ENVIRONMENTAL SITE ASSESSMENT AT IQALUIT AIRPORT

Waste Management Plan

Prepared for:
Transport Canada
344 Edmonton Street
Winnipeg MB R3B 2L4

Prepared by:

Stantec Consulting Ltd
2nd Floor 4910 53 Street
PO Box 1777
Yellowknife NT X1A 2P4

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PLAN MAINTENANCE AND CONTROL

Transport Canada and the Environmental Health and Safety Manager of the Drilling Contractor are responsible for the distribution, maintenance and updating of the Waste Management Plan (WMP).

This Waste Management Plan will be reviewed as needed, taking into account changes in the law, environmental factors, Transport Canada and Drilling Contractor policies, and any other pertinent site-specific changes.

Changes in phone numbers, names of individuals, etc. that do not affect the intent of the plan are to be made on a regular basis. Plan updates will be issued as per the Waste Management Plan distribution list. The Waste Management Plan holder is responsible for adding new and/or removing obsolete pages upon receipt of updates.

Waste Management Plan Document History

Revision #	Section(s) Revised	Description of Revision	Prepared by	Issue Date

Additional copies of the Waste Management Plan can be obtained from the Environmental Health and Safety Manager of the Drilling Contractor and/or the Transport Canada representative responsible for the Project.

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Acronyms

ESA Environmental Site Assessment

FFTA Former Firefighting Training Area

PFAS Per-and Polyfluoroalkyl Substance

TDGR Transportation of Dangerous Goods Regulations

WMP Waste Management Plan

1 INTRODUCTION

This Waste Management Plan (WMP) has been developed by Transport Canada for use for a groundwater sampling program at the Iqaluit Airport (the Project).

The purpose of the WMP is to provide a guide to all site personnel on the waste management objectives and procedures to be followed during the Project. The objective of the WMP is to:

- Ensure components of the environment, including the air, water, land, vegetation, wildlife and fish, are not negatively affected by the Project; and
- Ensure the Project will comply with all applicable acts and regulations, as well as conditions outlined in the Project's land use permit.

The WMP will be revised as needed to reflect changes or site-specific conditions.

1.1 ENVIRONMENTAL POLICY AND PROCEDURES

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 operational requirements to ensure that the Project is conducted in an environmentally responsible manner.

1.2 LEGISLATION AND GUIDELINES

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

- *Environmental Guideline for the General Management of Hazardous Waste (*Government of Nunavut DoE 2010*)*
- *Environmental Guideline for Contaminated Site Remediation* (Government of Nunavut DoE 2009)

1.3 PROJECT DETAILS

Transport Canada is planning to install monitoring wells and conduct groundwater sampling at the former firefighter training area (FFTA) at the airport in Iqaluit, Nunavut.

The purpose of the groundwater sampling program is to confirm the presence or absence of Per- and Polyfluoroalkyl Substance (PFAS) impacts in groundwater at the airport property boundary. Boreholes will be drilled and completed as monitoring wells. Groundwater samples will be collected from the newly installed monitoring wells. Groundwater and drill cutting samples will be submitted to an accredited laboratory for PFAS analysis. The methods for disposal of purged groundwater and drill cuttings will be determined once the analytical results are obtained.

A complete description of the Project is in the Project Description along with drawings.

1.4 PROJECT CONTACT

Reid Campbell
Environmental Officer, Environmental Services
Transport Canada
344 Edmonton Street
Winnipeg, MB R3B 2L4
Phone: (204) 984-2720
Email: reid.campbell@tc.gc.ca

1.5 DISTRIBUTION LIST

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

1. Applicable Transport Canada Employees
2. Drilling Contractor Representative
3. Environmental Consultant (if applicable)
4. Government of Nunavut – Department of Environment

2 DEFINITIONS

2.1 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 landfill or a sewage treatment facility and meets the applicable standards set out in the Environmental Guideline for Industrial Waste Discharges.

2.2 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, whichever is less. This does not include containers which previously contained mercury, or Class 2.3, 5.1 or 6.1 materials of TDGR.

2.3 SMALL QUANTITY

Hazardous wastes are considered to be small quantities if it is generated in an amount that is less than 5 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 1 L.

3 IDENTIFICATION OF WASTE TYPES

Over the course of the Project, several types of waste may be generated by equipment and crews. Potential waste types are listed in the table below with further management descriptions provided in Section 5:

Table 1 Segregated Waste Streams

Waste Stream	Description	Handling Method	Disposal Method
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 disposed of at approved facilities.
Construction materials	Pieces of material such as well casing.	Collect and store in bins at designated area on site.	Waste will be removed from site and disposed at an approved facility.
Contaminated soils and snow	Soil or snow contaminated with either diesel, oil or other hazardous materials.	Pick up contaminated soils or snow and place in lined facility or drum.	Soils or liquid residue will be placed in drums and removed by registered hazardous waste carrier and disposed at an approved facility.
Contaminated drill cuttings/purge water	Drill cuttings or water purged from monitor wells that exceeds applicable site guidelines.	Drill cuttings and purged water will be stored on site while samples are analyzed by an accredited laboratory.	Disposal method will be determined based on the analytical results. Disposal will be conducted in an approved manner.
Waste oils	Vehicle maintenance	Store in appropriate containers.	Disposed at approved facilities.
Used filters	Process (glycol, dips, water)	Store in appropriate containers.	Disposed at approved facilities.
Used hydrocarbon containers and absorbents	Containers used to store hydrocarbons and absorbent materials used for spill cleanup.	Store in appropriate containers.	Disposed at approved facilities.

3.1 NON-HAZARDOUS, NON-MINERAL WASTES

Non-hazardous, non-mineral wastes generated during the ESA will primarily include domestic wastes. Domestic waste will be created by site personnel.

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

3.2 HAZARDOUS WASTES

While it is expected that vehicle maintenance will occur in existing facilities within existing maintenance facilities, there may be occasions where equipment requires servicing in the field. Other potentially hazardous wastes may include contaminated soil, and snow or water 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.

4 WASTE MANAGEMENT FACILITIES

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

All fuel storage will consist of double-walled fuel tanks and/or approved storage containers with secondary containment (e.g., lined tray and berms).

5 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.

5.1 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.

5.1.1 DOMESTIC WASTES

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.
- Ensuring work crews inspect work areas and collect and properly dispose of any waste that may have been discarded.

5.1.2 CONSTRUCTION WASTE

Waste will be stored in a designated section of the site. This material will then be removed from site throughout operations and disposed of at an approved facility.

5.1.3 BULKY METALS

Vehicle and equipment failure may occur on the Site; if this does occur, all materials will be hauled off the site and repaired at a designated facility or will be properly disposed of in an approved waste facility.

5.2 HAZARDOUS WASTE

Transport Canada is responsible for the proper management and disposal of hazardous waste generated on the project site either directly by Transport Canada or by its contractors. The Drilling Contractor will be responsible for completing and managing the hazardous waste movement documents according to the *Environmental Guideline for the General Management of Hazardous Waste*, while maintaining contact with Transport Canada to ensure proper management of the waste.

If hazardous materials and wastes (fuels, oils and lubricants) are transported onto the site, they will be stored within an enclosure providing secondary containment at least 100 m away from the high-water mark of any watercourses. 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 and transported to an approved facility for treatment or disposal. If other contaminated materials require disposal (i.e., spill pads), these will be disposed at an approved facility. On behalf of Transport Canada (the waste generator), the Drilling Contractor will complete the appropriate waste manifest to fulfill *Transportation of Dangerous Goods Regulations* requirements and the requirements of the *Environmental Guideline for the General Management of Hazardous Waste.* Any contaminated snow, soil, and/or water will also be transported to an approved facility for treatment/disposal.

5.2.1 CONTAMINATED SOILS AND SNOW

Contaminated soils and/or snow as a result of hydrocarbon spills or other spill material are not anticipated.

In the instance that a spill does occur, it is expected that contaminated soils/snow will be picked up and placed in drums which will then be removed by a registered hazardous waste carrier to an approved facility. Should a larger spill occur, a secondary containment structure or lined facility may be required. WASTE OILS

Waste oil, if generated during the ESA, will be stored in 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. Waste oil will be disposed at an approved facility.

5.2.2 USED FILTERS

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

5.2.3 USED HYDROCARBON CONTAINERS AND ABSORBENTS

Used hydrocarbon containers, absorbents and rags produced onsite and any used spill response materials, such as fiber pads or granular absorbents (‘floor dry’) will be placed in appropriate containers and temporarily stored in the waste management area. Accumulated contaminated absorbents will be removed from site disposed at an approved facility.

5.2.4 CONTAMINATED DRILL CUTTINGS/PURGE WATER

Drill cuttings will be stored in a sealed drum. Disposal methods will be determined according to the results of laboratory analysis of soil samples collected from drill cuttings.

Purge water will be stored in a sealed drum. A sample of the purged groundwater will be submitted for laboratory analysis to determine if contaminants are present. Disposal method will be determined according to the results of the laboratory analysis.

6 REFERENCES

Government of Nunavut Department of Environment (DoE). 2010. Environmental Guideline for the General Management of Hazardous Waste. Available online at: https://www.gov.nu.ca/sites/default/files/Guideline%20-%20General%20Management%20of%20Hazardous%20Waste%20%28revised%20Oct%202010%29_0.pdf. Accessed on March 7, 2019

Government of Nunavut Department of Environment (DoE). 2009. Environmental Guideline for Contaminated Site Remediation. Available online at: https://www.gov.nu.ca/sites/default/files/Guideline%20Contaminated%20Site%20Remediation.pdf. Accessed on March 7, 2019