Trail) at Tibbitt Lake to Lockhart Lake. The Geotechnical Investigations will consist of assessing potential hard-rock quarries and granular resources (collectively referred to as target areas) as material for construction of an all-season road.

Potential target areas that have been identified for further investigation between Highway 4 and Lockhart Lake from desktop evaluation and previous studies are provided in Appendix A. Additional potential target areas may be identified based on on-going engagement and studies.

Project operations that occur in the summer will include the use of heli-portable drills and will use existing camps in the area. No new roads or trails are required.

Project operations occurring in the winter will include the use of heli-portable drills and the construction of spur roads from the Tibbitt to Contwoyto Winter Road for the Project. Work will be supported by existing camps or by the creation of a mobile camp. Generally, hard-rock quarries will be assessed by drill, while granular resources will be sampled by digging test pits. The assessment of each target area will include describing geochemistry, volumes, subgrade conditions, drainage and ground temperature. Monitoring equipment may be installed (e.g., such as ground temperature monitors) and may include monuments or other surface infrastructure. The development of fuel caches may be required to support testing pitting and drilling operations.

3 Identification of Waste Types

Over the course of the Project, several types of waste will or may be generated. Potential waste types are listed in Table 1 with further management descriptions provided in Section 4.

Table 1: Project Waste Streams

Category	Waste Stream	Description
Non-hazardous waste	Non-recyclable domestic wastes (organic and non-organic)	Organic and non-organic waste including garbage, office garbage and food scraps.
	Construction materials	Pieces of material such as metals and lumber.
	Cleared vegetation	Slashed trees and shrubs with possible grubbing.
Hazardous waste	Contaminated soils and/or snow	Soil and/or contaminated with either diesel, oil or other spill materials.
	Waste oils	Used engine oils
	Used Oil filters	Process (glycol, dips, water)
	Used hydrocarbon containers and absorbents	Containers used to store hydrocarbons and absorbent materials used for spill cleanup.
	Waste antifreeze	From engines possibly contaminated with heavy metals.
	Waste solvents	Solvents used to remove grease and oil from engine components and other machinery.
Recyclable and reusable material	Recyclable domestic wastes (organic and non-organic)	All material appropriate for recycling (i.e., beverage containers, tin cans, plastic and glass).
Sewage	Black water	All human excreta and associated products
Camp wastewater	Grey Water	Water produced from camp operations not including black water
Animal carcasses	Animal carcasses Dead or decomposing animal parts	Animal carcasses encountered in the wild while conducting the program.
Batteries	Lead acid, lithium-ion, and alkaline batteries	From personnel and equipment.

4 Management of Waste

This section describes the general procedures and principles that are to be followed while handling and storing wastes. Waste management will be implemented 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. The sections listed below describe management of each waste stream.

General practices to reduce waste and attractants to wildlife include:

- Minimizing and properly disposing of garbage, food wastes and other edible and aromatic substances into wildlife proof containers.
- Separating recyclables such as beverage containers, plastics, alkaline batteries, lead acid batteries and electronics for recycling in Yellowknife.

- Organizing wastes into animal-proof containers for storage at the work site. This material will then be progressively removed from site throughout the Project.
- Work crews will properly dispose of waste as it is created and inspect work areas for waste before leaving the site.

4.1 Non-Hazardous Wastes

Non-hazardous waste will be managed as follows. Prior to non-hazardous waste being transported to the City of Yellowknife Solid Waste Facility or KBL Environmental, confirmation of acceptance will be provided to the Board.

4.1.1 Non-Recyclable Domestic Wastes (organic and non-organic)

Non-hazardous non-combustible waste will be transferred to the Solid Waste Facility.

4.1.2 Construction Material

Construction materials include material such as metals, wood, and by-products of construction. All such waste will be progressively transferred to the Solid Waste Facility.

4.1.3 Cleared Vegetation

Felled trees and shrubs will be cleared off the alignment progressively as clearing proceeds, branches are removed and stems are cut into lengths so that the vegetation lies flat on the ground to enhance decomposition, or as directed by the Land Use Permit conditions and the Inspector.

4.2 Hazardous Waste

GNWT-INF is responsible for the management and disposal of hazardous waste. All hazardous waste will be submitted under GNWT-INF's registered generator of hazardous waste number NTG027. The Contractor will be responsible for completing and managing the hazardous waste movement documents according to the Guideline for Hazardous Waste Management (GNWT-ENR 2017). General practices for storage and use of hazardous wastes include:

- Hazardous materials and wastes (fuels, oils and lubricants) transported to drill sites will be stored with secondary containment and at least 100 m away from the ordinary high-water mark of any watercourses, as per the Spill Contingency Plan and Land Use Permit.
- Any hazardous wastes will be stored in clearly marked containers (noting content and date of generation) 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 route inspections for leaks.
- Wastes, including contaminated materials requiring disposal, will be transported by a registered hazardous waste carrier to KBL Environmental Ltd. for treatment or disposal in their facilities.
- GNWT-INF or its contractors will complete the appropriate waste manifest to fulfill the *Transportation of Dangerous Goods (TDG) Act* and Regulations requirements and the requirements of the Guideline for the General Management of Hazardous Waste in the NWT.

4.2.1 Contaminated Soils and Snow

Soils and snow contaminated by hydrocarbon spills or other spill material is anticipated to be minimal as all site personnel will be familiar with the Spill Contingency Plan and will follow proper safe operating procedures. All spill responses will follow Spill Contingency Plan procedures.

In the instance that a spill occurs, contaminated soils and/or snow will be managed according to the Spill Contingency Plan, contained on site, and disposed of by a registered hazardous waste carrier to KBL Environmental Ltd.

4.2.2 Waste Oils

Waste oil will be stored in 205 litre drums or similar purpose-built sealed containers and labelled (contents and date) with the appropriate SDS. Storage and removal will follow procedures described in the Spill Contingency Plan, including the requirements for secondary containment and for fuel transfer. Other waste types, such as antifreeze or solvents will not be stored in the same container as waste oils. Waste oil containers will be stored with secondary containment, in particular to contain spills during transfer. Waste oil containers must be stored in low traffic areas or be provided with collision protection. The waste oil will be transported to KBL Environmental Ltd. for disposal.

4.2.3 Used Oil Filters

Used oil filters will be temporarily stored in sealed containers, labelled (contents and date) with the appropriate SDS, and will then transported to KBL Environmental Ltd. for disposal. Oil filters will first be drained into containers provided with secondary containment.

4.2.4 Used Hydrocarbons Containers and Absorbents

Used hydrocarbon containers, absorbents and rags produced on site and any used spill response materials, such as fiber pads or granular absorbents (“floor dry”) will be placed in 205 litre drums or similar purpose-built, sealed containers, and labelled (contents and date) with the appropriate SDS. Accumulated contaminated absorbents will be removed from site and transported to KBL Environmental Ltd.

4.2.5 Waste Antifreeze

Waste antifreeze will be placed into empty containers, labelled (contents and date) with the appropriate SDS, and temporarily stored in the waste management area. Accumulated waste antifreeze will be removed from site and transported to KBL Environmental Ltd. for disposal.

4.2.6 Waste Solvents

Solvents are used to remove grease and oil from engine components and other machinery. Waste solvents will be temporarily stored in purpose-built, sealed containers with secondary containment, and labelled (contents and date) with the appropriate SDS. Waste solvents will be transported to KBL Environmental Ltd. for disposal.

4.3 Recyclable and Reusable Material

All material appropriate for recycling (i.e., beverage containers, tin cans, plastics, and glass) will be identified, segregated, bagged and shipped to the Solid Waste Facility blue bins in Yellowknife. Some select items can be sent back to the manufacturer for recycling or reuse. Large, reusable containers such as drums and metal parts from heavy equipment can be sent back to the supplier for reconditioning and reuse.

4.4 Sewage - Blackwater

All blackwater will be captured in tanks and pumped out for disposal by Kavanaugh Brothers Ltd.

4.5 Camp Wastewater - Greywater

Shower water, kitchen water and water produced from camp operations will be discharged to a sump a minimum of 100 meters from the ordinary high-water mark.

4.6 Animal Carcasses

No storage of animal carcasses will be allowed. If encountered, animal carcasses will be removed from site through discussions with the GNWT-ENR.

4.7 Batteries

Lead acid batteries and alkaline batteries will be placed into empty containers in a temporary storage located in a designated container on site. Batteries will be returned to KBL Environmental Ltd. or The Bottle Depot in Yellowknife.

4.8 Inspections and Reporting

An inspection program is required for all waste storage areas to identify any non-compliances and to confirm that the WMP is being implemented. Inspections must verify that:

- Secondary containment is in place and adequate (i.e., sufficient volume of containment and no debris, snow or water build-up present limiting containment).
- Waste containers are labelled (contents and date) with the appropriate SDS.
- Waste storage areas housekeeping is adequate.
- Waste are not stockpiled and are being regularly transported off-site for disposal.
- There are no signs of leaks or spills.
- Work areas are clean, and all garbage is removed before leaving each test pit or drill site.

Inspections must be documented, and records retained. Where non-conformances are noted during inspection, corrective action must be taken and a record of completion retained.

5 Training

GNWT-INF and its contractors are responsible for providing training to all employees and contractors. A training session on the Waste Management Plan will be held for all employees and contractors involved in environmental monitoring. The training session will review the Plan and include information on:

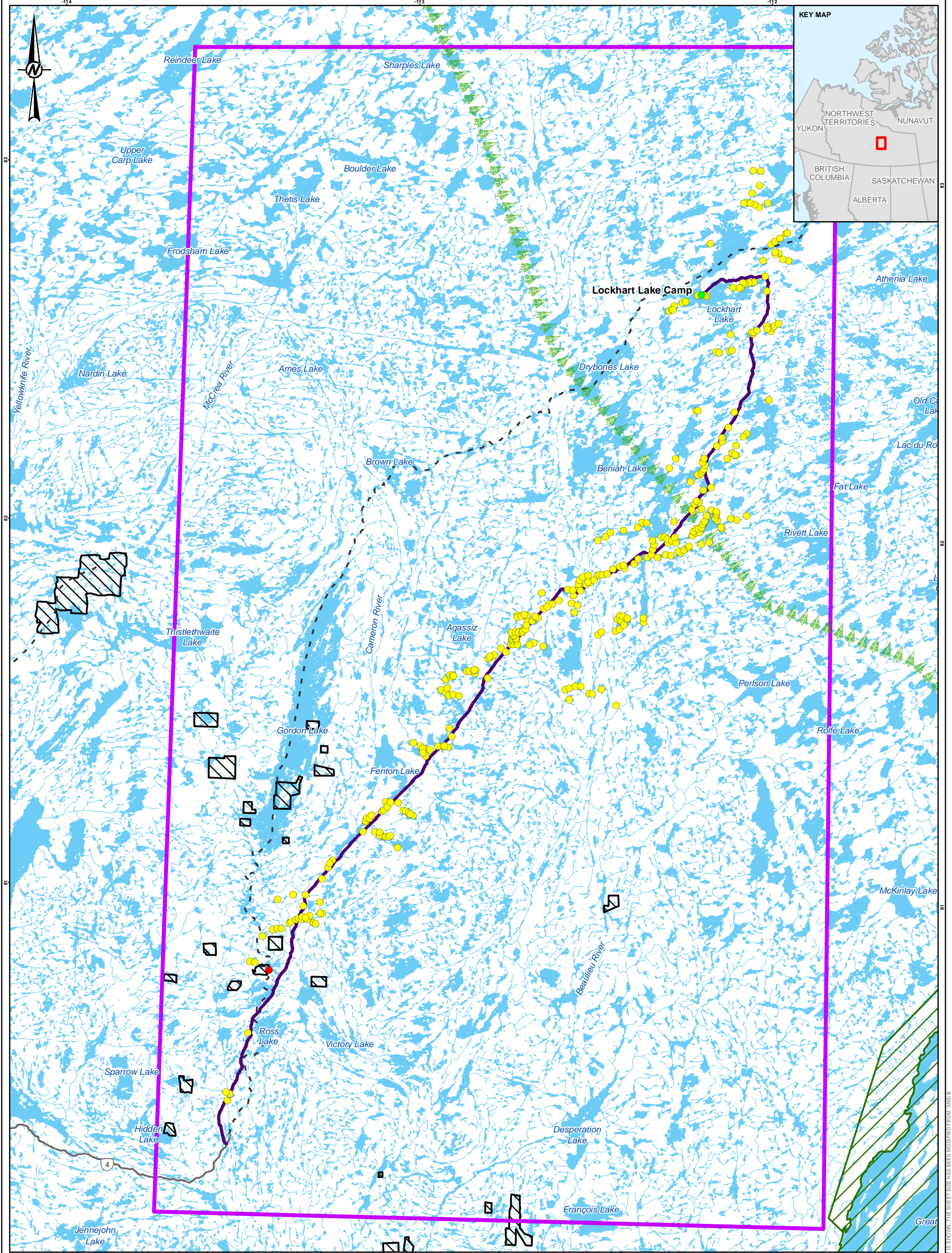
- Individuals' roles and responsibilities.
- Identification of the various types of waste.
- Instructions on how waste streams are separated and managed.
- Current WHMIS qualification will also be required from all employees working on site.

TDG Regulations training will be provided to any employees responsible for the coordination of hazardous waste (i.e., dangerous goods) shipments off-site. Only TDG training employees will prepare, review and sign waste manifests/shipping documents, in accordance with regulatory requirements. TDG training certificates will be retained by the employee and contractor and are valid for three years.

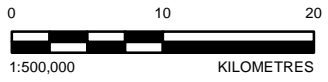
6 References

- Government of Canada. 1992. *Transportation of Dangerous Goods Act*. S.C. 1992, c. 34. Current to February 8, 2023. Last amended on August 28, 2019. Minister of Justice. Ottawa, ON.
- Government of Canada. 1999. *Canadian Environmental Protection Act*. S.C. 1999, c. 33. Current to February 8, 2023. Last amended on May 1, 2021. Minister of Justice. Ottawa, ON.
- GNWT (Government of Northwest Territories). 1988a. *Environmental Protection Act*. R.S.N.W.T. 1988, c. E-7. Last amended 2017. Department of Justice. Yellowknife, NT.
- GNWT. 1988b. *Transportation of Dangerous Goods Act*. R.S.N.W.T. 1988, c. 81 (Supp.). Last amended 2022. Department of Justice. Yellowknife, NT.
- GNWT. 2003a. *Waste Reduction and Recovery Act*. S.N.W.T. 2003, c. 29. Last amended 2017. Department of Justice. Yellowknife, NT.
- GNWT. 2003b. Used Oil and Waste Fuel Management Regulations. R-064-2003. Last amended 2005. Department of Justice. Yellowknife, NT.
- GNWT. 2014. *Waters Act*. S.N.W.T. 2014, c. 18. Last amended 2015. Department of Justice. Yellowknife, NT.
- GNWT-ENR (Environment and Natural Resources). 2017. Guideline for Hazardous Waste Management. Yellowknife, NT. Retrieved September 2021 from: http://www.enr.gov.nt.ca/sites/enr/files/resources/128-hazardous_waste-interactive_web.pdf
- MVLWB (Mackenzie Valley Land and Water Board). 2011. Guidelines for Developing a Waste Management Plan. MVLWB, Yellowknife, NT. Retrieved September 2021 from: <https://mvlwb.com/resources/policies-and-guidelines>

APPENDIX A: Project Maps



- LEGEND**
- DOME LAKE ROAD CAMP
 - LOCKHART LAKE ROAD CAMP
 - GEOTECHNICAL INVESTIGATION TARGET AREAS
 - 2020 AURORA GEOSCIENCES ROUTE
 - INGRAHAM TRAIL
 - TREE LINE
 - - TIBBITT TO CONTWOYTO WINTER ROAD
 - WATERCOURSE
 - FEDERAL LAND PARCEL
 - PROJECT AREA
 - PROTECTED AREA
 - WATERBODY



NOTE
*THE MAPPING EXTENT IS FULLY WITHIN THE AKAITCHO DENE FIRST NATIONS BOUNDARY

REFERENCE(S)
BASE DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. FEDERAL LAND PARCELS, PRIVATE LANDS, PROTECTED AREAS, MINES AND AIRSTRIPS OBTAINED FROM GOVERNMENT OF NORTHWEST TERRITORIES. SURFICIAL GEOLOGY OBTAINED FROM THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, GOVERNMENT OF THE NORTHWEST TERRITORIES.
PROJECTION: UTM ZONE 12 DATUM: NAD 83

CLIENT
**GOVERNMENT OF NORTHWEST TERRITORIES,
DEPARTMENT OF INFRASTRUCTURE**

PROJECT
LOCKHART ALL SEASON ROAD PROJECT

TITLE
GEOTECHNICAL INVESTIGATION TARGET AREAS

CONSULTANT
WSP

YYYY-MM-DD	2023-08-08
DESIGNED	LB
PREPARED	AB
REVIEWED	
APPROVED	

PROJECT NO. CONTROL REV. FIGURE
20139838 D 2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM 420x595mm

APPENDIX B: Confirmation for Waste Acceptance by Third Parties

As per section 4.1, confirmation of waste acceptance from the City of Yellowknife Solid Waste Facility and KBL Environmental will be provided to the Board.

APPENDIX C: Waste Inspection Form

Waste Management Plan
Inspection Form

Date:

Name:

Location:

Use the table below to record observations for each category of waste.

Category	Waste Stream	Description	Management	Observations
Non-hazardous waste	Non-recyclable domestic wastes (organic and non-organic)	Organic and non-organic waste including garbage, office garbage and food scraps.	Transfer to Yellowknife Solid Waste Facility	
	Construction materials	Pieces of material such as metals and lumber.	Transfer to Yellowknife Solid Waste Facility	
	Cleared vegetation	Slashed trees and shrubs with possible grubbing.	Lie flat on the ground	
Hazardous waste	Contaminated soils and/or snow	Soil and/or contaminated with either diesel, oil or other spill materials.	Follow Spill Contingency Plan	
	Waste oils	Used engine oils	Store in sealed containers with SDS labels, transfer to KBL Environmental.	
	Used Oil filters	Process (glycol, dips, water)	Store in sealed containers with SDS labels, transfer to KBL Environmental.	
	Used hydrocarbon containers and absorbents	Containers used to store hydrocarbons and absorbent materials used for spill cleanup.	Store in sealed containers with SDS labels, transfer to KBL Environmental.	
	Waste antifreeze	From engines possibly contaminated with heavy metals.	Store in sealed containers with SDS labels, transfer to KBL Environmental.	
	Waste solvents	Solvents used to remove grease and oil from engine components and other machinery.	Store in sealed containers with SDS labels, transfer to KBL Environmental.	

Waste Management Plan
Inspection Form

Category	Waste Stream	Description	Management	Observations
Recyclable and reusable material	Recyclable domestic wastes (organic and non-organic)	All material appropriate for recycling (i.e., beverage containers, tin cans, plastic and glass).	Segregated and stored for return to Yellowknife.	
Sewage	Black water	All human excreta and associated products	Managed by Kavanaugh Brothers Ltd.	
Camp wastewater	Grey Water	Water produced from camp operations not including black water	Discharged to approved sump	
Animal carcasses	Animal carcasses Dead or decomposing animal parts	Animal carcasses encountered in the wild while conducting the program.	Contact GNWT-ECC for instruction	
Batteries	Lead acid, lithium-ion, and alkaline batteries	From personnel and equipment.	Store and return to KBL Environmental Ltd. or Yellowknife Bottle Depot	

General Observations:

- Is secondary containment is in place and adequate?
- Are waste containers are labelled (contents and date) with the appropriate SDS?
- Is the waste storage area clean and orderly?
- Is waste regularly transported off-site for disposal?
- Any sign of leaks or spills?
- Are work areas are clean, and all garbage is removed before leaving the work site?

Other Observations:
