



Stantec

**Waste Management Plan for the Right
of Way Clearing, Km 1508-1478,
Mackenzie Valley Winter Highway**

January 2013

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WASTE MANAGEMENT PLAN FOR THE RIGHT OF WAY CLEARING, KM 1508-1478, MACKENZIE VALLEY WINTER HIGHWAY

1.0 Introduction

This Waste Management Plan (WMP) has been developed for use by the Government of the Northwest Territories (GNWT) Department of Transportation (DOT) and its Contractor during the Right of Way (ROW) Clearing along Km 1508 – 1478 of the proposed Mackenzie Valley Highway (MVH) in the Gwich'in Settlement Area (GSA). The Project activities to be completed include mobilization and demobilization of equipment, clearing of vegetation and construction of snow fill crossings during the period of January to March.

The purpose of the WMP is to provide a guide to all site personnel on the waste management goals, objectives and procedures to be used during construction of the Project. The WMP has been developed in accordance with the *Guidelines for Developing a Waste Management Plan* prepared by the Mackenzie Valley Land and Water Board (2011). The goal of the WMP is to:

1. Ensure components of our environment, including the air, water, land, vegetation, wildlife and fish, are not negatively affected by Project activities;
2. Ensure aesthetic and land use values of the Project area remain intact following Project completion; and,
3. Ensure the Project will comply with all applicable acts and regulations, as well as conditions outlined in the DOT's land use permit and water license.

1.1 PROJECT / SITE DESCRIPTION

The proposed operation involves Right-of-Way clearing for the first 30 km of the proposed highway alignment. Activities proposed under this application include:

- Right-of-Way (ROW) Clearing will involve both machine and hand clearing of trees and shrubs to within 0.10 m of ground surface in a manner that will not disturb the existing insulating organic layer. Clearing will occur on 15 metres either side of the centerline of the proposed MVH from its origin at Km 248 of the Dempster Highway to Km post 1478 of the MVH, a distance of approximately 30km.
- Water Course Crossings –Snow fills will be constructed at the three water crossings to allow the heavy equipment to cross the watercourses safely and without negative effects to the terrain.

No camp will be set up. Workers will travel daily to the site from Inuvik.

2.0 Identification of Waste Types

Over the course of the Project, several types of waste will be generated by equipment and crews working within the Project area. All potential waste types are listed below and further descriptions are provided in Sections 2.1 to 2.3:

- Non-hazardous non-mineral wastes:
 - Domestic wastes
 - Sanitary wastes
 - Cleared vegetation
- Hazardous wastes:
 - Used oil, fuel, lubricants, greases, oil, filters, and solvents
 - Contaminated soil, snow/ice and/or water

2.1 NON-HAZARDOUS NON-MINERAL WASTES

Non-hazardous, non-mineral wastes generated during the Project will primarily include domestic wastes, sanitary wastes, and construction materials. Domestic wastes will be brought to the site with Project personnel in their lunches, crew vehicles, etc., while sanitary wastes will be generated on-site. It is estimated that less than 5 m³ each of domestic and sanitary wastes will be generated over the construction period (January to March).

Vegetation removal along the ROW will include tree and shrub cutting to within 0.10 m above ground surface.

The potential environmental effects arising from unmanaged non-hazardous, non-mineral wastes include increased wildlife attractants, potential for sanitary spills or leaks, a change in the aesthetics of the Project area, and degradation of water quality, and wildlife and fish habitat quality.

2.2 HAZARDOUS WASTES

Potential hazardous wastes generated on-site include waste oil, fuel, lubricants, oil filters, solvents, etc., from use and maintenance of heavy equipment. Other potential hazardous wastes may include contaminated soil, snow or water should a spill occur during Project activities. It is estimated less than 3 m³ of hazardous wastes may be generated during construction activities.

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

3.0 Management of Waste Types

3.1 NON-HAZARDOUS NON-MINERAL WASTES

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

- Domestic wastes:
 - On-site, domestic wastes will be stored in clearly marked containers with tight-fitting lids (i.e., garbage cans and transported to Inuvik daily with site personnel and disposed of at the Inuvik Solid Waste Facility.
- Sanitary wastes:
 - On-site, sanitary wastes will be stored in a portable bathroom facility. Sanitary wastes will be removed from site, likely every week, for disposal in the Inuvik Sewage Facility.
- Cleared vegetation (from INAC 2010b):
 - Trees will be felled onto the ROW and away from water bodies to prevent disturbance of the adjacent forest and minimize the amount of vegetation material on the frozen surface of water bodies.
 - If clearing trees or packing snow with a dozer blade, mushroom or smear blades will be used and the uprooting of the trees will be avoided. Small trees and shrubs will be cleared by hand, or with the dozer blade to “walk down” the vegetation, with the blade set at a fixed height. The blade will push small trees and shrubs down and the weight of the machine will compress felled vegetation. The ground cover and surface organic layer will be left in place.
 - Felled trees and shrubs will be cleared off the ROW progressively as clearing proceeds. Excess brush and snow will be windrowed along the side of the MVWR alignment; 10 m wide breaks will be placed at 300 m intervals along the windrow to facilitate wildlife passage.
 - Burning of the brush may be required. If determined necessary, brush piles will be burned in the middle of the alignment to minimize the risk of fire spreading.
- Construction materials:
 - On-site, waste construction materials will be stored in clearly marked containers with lids. These waste materials will be transported back to Inuvik a minimum of bi-weekly, if necessary, and disposed of at the Inuvik Solid Waste Facility. These containers will be inspected daily to ensure no domestic waste is disposed of here.

3.2 HAZARDOUS WASTES

Hazardous wastes generated during the Project will be stored at the designated fuelling and mechanic's shed within the Project area. This fuel sloop and mechanic's shed will be skid mounted and therefore will be relocated along the ROW as the work progresses. These facilities will be stationed at least 30 m from the high water mark of any water body.

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Any hazardous wastes will be stored in clearly marked containers with lids (i.e., drums). Any hazardous wastes will be removed from the designated storage area a minimum of bi-weekly, if necessary. These wastes will be transported back to Inuvik and disposed of at the appropriate location within the Inuvik Solid Waste Facility. If the Inuvik Solid Waste Facility is unable to accept the hazardous waste(s), the wastes will be shipped to an appropriate disposal facility in southern Canada, or appropriately stored within the Contractor's or DOT's garage for a back-haul program.

4.0 Infrastructure Required for Waste Management

The following types of infrastructure will be required for proper waste management of the Project:

- Cleared vegetation storage area – this area for windrowing or burning will be selected within the ROW during Project activities by the Contractor and DOT site representative.
- Waste storage or disposal facility – Inuvik Solid Waste Facility
- Sewage disposal facility – Inuvik Sewage Facility
- Appropriate hazardous waste disposal facility – Inuvik Solid Waste Facility or an appropriate facility in southern Canada.

5.0 References

Indian and Northern Affairs Canada (INAC). 2010a. Northern Land Use Guidelines Volume 7 – Pits and Quarries. Natural Resources and Environment Branch, INAC, Ottawa, ON. Available online: <http://www.aadnc-aandc.gc.ca/eng/1100100023585/1100100023587> (13 November 2012).

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Mackenzie Valley Land and Water Board (MVLWB). 2011. Guidelines for Developing a Waste Management Plan. MVLWB, Yellowknife, NT. Available online: <http://mvlwb.com/resources/policy-and-guidelines> (19 November 2012).