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Town of Inuvik, NT

Municipal Solid Waste Disposal Facility
Operation and Maintenance Manual

Project number: 60547247 (432)

December 19, 2017

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AECOM: 2015-04-13

Quality information

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Table of Contents

Figures

Tables

Appendices

1. Introduction

In February of 2017, an application for the renewal of the Type A Water Licence G17L3-001 was submitted to the Gwich'in Land and Water Board (GLWB) by the Town of Inuvik (the Town). The Licence, included in **Appendix A**, was issued in May 2017 and is subject to specified conditions.

This Operation and Maintenance (O&M) Plan has been developed to meet "Part E: Conditions Applying to Operation and Maintenance" of the Water Licence, specifically for the Solid Waste Disposal Facilities. It includes all the information requested in the "Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility" issued by the Mackenzie Valley Land and Water Board (MVLWB) in June 2017.

1.1 Objective

This manual has been developed to:

- Provide the Town of Inuvik with "best management practices" for the operation and maintenance of its Solid Waste Disposal Facility
- Document these practices, where required, for review by the Gwich'in Land and Water Board
- Meet the conditions specified in Water Licence G17L3-001

1.2 Operating Principles

The facility is to be operated according to the following principles:

- Operations are managed by an Operator who is on-site during operations hours
- Access is controlled
- Only approved or authorized waste is accepted
- Wastes are compacted to the greatest practical density
- Wastes are covered with soil to control nuisances
- Surface water is controlled
- Safe operating practices are followed
- Records, required at a minimum by the Licence, are maintained with respect to operations and site development

A contact list for relevant Town of Inuvik personnel may be found in **Appendix C**.

1.3 Operation Policies

Operation Policies are developed to provide specific details related to the operation and maintenance of the facility in general accordance of the requirements of the GLWB Water License.

These Policies, presented in **Appendix D** of this manual, cover a wide range of topics; including safety, emergency response, record keeping, list of waste items not accepted, a list of waste items accepted, handling procedures for hazardous waste, litter control, etc. All personnel involved with the operation of the facility must be fully conversant with these Policies.

The Operation Policies may be amended by the Senior Administration Officer (SAO) as required. In case of discrepancies between the content of this manual and the Operation Policies, the Policies shall govern.

2. Background

2.1 Location of the Town of Inuvik

The Town of Inuvik is situated in the Inuvik Region of the North West Territories (NWT). It is located at 68° 21' 42" N latitude, 133° 43' 50" W longitude, along the East Channel of the Mackenzie River Delta, 200 kilometres (km) north of the Arctic Circle and 97 km north of the Beaufort Sea.

According to the North West Territories Bureau of Statistics, the Town had a population of 3,170 in 2016 (North West Territories Bureau of Statistics, 2016).

The Town has one operating landfill, Mount Baldy Community Solid Waste Landfill (Mt. Baldy, which was first opened in 1976. The landfill is located 1.2 km from the Town at N 7582211 E 554305 NAD83 UTM coordinates. A location plan is included in **Appendix B**.

2.2 Physical and Geological Setting

Surface geology consists of Morainal Deposits of till and associated gravel and sand deposited directly or with minor reworking, by glacier ice; generally modified by cryturbation. Thickness of the layer varies but is generally 2 to 5 metres (m) thick (Rampton, 1987). Bedrock geology consists of silty marine shale of the Horton River Formation (Norris, 1981).

The climate can be characterized by long cold winters and short cool summers. According to the Environment Canada Climate Normals (ECCCN, 1981-2010) collected from the Inuvik Airport's weather station from 1971 to 2010, the annual daily mean temperature was -8.2 degrees Celsius (°C), with a high of 14.1 and a low of -26.9°C. The average total annual precipitation is 240.6 millimetres (mm); consisting of 158.6 cm of snowfall and 114.5 mm of rainfall. The warmest month on average is July, which has a mean temperature of 14.1°C, a high of 19.5°C and a low of 8.6°C. The coldest month on average is January with a mean temperature of -26.9 °C, a high of -22.8°C and a low of -31.0°C. The coldest temperature on record was -56.7°C on February 4, 1968. The warmest temperature on record was 32.8°C on July 20, 2001 (ECCCN, 1981-2010).

3. Operation and Maintenance Plan – Solid Waste Facility

This Operations and Maintenance Plan replaces existing Plan dated 2012.

The information provided in this Plan satisfies the requirements of the MVLWB Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility, and the Water Board Licence G17L3-001, included in **Appendix A**.

3.1 Site Description

3.1.1 Mt. Baldy Community Solid Waste Landfill

Mt. Baldy Community Solid Waste Landfill is located 450 m east of Airport Road, near the base of Mount Baldy. The location of the landfill entrance is N 7582211, E 554305. Figure 4 in **Appendix B** provides additional coordinate points along the landfill perimeter. All coordinates are UTM NAD 83.

The site is bounded by Mount Baldy to the northeast, cover soil borrow areas to the northwest, an industrial development and Airport Road to the west, and open land to the south. Any expansions could take place into the open land. Figure 1 shows the location of the landfill and the two (2) Surveillance Network Program stations that monitor the landfill's run-off (SNP 0036-4 and SNP 0036-5).

The ground conditions are considered as continuous permafrost, as per the MVLWB Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility definition.

3.2 Solid Waste Facility Staff

3.2.1 Administrative Structure

3.2.1.1 Senior Administrative Officer (SAO)

The Senior Administration Officer (SAO) has overall responsibility of all Departments, including the Municipal Services/Public Works Department which is responsible for management and operation of the Municipal Solid Waste (MSW) Disposal Facility. The SAO responsibilities in relation to the solid waste facility include:

- Review and allocate operating budget
- Monitor overall operations to confirm compliance with the requirements of the Water License and this manual
- Confirm personnel obtain proper training
- Review emergency response plans and confirm emergency drills occur on a regular basis
- Coordinate annual audits of the facility
- Review and submit reports to the GLWB, as required by the Water License

See **Appendix C** for the Town of Inuvik's relevant personnel contact list.

3.2.1.2 Municipal Services Manager (MSM)

The Municipal Services Manager (also referred to as Municipal Works Manager) responsibilities for the solid waste facility include:

- Administer the Landfill Operation Contract
- Prepare annual operation and maintenance budgets for submission to the SAO

- Manage, and monitor the landfill operation contractor to confirm operation and maintenance activities are in accordance with the Water License and Operations Manual
- Monitor and confirm that Contractor is providing required operator training
- Liaise with the GLWB
- Respond to public inquiries
- Prepare emergency response plans and schedule regular emergency drills
- Update the Safety Plan for the facility
- Review and update Landfill Operations Plan and associated policies as required, for submission to SAO
- Co-ordinate and arrange for monitoring of surface water
- Prepare Annual reports required by the Water License
- Organize landfill audits

See **Appendix C** for the Town of Inuvik's relevant personnel contact list.

3.2.1.3 Landfill Operator

The Landfill operation is contracted to Harder Enterprises Ltd. The Landfill Operator responsibilities for the solid waste facility include:

- Operate the site in compliance with the Landfill Operation Plan and Policies
- Prepare and maintain an operational record of the facility
- Provide direction to the public
- Waste placement and compaction
- Access control
- Screen waste for acceptance or rejection
- Litter control
- Infrastructure maintenance
- Site monitoring and completion of inspection forms
- Site safety
- Emergency response and spill control
- Record keeping and reporting to Municipal Services Manager

See **Appendix C** for the Town of Inuvik's relevant personnel contact list.

3.2.2 Staff Training

Part of the MSM responsibilities is to coordinate proper training for the personnel working at the landfill. The landfill staff shall have the following training:

- Transport of Dangerous Goods (TDG)
- Workplace Hazardous Materials Information System (WHMIS)
- Landfill Operations Basics (SWANA)
- Standard First Aid

A local qualified independent business is contracted by the Town to remove and salvage the Ozone Depleting Substances (halocarbons, refrigerants) as required, approximately twice a year.

Training records must be kept by the MSM at the Town office.

3.3 Security and Control

3.3.1 Access Gates

Access to the facility is controlled by a two gates; the first gate is located along the access road, 200 m from the facility and the second gate is located at the main entrance, both gates must be locked outside of operating hours. The Landfill Operator or his designate must be on site during Operating hours and shall control access at the gate and direct vehicles to the appropriate disposal/storage area(s), based on the type of waste. Access control shall occur according to the following list of landfill policies provided in **Appendix D**.

- Hours of operations shall conform to **Public Access Hours of Operations Policy**
- Access to the landfill outside of operating hours shall be granted according to the **After Hours Policy**
- The Landfill Operator shall secure the site at the end of the work day according to the **Last Man Out Policy**
- Visitor shall be managed according to the **Visitor Record Policy**
- Distribution of keys for the gates shall be in accordance with the **Key Policy**

3.3.2 Signage

A sign with the facility name, hours of operation, the name and phone number of the landfill operating company, and emergency phone numbers is located at the facility's entrance. Signage indicating the acceptable and the banned waste shall be placed at the entrance of the landfill. Designated areas for specific types of waste shall have a sign indicating the type of waste stored.

Additionally, each Surveillance Network Program (SNP) monitoring site is marked and signed.

3.3.3 Fencing

A partial fence is currently installed at the landfill site as shown in Figure 3 in **Appendix B**. The Landfill Operator must inspect the fence once a month.

3.4 Facility Operations

The solid waste facility has been accepting waste since 1976 and is currently being operated under contract by Harder Enterprises Ltd as previously discussed in Section 3.2.1.

The hours of operation of the facility are Monday to Friday from 9:00 am to 6:00 pm, and Saturday and Sunday from 1:00 pm to 4:00 pm. The landfill is closed on Statutory Holidays as per the **Public Access Hours of Operation Policy** in **Appendix D**.

A weight scale, Precision Giant System Inc. Model EST-11-70-80-4-pu 2014, is used at the facility and is located at the entrance of the landfill, past the second gate and visible from the site office.

As part of the operations, the following heavy equipment is to be maintained and used on site:

- Loader
- Compactor
- Gravel truck

3.5 Facility Design

The layout of the landfill is shown in Figure 2. The landfill includes the following elements:

- Active waste disposal cell
- Area for scrap tire storage
- Area for white goods storage
- Area for Construction & Demolition debris and scrap metals storage
- Asbestos burial area
- Area for batteries, paint storage
- Honey bag disposal pit
- Site Office
- Weigh scale

3.5.1 Active Waste Disposal Cell

The solid waste facility is not an engineered landfill. The landfill cell has no liner system and the facility relies on natural attenuation for landfill leachate management.

The active cell is located on the south side of the facility, occupying a large area (approximately 6,000 square metres; m^2). To date, no areas of the cell have been closed.

3.5.2 Area for Scrap Tires Storage

The scrap tire receiving and storage area is located past the gate and across from the site office and weight scale. Good housekeeping must be employed in this area to keep the site organized and safe. Access must be provided for fire fighting vehicles. Fire separation must be maintained from other combustible materials. Once the tire stockpile reaches a certain height, it will be buried.

3.5.3 Area for White Goods Storage

The refrigerators, freezers and other “white goods” appliances storage compound is located along the north side of the facility. The parts that are not salvaged are to be crushed and landfilled on a regular basis, at a minimum of once per year.

3.5.4 Area for Construction & Demolition (C&D) Debris and Scrap Metals Storage

The C&D and scrap metal area is located in the south area of the facility, adjacent to the active household waste disposal area. Some common C&D wastes that are expected to be received at the landfill include but are not limited to: concrete, electrical wires, plumbing, insulation, shingles and siding. The received C&D debris and scrap metal is to be placed in the specified area and covered twice a year.

3.5.5 Asbestos Burial Area

The site is registered to receive asbestos waste, which is to be handled according to the Environment and Natural Resources (ENR) guidelines and the **Asbestos Handling Policy** in **Appendix D**. The asbestos is buried on site by the generator. The Landfill Operator must supervise the generator at all times to verify compliance with current Asbestos handling regulations. The asbestos burial location must be recorded by the generator using a GPS survey system, and the records must be kept in the site office. The general asbestos burial area is located in the northeast area of the landfill.

3.5.6 Area for Batteries and Paint Storage

Batteries and paint are stored on the east side of the facility, past the gate and across from the site office and the weight scale. Paint must be disposed in accordance to the Guidelines for the Management of Waste Paint in the Northwest Territories. The batteries must be shipped out of the facility as per the Guidelines for the Management of Waste Batteries in the Northwest Territories.

3.5.7 Honey Bag Disposal Pit

The honey bag disposal pit is located on the east side of the facility, next to the active household waste area. Every spring, the current honey bag disposal pit must be covered and a new pit must be dug.

3.5.8 Site Office and Weigh Scale

The site office and weigh scale are located past the gate at the entrance to the facility. The Landfill Operator is responsible for recording the all required information as per **Scale Operation Policy** in **Appendix D**.

3.6 Accepted Materials

The following types of waste may be accepted at the landfill:

- Inert solids – including construction, renovation, and demolition debris.
- MSW – including plastics; paper; cardboard; wood; kitchen scraps; ceramics; etc.
- Non-hazardous solid wastes – which may include, but not limited to materials deemed to be non-hazardous as defined by the Guidelines for the General Management of Hazardous Waste in the Northwest Territories. In addition, the landfill is registered to accept Asbestos and Lead-acid batteries

Table 1 shows a list of materials accepted at the landfill and the final disposal method for each type of material.

The Town has a “Garbage Scavenging By-law” in place, which allows businesses and general public that hold a permit to engage in salvage operations at the facility. There is no cost to obtain a Solid Waste Salvage permit. Materials not salvaged must landfilled a few times a year, depending on volume.

The Town’s Fire Department runs a Household Hazardous Waste (HHW) collection event once a year. Due to this event, the landfill does not receive large quantities of HHW. The HHW received at the landfill is stored in an appropriate storage container, and shipped out once a year in co-ordination with the Fire Department’s collection event.

Table 1: Accepted Materials

	Not Accepted	Landfilled at Site	Segregated for Reuse	Shipped out for Recycling or Disposal	Burned	Composted
Municipal Solid Waste		X				
Construction, renovation, and demolition waste (with the exception of hazardous waste including asbestos)		X				
Scrap Metal		X				
White Goods			X			
Tires		X				
Electronic waste		X				
Recyclables – Plastics		X				
Recyclables – Tin cans		X				
Recyclables – Returnable Beverage Containers		X				
Recyclables – Cardboard		X				
Recyclables – Mixed Paper/Newspaper		X				
Recyclables – Glass		X				
Household Hazardous Waste				X		
Non-hazardous waste from the industrial sector within the community		X				

	Not Accepted	Landfilled at Site	Segregated for Reuse	Shipped out for Recycling or Disposal	Burned	Composted
Non-hazardous waste from the commercial sector within the community		X				
Non-hazardous waste from the institutional sector within the community		X				
Reusable goods		X				
Clean wood and tree trimmings		X				
Mixed paper and cardboard		X				
Mixed solid waste		X				
Food and yard waste		X				
Animal carcasses		X				
Biosolids	X					
Honey Bags		X				

3.7 Waste Generation and Site Capacity

The solid waste facility receives the majority of waste from the Town. The amount of waste received at the landfill is determined using the weigh scale records. The annual tonnage of waste received at the facility from June 2016 to May 2017 is 5,816 tonnes/year. According to the NWT Bureau of Statistics website (www.statsnwt.ca), the current population for Inuvik for the year 2016 is 3,170. The calculated per capita waste generation rate is 5.03 kg/capita/day.

To estimate the space required for waste over the next 10 years, the following assumptions have been used:

- Ratio of cover material to waste: 5 parts waste to 1 part soil (5:1)
- MSW compacted density: 300 kilograms per cubic metre (kg/m^3)
- Current population (2016): 3,170
- Population in 10 years (2025): 3,123 based on NWT Bureau of Statistics website and it is noted that the projection is for a reduction in community population.

Using the above assumptions and the formulas provided in the "Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility" issued by MVLWB, the space required for the next 10 years is 193,873 cubic metres (m^3).

The estimated overall available capacity of the landfill is 480,000 m^3, which exceeds the estimated space required for the next 10 years. To estimate the available capacity of the landfill, a cell size of 300 m by 200 m and a height of 8 m has been assumed.

3.8 Community Waste Collection and Handling

The Town's waste collection service is provided under contract to Bob's Welding & Heavy Equipment Ltd. Waste collection is provided door-to-door throughout the community at a frequency of once per week. The waste collection routes and schedules are available on the Town's website.

A Heavy Item Garbage (HIG) Program is in place and it consists of a once per year pickup event during the month of June. These items can be placed at curbside and must be identified with an HIG sticker. The HIG sticker is available from the town office. Items identified as HIG include:

- Washers, dryers, stoves, furniture (such as sofas, dressers, etc.), mattress, box springs,
- Carpets
- Separated/salvageable metal materials (in small quantities)
- Lumber (in small quantities)

The door-to-door collection of some recyclables is provided by an independent third party, Harder Enterprises Ltd.

3.9 Waste Screening

All vehicles entering the MSW facility must report to the Landfill Operator. The Landfill Operator shall provide an initial screen of the waste and direct the customer to the appropriate cell for disposal or storage compound. Items that are acceptable for disposal and storage at the landfill are identified in Section 3.6.

Visual load checks shall be done at the weigh scale, and during dumping. The Landfill Operator shall randomly inspect vehicles and loads dumped at the working face to confirm that:

- Prohibited waste does not enter the landfill
- Acceptable hazardous waste is placed at the designated location(s) for environmental protection
- Waste requiring special handling is identified
- Special waste that have received prior approval correspond with the description and volumes provided by the generator

The Landfill Operator has the ability to inspect any load at any time. Random inspections shall be carried at a minimum of two loads a month as per the **Random Load Checking Program Policy** in **Appendix D**. The Landfill Operator should be suspicious of waste that:

- Carries hazardous markings
- Liquids
- Powder or dusts
- Bright or unusual colours
- Drums or commercial size containers
- Chemical odours

When a load is rejected and turned away, the Landfill Operator shall record:

- Vehicle type and license number
- Identifying company names
- The source of the waste
- Name of vehicle driver
- Inspection results and reasons for rejection

The landfill operator shall maintain a record of the waste coming into the landfill. Records of waste screening and visual inspections are to be kept as per the **Administrative Record Keeping Policy** in **Appendix D**. The following forms are included in **Appendix E**:

- Waste Screening Form
- Random Load Visual Inspection Report
- Hazardous Material Load Check Form

3.10 Unacceptable Wastes

Items that are NOT accepted at the facility are specified in the **Prohibited Waste Policy** in **Appendix D**. These include:

- Hazardous substances and waste (automotive fluids, fuel, antifreeze)
- Materials contaminated by hydrocarbons
- Contaminated Oilfield waste
- Untreated biomedical waste (as per CCME Guidelines for the Management of Biomedical Waste in Canada)
- Medical/infectious waste
- Radioactive waste
- Explosives

- Compressed gas/Air cylinders, unless the valves have been removed.
- Flammable items
- Herbicide/pesticide containers
- Water soluble solids (salt, borax, lye, caustics/acids)
- Septic tank or chemical toilet waste, with the exception of honey bags
- Mercury containing switches, relays and devices (thermostats, pilot light sensors, etc.)
- Bulk liquids as defined in the **Prohibited Waste Policy**
- Waste that is smoldering upon delivery (hot loads)

Wastes that are accepted but require special handling include:

- Asbestos as per the **Asbestos Handling Policy**
- Appliances containing CFC's (i.e. ozone depleting substances) as per the **Ozone Depleting Substances Management Policy**
- Automobile batteries as per the **Automobile Batteries Policy**
- Empty containers as per the **Empty Container Policy**
- Honey Bags

Policies for handling these materials are included in **Appendix D** of this manual.
When encountering unacceptable waste:

- Notify the Municipal Service Manager, who will notify ENR Environmental Protection at 867-873-7654
- Isolate and secure the waste to prevent contamination and disturbance
- Record time and date, conversations, and conditions of the incident using the **Waste Screening Form** in **Appendix E**.
- Cooperate with authorities

It is not suitable for the hauler to remove the unacceptable waste if:

- The original generator cannot be identified,
- The generator refuses to take responsibility for the unacceptable waste; and/or,
- Waste cannot be transported according to the Transportation of Dangerous Goods regulations.

The landfill will manage and dispose of the material in compliance with the applicable regulations. A clean-up and proper management of the unacceptable waste fee will be charged in these cases, if the generator is identified.

Industrial, commercial and institutional waste from outside of the local government boundaries shall not be accepted in the Landfill, unless there is prior authorization in writing by the Municipal Service Manager and an Inspector designated by the Minister under Section 65 (1) of the Waters Act, S.G.N.W.T. 2014, C.18.

3.11 Record-Keeping for Unacceptable Wastes

When unacceptable wastes are encountered at the Landfill follow the steps in Section 9.6 or 9.7, and use the **Waste Screening Form** in **Appendix E** to record the incident.

A copy of the incident report has to be submitted to the Town's office for record keeping.

3.12 Landfilling Operations

The landfill operator is responsible for the placement and compaction of waste and managing all storage compounds. Securing an adequate supply of cover material and covering waste on a monthly basis is considered integral to placement of waste.

3.12.1 Waste Disposal Cells

The objective is to construct a waste disposal cell that can handle the daily volume of waste and will require the minimum amount of cover soil (minimum amount of surface area). The waste cell should be constructed as follows:

- Cell geometry: Slanted cube
- Cell width: 10 m
- Cell depth: 3 m
- Cell construction: Pushing up or down slope at a 3:1 to 4:1 slope
- Refuse spreading: Maximum 0.6 m lift

The landfill shall be operated in accordance with the sequence shown in Figure A, which illustrates a typical approach for operating a landfill cell. Compaction of waste is essential to minimize space. Compaction may be achieved using a compactor.

Coverage of the waste will be required, particularly during summer months to reduce odour, wind-blown debris and animal scavenging. Intermediate cover will also be required over areas that will be exposed for long periods, to reduce odor, and/or the amount of wind-blown debris, and provide temporary driving surfaces.

It is anticipated that the majority of the waste directed to the landfill will originate from the Town's waste collection service. A survey of the waste surface and an airspace analysis should be conducted at the landfill once every three to five years. This information will be used to estimate the remaining lifespan of the landfill, as well as evaluate the effectiveness of compaction activities. The information will be essential for landfill expansion planning, as well as allowing for corrective action to be taken if compaction practices are found to be ineffective.

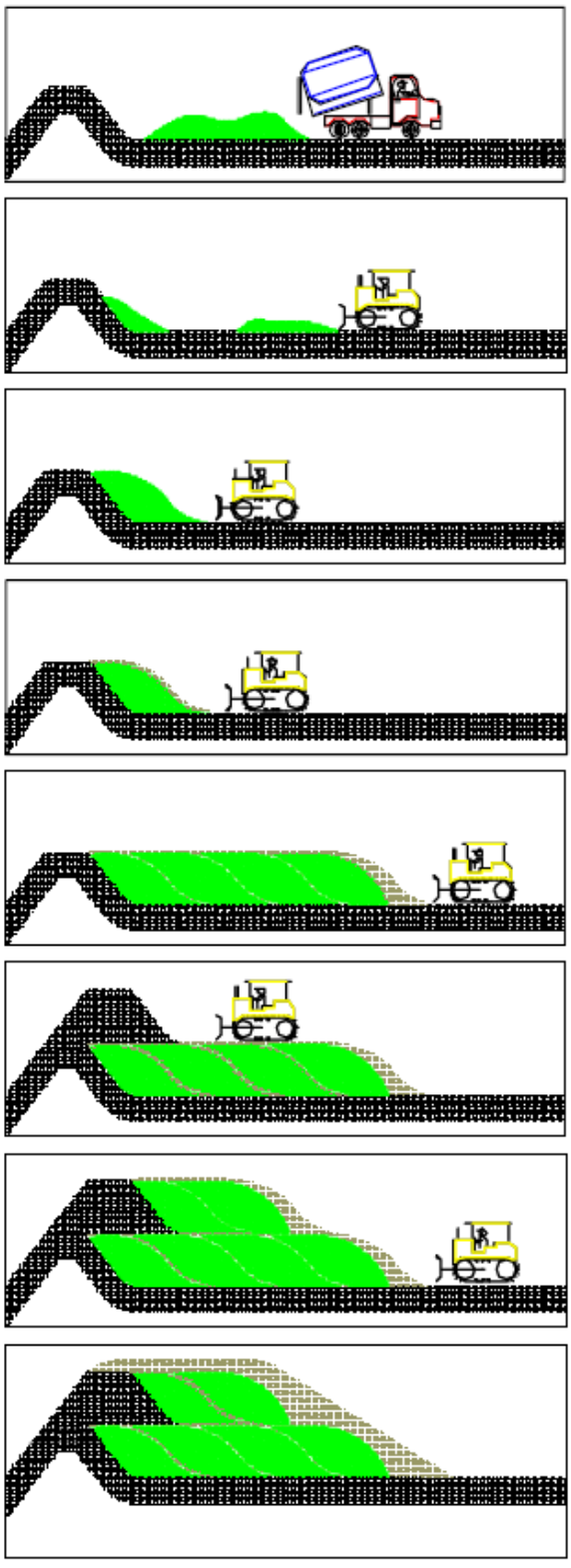

Figure A: Typical Landfill Operation

Taken from *Guidelines for the Planning, Design, Operation and Maintenance of Modified Landfill Sites in the NWT, Government of the Northwest Territories, Municipal and Community Affairs, 2003*

3.12.2 Compaction of Waste

Waste is should be placed and compacted on a daily basis. Presently the operator is utilizing a CAT 518 Model 3304 Skidder fitted with compaction wheels. The lift thickness of the waste is not to exceed 0.6 m before compaction. A minimum of five passes with the compaction equipment shall be done, to achieve a target compaction density of 400 kg/m^3.

3.12.3 Monthly Cover

Waste shall be covered on a monthly basis to mitigate fire risks and to control vectors. The monthly cover shall be 150 mm thick and shall be placed along the side slopes and working face of areas that has received waste.

Cover material shall be hauled and stockpiled at a convenient location(s), where it will not interfere with traffic or activities.

3.12.4 Intermediate Cover

The purpose of intermediate cover is to provide an effective cover barrier for areas that will not receive waste during extended periods of time, for example the top of a cell, to reduce odour, and/or the amount of wind-blown debris, and provide temporary driving surfaces. The intermediate cover shall be 300 to 350 mm thick.

3.12.5 Final Cover

As each landfill cell is filled to the final proposed design elevations, the outside slopes on the perimeter of the landfill shall be reclaimed. Final exterior slopes will be reclaimed by proceeding from the base towards the top. Once the final surface elevation has been achieved, reclamation of that top portion of the landfill shall commence.

Final cover should be progressively applied to areas that have reached the proposed final design elevation. In this way the landfill is closed and reclaimed throughout the active landfill life.

Final cover shall be designed by an Engineer as part of the landfill's closure plan.

3.13 Litter and Wildfire Control

The Landfill Operator is responsible for litter control within the facility, surrounding areas and along access roads. The following procedures are recommended to limit litter:

- Limit the size of operating areas so that waste can be compacted and covered at regular intervals
- Housekeeping around recycle and diversion areas
- Use portable fences to catch debris
- Encourage users to secure their load properly for transportation by instituting a surcharge for unsecure loads

The Landfill Operator shall regularly collect litter from the site, surrounding areas and along access roads. Loads of waste dumped outside of the facility should be taken to the MSW cell for proper disposal. Items identifying the perpetrators (i.e. letters, utility bills, etc.) shall be submitted to the Town office.

3.14 Surface Water Management

The landfill is located on a naturally draining terrain, causing the generated surface runoff from the site to be directed away towards the south side of the site. The site should be sloped when filling to drain and minimize any potential for ponding water. No engineered drainage system is currently in place.

Runoff from the solid waste site must be sampled monthly during periods of flow under the Surveillance Network Program. The results must be presented in the Annual Report and submitted to the GLWB by March 31 of the following year. Station 0036-4 monitors flow westward, and Station 0036-5 monitors near-shore water quality in a pond to the east.

The nearest fish-bearing water body to the facility is Boot Lake and it is located 860 m to the west of the site.

Figure 1 shows the location of the two SNP stations and Figure 3 shows the natural site drainage.

3.15 Record-Keeping

Landfill management must establish and maintain an operating record and prepare annual reports, as indicated in the Landfill Operating Policies – Administration Record Keeping. Forms are provided in **Appendix E**.

3.15.1 Daily Log

The Landfill Operator shall maintain a record of operating activities. The log shall be maintained in the landfill site office and submitted to the MSM at the end of the month. Records shall include, but not be limited to:

- Weather conditions (i.e. precipitation, wind speed and direction, temperature)
- List of operating staff
- List of equipment operating
- Description of activities (e.g. compaction, site clean-up, etc.)
- Visual inspections and environmental monitoring activities undertaken (presence and location of any ponding surface water, leachate accumulation, etc.)
- Issues encountered and response or corrective action taken
- Estimated volume reduction achieved by compaction

3.15.2 Scale Records

The Town shall keep records of the monthly and annual quantity of waste accepted at the MSW facility, and include this information in the annual report to the GLWB.

Scale tickets are maintained at the site and submitted to the MSM on a monthly basis and kept on file at the Town of Inuvik office. Local records generally include:

- Date of delivery
- Waste hauler and/or customer
- Weight of waste
- Type of waste

3.15.3 Monthly Reports

The status of the active areas at the landfill shall be recorded on a monthly basis for the purpose of providing a record of their rate of development. Monthly reports shall provide an overview of activities that have occurred during the month, including:

- Location of active landfilling area(s) and the activities related to area filling
- Quantities of wastes and types of wastes received (scale records)
- Maintenance, including litter control activities

- List of infractions and issues, including the measures undertaken to resolve them
- Monitoring Program sampling data (if any sampling was done that month)

Monthly reports can be a summary of the daily logs for the month, with information and observations added to complete the list above.

3.15.4 Annual Report

The Water License requires that an Annual Report be prepared and submitted to the GLWB no later than March 31 of the following year reported. A full list of reporting requirements and submission dates can be found in the GLWB Water License, Schedule 1, provided in **Appendix A.**

The following data is must be recorded and included in the Annual Report:

- Summary of monthly and annual quantities of MSW received and landfilled. This information is provided from monthly and annual scale record information.
- Summary of monthly and annual quantities of hazardous waste stored on-site and transported off-site. TDG records must be saved at the scale office.
- Summary of any construction and maintenance activities conducted under Parts F and G of the Water License.
- Summaries of data generated under the Surveillance Network Program and a copy of the original lab results.
- Record of any spills and unauthorized discharges.
- Summary of any closure and reclamation work completed during the year and outline of any work anticipated for the next year.
- Outline of any operator training and communication exercises carried out.

3.15.5 Corrective Action Report

In the event that conditions of the Water License are not met, corrective action is required. The corrective action shall be documented and maintained in the operating record. A corrective action report may include:

- A description of the problem
- A description of activities undertaken to correct the problem and results
- A description of the monitoring and effectiveness of the corrective action

3.15.6 Accident/Incident Reports

Records of any accident/incidents occurring on site shall be completed; including vehicle accidents, personal injury, spill of deleterious substances, and fires.

3.15.6.1 Spill of Deleterious Substances

In the event of a spill, the Landfill Operator shall immediately complete the **Spill Report Form** in **Appendix E** and submit report to the MSM. The MSM must then notify immediately the GLWB and ENR of the release, as per Part H of the License, and must provide the following details:

- Nature of the spill
- Cause of the spill
- Current actions to contain the spill
- Anticipated time frame to correct the problem

The MSM will report the spill to the Town of Inuvik SAO. The MSM will document the call and keep a record of the call in the operating record, as per the **Spill Contingency Policy** provided in **Appendix D**.

3.15.6.2 Unauthorized Discharges

Unauthorized waste found at the site shall be documented in the daily report, along with a description of corrective action taken. Unauthorized waste shall be logged in the **Waste Screening Form** provided in **Appendix E**.

Unauthorized discharges from the facility shall be documented in the daily, monthly, and annual report, along with a description of corrective action taken. Unauthorized liquid discharges shall be documented at the time of occurrence using the **Spill Report Form** (**Appendix E**).

3.15.7 Wildlife

The presence of bears or other animals at the site shall be reported to the MSM and to the Government of the Northwest Territories (GNWT), ENR local Inuvik office at 1-867-678-6650.

3.16 Inspection and Monitoring

Table 2 provides a list of items that the Landfill Operator must inspect and/or monitor, and the frequency of these inspections. An annual inspection is required as per Section 4. Inspections reports shall be included in the Annual Report submitted to GLWB.

Table 2: Frequency of Inspections and Monitoring

	Not Applicable	Never	Daily	Weekly	Other (specify)
Hydrocarbon contamination (e.g. oily sheen in surface water, visible stains and hydrocarbon odour near disposal)					Monthly
Signs of burrowing animals (e.g. droppings, holes around active or previous cells, animal sightings)			X		
Signs of large mammals/birds (e.g. droppings, animal tracks, animal sightings)			X		
Access road condition (e.g. potholes, erosion, rutting, ponding)			X		
Groundwater monitoring wells (e.g. condition of protective casing, protection from snow clearing activities, comparison of installation depth to current depth, ground subsidence surrounding protective casing)	X				
Ponded water throughout site			X		
Access control structure condition (e.g. damaged jersey barriers, damaged entrance gate)			X		
Dead plants or other changes to vegetation near active and historical landfill cells			X		
Signage (vandalism, general condition)			X		
Voltage of electric fence, if applicable (i.e. significant changes in voltage from intended design)	X				
Vegetation growth and litter around electric fence, if applicable (may cause a short in the current flow)	X				
Erosion on side slopes of active and closed cells and within surface water conveyance structures					Monthly
Sedimentation and vegetation of drainage structures (e.g. blockage of culverts with gravel, plant growth in ditches)					Monthly

3.17 Hazardous Waste Management

The GLWB water license requires that hazardous waste be segregated and stored in a manner to prevent deleterious substances from entering the water, until such time as they have been removed for proper disposal at an approved facility.

Hazardous wastes are items that can potentially cause groundwater and/or air pollution when disposed of in a landfill. Shipping containers are provided for that purpose and are located in the east side of the landfill development.

HHW is managed through the Town's Fire Department HHW collection event as discussed in Section 3.6.

Records of hazardous waste received at the landfill must be collected using the **Hazardous Material Load Check Form** in **Appendix E**. These records are to be kept at the site office and submitted to the MSM for inclusion in the Annual Report.

Table 3 shows the hazardous wastes accepted at the facility and their precedence.

Table 3: Hazardous Wastes Accepted

	Accepted from the Residential Sector	Accepted from the Industrial or Commercial Sector	Handling method
Asbestos		X	N/A
Lead-acid batteries	X	X	Shipped off site twice per year, not based on quantity.
Mercury-containing equipment	Do Not Accept	Do Not Accept	
Waste antifreeze/glycols	Do Not Accept	Do Not Accept	
Oily debris	Do Not Accept	Do Not Accept	
Ozone-depleting substances (ODS), halocarbons, or refrigerants	X	X	ODS removed by third party as required.
Paint(*)	X	X	Disposed of as per ENR guidelines. As needed.
Propane tanks	Accept only with valve removed	Accept only with valve removed	Buried in landfill
Residue fuel tanks/drums	X	X	Disposed of as per ENR guidelines. As needed.
Used oil	Do Not Accept	Do Not Accept	
Waste Fuel	Do Not Accept	Do Not Accept	
Vehicles	Accept only after all liquids, oils, batteries, and mercury switches have been removed	Accept only after all liquids, oils, batteries, and mercury switches have been removed	Buried in landfill

(*) Paint is disposed of as per ENR guidelines. Paint received is acrylic and oil based.

Table 4 shows measures taken to prevent spills and leaks of hazardous materials

Table 4: Measures Taken to Prevent Spills

	Primary Containment	Secondary Containment	Other Method to Prevent Spills and Leaks	Security Measures
Lead-acid batteries	Metal Box	None		Designated area within the fenced and gated landfill boundary
Ozone-depleting substances (ODS), halocarbons, or refrigerants	None	None		Designated area within the fenced and gated landfill boundary
Paint	Metal Box	None		Designated area, store until paint hardened then bury in landfill
Propane tanks	None	None		Buried in landfill
Residue fuel tanks/drums	None	None		Designated area within the fenced and gated landfill boundary

The exact coordinates of each asbestos burial location shall be recorded by the generator using a GPS system. The records shall be kept in the site office and reported to the MSM on a monthly basis, as per **Asbestos Handling Policy** in **Appendix D**.

Fluorescent bulbs shall be stored in a designated area under dry conditions and in a manner to prevent breakage, for such purpose a shipping container can be used. Fluorescent bulbs are considered HHW and should be collected through the Town's fire department HHW collection event.

Fuel tanks and drums containing fuel residues must be handled as per ENR's Drum Disposal Protocol for Municipal Landfills.

Inspections of hazardous materials and hazardous material storage areas shall be done on a monthly basis using the **Monthly Site Operations Inspection Form**, in **Appendix E**.

Record of all operational activities shall be generated by the Landfill Operator and kept by the MSM at the Town office as per **Administrative Record Keeping Policy** in **Appendix D**.

3.18 Tipping Fees

The Town shall establish the tipping fees as per **Tipping Fee Policy** in **Appendix D**.

Currently the facility does not charge residents for their household garbage. The Solid Waste Disposal Facility applies tipping fees to the industrial, commercial and institutional users.

The tipping fees can be found in the Town of Inuvik's website.

The following hazardous materials have a tipping fee charge:

- Asbestos
- Paints

- Propane tanks
- Fuel tanks and drums containing fuel residues

3.19 Closure and Post-Closure Plan

No interim or final closure and reclamation plan has been developed for the Solid Waste Facility.

4. Annual Inspection

The MSM, accompanied by a senior representative of Contract Operator and the Landfill Operator, shall conduct an annual inspection of the Solid Waste Facility; the Town may opt to have this inspection carried out by a professional engineer who is experienced in landfill management and operations. The results of the inspection shall be documented and included in the Annual Report. The Town shall remedy any parts of the infrastructure or operation which are not in accordance with the O&M Plan and/or the requirements of the Water Licence.

4.1 Site Inspection

A visual examination of the site shall be carried out to verify:

- Condition of all components (including the landfill, storage areas, etc.)
- Remaining capacity in relation to life expectancy of the facility.
- Condition of infrastructure and equipment (including gates and fences, signs, roads, buildings, containers, heavy equipment)
- General site management and operation, including litter control, condition of the cell and contents, presence of safety hazards, etc.

4.2 Review of Records

A review of the daily, monthly and annual reports shall also be carried out to evaluate:

- Issues related to operations, spills, safety, fires, infractions, etc.
- Effectiveness of the waste diversion program
- Effectiveness of the hazardous waste collection program
- Public complaints
- Quality of record keeping practices

5. Safety Plan

5.1 General

The MSW facility shall be operated according to the Town of **Inuvik Safety Plan.** Site safety is coordinated through the Landfill Operator and shall be in compliance with the Town's Safety Plan.

All operations shall be conducted with safety as a priority at all times. All employees shall:

- Receive the appropriate safety training
- Wear the appropriate personal safety equipment
- Not endanger themselves or others at any time
- Report unsafe practices
- Notify other employees or site users when they are acting in an unsafe manner
- Receive and maintain vaccination for Tetanus, Diphtheria (Td) and Hepatitis (A and B)

All **accidents, injuries, or near misses** shall be reported to the Landfill Operator, the Municipal Services Manager and the Safety Committee at the Town, and the following steps shall be taken:

- Investigate the incident immediately
- Find out the cause
- Make a complete incident report
- Take immediate measures to correct the cause and prevent it from reoccurring
- Have a safety meeting with employees as soon as possible after the incident

5.2 Traffic Accidents

Traffic accidents occurring at the site shall be reported to the RCMP and investigated by the Landfill Operator who shall also complete an **Accident Report Form** (provided in **Appendix E**).

5.3 Medical Emergencies

All injuries, even minor injuries, should be considered important and should be reported as a safety incident to the MSM or Inuvik Safety Committee.

First Aid should be applied in a manner that is appropriate to the nature of the injury. If the injury requires medical assistance, the individual should be taken to a medical emergency centre or an ambulance service contacted.

A medical doctor should be consulted for all injuries that may result in infections as a result of working with waste materials. This includes injuries such as cuts and scrapes, skin punctures with sharp items, and fire or chemical burns.

If the person injured on-site is a customer or visitor, the Landfill Operator and employees shall provide any assistance necessary and administer appropriate First Aid.

5.4 Personal Decontamination Procedures

In instances where workers accidentally come in contact with unknown substances, the following procedures shall be followed.

Skin Contact: Wash with water for approximately 15 minutes or with water available at a wash station. See a physician if any sign of irritation occurs.

Eye Contact: Flush eye(s) with a gentle stream of water for 15 minutes or with water available at a wash station (use eye wash station with distilled water). See physician, without exception.

Ingestion: Contact emergency services immediately and provide them with as much information as possible about the product that was ingested. Do not induce vomiting unless instructed to do so.

Inhalation: Remove person to fresh air. If discomfort persists, take victim to physician. Provide physician with as much information on the inhaled material as possible.

6. Fires

All fires shall be considered serious and immediately reported to the MSM. An incident report must be completed for all fire occurrences, with a copy kept on file and one sent to the Town Safety Committee.

The Landfill Operator may take charge of extinguishing fires that are small and contained. However, fires that are burning out of control or giving off toxic fumes shall be managed by the Fire Department.

6.1 Fire Prevention

The landfill shall be operated in a manner that minimizes the potential for fires. Fire prevention techniques include:

- Prohibit staff and customers from lighting fires at the facility
- Prohibiting smoking at the landfill facility outside of designated smoking area(s), no smoking allow in facility past the scale office by staff or customers/visitors
- Thoroughly compact all waste and apply soil cover regularly
- Maintain a comprehensive load checking program to prevent the dumping of hot/burning debris, explosives or highly combustible waste
- Provide an area apart from the general tipping area for dumping of ash barrels
- Maintain a reserve of cover material near active working areas for immediate action in case of fire
- Conduct a site inspection at the end of the day looking for evidence of smoke
- Train employees on early fire hazard recognition

6.2 General Fire-Fighting Procedures

Depending on the size of the fire:

- Isolate burning material for other waste materials
- Cover the burning material with available soils and compact if safe to do so
- Dig out the burning debris and let it burn in a controlled environment, away from other combustible materials
- Apply water and/or snow
- Monitor fire until completely extinguished

6.3 General Fire Response Procedure

- Secure the area
- In cases of small fires, direct customers to safe areas. In cases of large fires, follow **Emergency Response** procedures (Section 7) and quick reference guides for **Fire at the Landfill** (Section 9.1) and **Fire in Recycle Area** (Section 9.2)
- Notify the MSM
- Call the Inuvik Fire Department at 867-777-2222
- Do not fight a fire alone, work with other staff members, and ONLY if safe to do so
- Do not place yourself or others in danger while fighting a fire
- Heavy equipment shall only be used to place material to smother a fire, and only when safe to do so

7. Emergency Response

Emergency response may be required in cases of:

- Fire or gaseous release
- Spills
- Accidental Injury or Medical

In all emergencies the Landfill Operator shall have complete authority over the site. The Landfill Operator's responsibilities in an emergency are:

- Declare the emergency
- Evacuate non-essential personnel or isolate the area – as warranted by the severity of the situation
- Notify the appropriate response agency
- Notify the MSM and the Town
- Establish control and manage the situation prior to arrival of the response agency
- Liaise with the emergency response representatives upon their arrival
- Declare the end of the emergency
- Complete a report documenting the nature of the emergencies and actions undertaken

The MSM will contact the appropriate agency to report incidents related to environmental or health and safety associated with the emergency.

Municipal Services / Public Works of the Town of Inuvik will review the emergency plan annually and following an emergency incident ensure that:

- Emergency response procedures for the landfill are effective and updated as necessary
- Appropriate individuals are appointed to manage emergency situations
- Regular fire prevention meetings are conducted with all landfill employees and the Fire Department
- Regular safety and emergency meetings are held with landfill employees

7.1 Contact Information

Additional contact information is also provided in **Appendix C**.

- Town of Inuvik Public Works: 867-777-8600
- GNWT Environment Protection – Inuvik: 867-678-6695
- GNWT Environment and Natural Resources Regional Office - Inuvik: 867-678-6698
- RCMP: 867-777-1111
- Inuvik Fire Department: 867-777-2222
- Advanced Medical Solutions (Ambulance): 867-777-4444
- Inuvik Regional Hospital: (general) 867-777-8000 or (emergency) 867-777-8160
- Hazardous Waste Spill 24 Hour Hotline: 867-920-8130

8. Climate Change Preparation and Adaptation

Global warming and climate change could present challenges to the Northwest Territories Communities, with rising temperatures, the impacts to the natural environment are becoming more apparent. Some of the expected changes include:

- Changes in ice conditions
- Thawing and degradation of Permafrost
- Changes in precipitation patterns
- Migration of non-native animals and vegetation species
- Shorter winters
- Longer and drier summers, which could extend the wildfire season

From a landfill operation standpoint the most significant contributor to Greenhouse Gas (GHG) is the generation of landfill gas. Methane and other volatile organic compounds (VOCs) are generated by the decomposition of organic waste. A secondary contributor of GHG is from landfill operating equipment and heating of landfill structures. To mitigate the effects of landfill gas the landfill could calculate the potential landfill gas generation on an annual basis using industry accepted calculation models. Once gas generation at the site reaches a level that would warrant landfill gas recovery methods should be investigated to mitigate GHG impacts.

9. Reference Guide

The following tables provide a quick reference guide describing how to prevent and respond to several potential contingency situations that may arise.

9.1 Fire at the Landfill

Prevention

- Staff training and awareness
- Waste acceptance procedures and policies
- Diversion of hot loads, combustible and/or explosive material from working area
- Application of cover soils to minimize size of the active working area

Response Plan

Action	Time Frame	Who	Resources
Evacuate and secure the area	Immediately	Landfill Operator	Site staff
Call: • Fire Department • GLWB • MSM • Town Safety Committee	Immediately	Landfill Operator	Site staff
Isolate the burning wastes	Immediately	Landfill Operator	Landfill Equipment
Determine the nature and extent of the fire	Immediately	Landfill Operator	Site staff
Excavate, remove, and soak the burning waste	As soon as it is determined safe to do so	Landfill Operator	Site staff Fire Department Landfill equipment Water truck Water pumps
Cover the burning area	Immediately after the source of burning waste has been excavated and removed, and as soon as it is safe to do so	Landfill Operator	Site staff Fire Department Landfill equipment
Appoint staff for fire guard	After fire is extinguished	Landfill Operator	Site staff Fire Department
Confirm the fire is extinguished	Immediately	Landfill Operator	Fire Department
Review the cause of fire and implement mitigation measures	Within 1 month	Landfill Operator MSM Town Safety Committee	Site Staff Fire Department

9.2 Fire in Recycle Area

Prevention

- Site security
- Separation of materials according to the Fire Code

Response Plan

Action	Time Frame	Who	Resources
Evacuate and secure the area	Immediately	Landfill Operator	Site staff
Call: • Fire Department • MSM • Town Safety Committee	Immediately	Landfill Operator MSM	Site staff
Determine the nature of the burning material and potential for emission of toxic fumes	Immediately	Landfill Operator	Fire Department GLWB
Isolate the burning material	Immediately, if safe to do so	Landfill Operator	Fire Department
Determine the nature and extent of the fire	Immediately	Landfill Operator	Site staff
Extinguish the fire as appropriate; according to the nature of the material	As soon as it is safe to do so	Landfill Operator	Site staff Fire Department Landfill equipment Water truck Water pumps
Confirm the fire is extinguished	Immediately	Landfill Operator	Fire Department
Review cause of fire and prepare appropriate mitigation measures	Within 1 month	Landfill Operator MSM Town Safety Committee	Site staff Fire Department

9.3 Minor Medical Injuries

Prevention

- Safety plan and procedures
- Employee safety training and awareness
- First Aid training

Response Plan

Action	Time Frame	Who	Resources
Apply appropriate First Aid	Immediately	First Aider	First Aid Kit
Recommend that the injured person consult a physician	Immediately	First Aider	
Take the injured person to a medical emergency centre or contact an ambulance service if deemed appropriate	Immediately	First Aider	
Record injury in the daily report	By end of the work day	Landfill Operator	Landfill Operator
Review cause of the injury and prepare appropriate mitigation measures	Within 1 month	Landfill Operator MSM Town Safety Committee	Landfill Operator Occupational Health and Safety

9.4 Serious Medical Injury

Prevention

- Safety plan and procedures
- Employee safety training and awareness
- First Aid training

Response Plan

Action	Time Frame	Who?	Resources
Assess site conditions for personal safety and safety of others, and take appropriate actions to secure unsafe areas	Immediately	Landfill Operator First Aiders	Landfill Operator
Attend to the injured person and apply First Aid	Immediately when safe to do so	First Aider	
Contact: • Ambulance • MSM • Town Safety Committee	Immediately	First Aider Landfill Operator	
Stay with the injured person until medical assistance arrives	Duration of medical emergency	First Aider	
Record injury in the daily report	By the end of the work day	Landfill Operator or Designated Alternate	Landfill Operator
Conduct an investigation to determine the cause of injury and prepare appropriate mitigation measures	Investigate immediately following the incident. Complete mitigation measures within 1 month of the incident	Landfill Operator MSM Town Safety Committee	Site Personnel Occupational Health and Safety

9.5 Vehicle or Equipment Accidents

All vehicle accidents shall be reported and an investigation as to the cause should be carried out. Following the investigation, appropriate mitigation measure should be implemented to avoid future accidents.

Prevention

- Safety plan and procedures
- Employee safety training and awareness
- Traffic control signs
- Traffic control during heavy traffic situations
- Scale traffic controls

Response Plan

Action	Time Frame	Who	Resources
Report the accident to the Landfill Operator	Immediately	All employees	
If damage is minor, have the vehicle driver report the accident to the RCMP	Immediately	Landfill Operator	
If the damage is significant, call the RCMP	Immediately	Landfill Operator	
If an injury is involved, call the Town of Inuvik Public Works at 867-777-8600, and implement medical response actions	Immediately	Landfill Operator	
Secure the area for a follow-up investigation	Immediately	Landfill Operator	
Record the injury in the daily report	By the end of the work day	Landfill Operator or Designated Alternate	Landfill Operator
Conduct an investigation into the cause of the accident and prepare appropriate mitigation measures	Within 1 month of the accident	Landfill Operator MSM RCMP Town Safety Committee	Occupational Health and Safety

9.6 Prohibited Wastes Delivered to the Landfill

Prevention

- Access control
- Waste acceptance policies and procedures
- Employee training and awareness

Response Plan

Action	Time Frame	Who	Resources
Deny entry of the load	Immediately	Landfill Operator	Operation and Maintenance Plan Waste Acceptance Procedures GLWB
Determine if load is safe for transport on local roads	Within 1 hour	Landfill Operator/MSM	Transport Canada Transport of Dangerous Goods Regulations
Inform the waste generator of the infraction	Within 1 hour	MSM	
Document the nature of incident and actions taken	Within 1 hour	Landfill Operator	Daily Operating Log Hazardous Material Load Check Form
Review waste acceptance procedures and implement necessary mitigation measures	Within 1 month	Landfill Operator MSM	Town Safety Committee

9.7 Prohibited Waste Discovered at the Landfill

Prevention

- Access control.
- Waste acceptance policies and procedures.
- Employee training and awareness.

Response Plan

Action	Time Frame	Who	Resources
Isolate waste and cease operations in the area of the waste	Immediately	Landfill Operator	GLWB Environmental Consultant
Construct containment around perimeter of the waste if necessary	Immediately	Landfill Operator	Landfill equipment 50 Gal Spill Kit
Determine source of waste, and if possible the waste hauler and generator	Within 1 week	Landfill Operator	Scale Records Staff observations
If identified, contact the hauler and waste generator to review options	Within 1 to 2 weeks	Landfill Operator	
Document nature of incident and actions taken	Within 1 hour	Landfill Operator	Daily Operating Log Hazardous Material Load Check Form
Inform Gwich'in Land Water Board (GLWB)	When results have been confirmed	MSM	
Review waste acceptance procedures and practices, and implement mitigation measures	Within 1 month	Landfill Operator MSM	Town Safety Committee

9.8 Hot Loads (Loads with Smoldering Materials) Delivered to the Landfill

Prevention

- Access control.
- Waste acceptance policies and procedures.
- Employee training and awareness.

Response Plan

Action	Time Frame	Who	Resources
Direct the load to the designated area away from the working area	Immediately	Landfill Operator	
Contain burning material within soil berms	Immediately	Operating staff	
Apply appropriate measures to extinguish the fire: wet, smother with soil, or allow to burn out	Within 1 hour	Landfill Operator	Water truck Landfill Equipment
Monitor fire	For duration of fire	Landfill Operator	
Remove extinguished material and dispose at working area	Within 2 to 3 days after being extinguished	Landfill Operator	Landfill Equipment

9.9 Contamination of Surface Water

Prevention

- Intrinsically prevented by landfill design. All water outside cell should runoff off site.
- Water accumulated on site must be tested to confirm that it is uncontaminated prior to discharging off site.
- Berm maintenance and berm leak inspection.
- Control of surface water releases.
- Operational controls in active working areas.
- Employee training and awareness.

Response Plan

Action	Time Frame	Who?	Resources
Investigate the cause of surface water contamination	Immediately	Landfill Operator	Environmental Consultant ENR Inspector GLWB
Sample surface water to verify and validate	Within 2 days Lab results within 9 days	Landfill Operator	Environmental Consultant
Identify and implement appropriate corrective actions	Within 1 month	MSM	Environmental Consultant ENR Inspector GLWB
Review surface water management practices and update and revise if necessary	Within 2 months	Landfill Operator MSM	Environmental Consultant ENR Inspector GLWB

9.10 Wind-Blown Litter

Prevention

- Require the customer or operator to transport landfill acceptable materials properly covered and secured.
- Maintain as small a working area as practical.
- Maintain portable litter catchment fences around active areas.
- Maintain perimeter fencing free of debris, papers and wind-blown substances.

Response Plan

Action	Time Frame	Who	Resources
Review working area and litter catchment fence placement	Immediately	Landfill Operator	Environmental Consultant
Implement off-site litter pick-up	Within 1 week	Landfill Operator	Temporary staff
Implement on-site litter pick-up	Within 1 month	Landfill Operator	Temporary staff
Review litter control program and revise if necessary	Within 2 months	Landfill Operator MSM	Environmental Consultant

9.11 Hazardous Material Spill Response

Prevention

- Waste acceptance, screening and handling procedures
- Employee training and awareness

Storage

For incidental HHW and batteries that may be accepted and stored on site, this material must be stored in a metal shipping container that is capable of providing secondary containment. The MSM will develop hazardous spill contingency plans associated with removal of hazardous material in conjunction with Northwest Territories officials when transportation opportunities arise.

Scope

The most probable source of a hazardous material spill is petroleum products from vehicles or equipment at the site; which would be a spill limited to the size of the vehicle or equipment tank.

Equipment

- 50 Gallon Capacity Universal Sorbent Spill Kit includes:
  - 10 – 3" x 48" socks
  - 4 – 3" x 10' socks
  - 50 – 15" x 17" pads
  - 4 – pillows
  - 50 – wipers
  - 5 – disposal bags and ties
  - 5 – tamperproof seals
  - 2 – pair nitrile gloves
  - 1 – emergency response guidebook

Response Plan

Action	Time Frame	Who	Resources
Contain and clean spill	Immediately	Landfill Operator	50 Gallon Spill Kit
Contact Fire Department for support & additional response	Immediately	Landfill Operator	
Call Hazardous Spill Hotline	Immediately	Landfill Operator	Environmental Consultant
Review operating procedures and acceptance policies and identify appropriate mitigation measures	Within 1 week	Landfill Operator MSM	Environmental Consultant Town Safety Committee

10. Reference Information

The preparation of this Operation and Maintenance Manual is based upon the following information sources:

1. GLWB, 2017. “GLWB Water Licence G17L3-001” for the Town of Inuvik, NT (effective July 1, 2017 and expiring on June 30, 2027). Gwich’in Land and Water Board, May 2017.
2. MVLB, 2017. “MVLWB Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility”, Mackenzie Valley Land and Water Board, June 2017.
3. Earth Tech, 2006. “Town of Inuvik Operation and Maintenance Manual for Solid Waste Disposal Facilities”. Earth Tech 2006, re-issued 2012.
4. ENR, 2017. “Guideline for Hazardous Waste Management”. Government of the Northwest Territories, Department of Environment and Natural Resources, October 2017.
5. ENR, 2004. “Guideline for the Management of Waste Asbestos”. Government of the Northwest Territories, Department of Environment and Natural Resources, April 2004.
6. ENR, 1998. “Guideline for the Management of Waste Batteries”. Government of the Northwest Territories, Department of Environment and Natural Resources, September 1998.
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Appendix A

A1. Water Licence

A2. MVLMB – Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility

Appendix A1. Water Licence

GWICH'IN LAND AND WATER BOARD
P.O. Box 2018, Inuvik, NT X0E 0T0
867-777-4954
867-777-2304
giwb.com

WATER LICENCE

Pursuant to the *Mackenzie Valley Resource Management Act* and Regulations, and the *Waters Act*, the Gwich'in Land and Water Board, hereinafter referred to as the Board, hereby grants to:

The Town of Inuvik
(Licensee)

of **P.O. Box 1160, #2 Firth Street, Inuvik, NT XOE 0T0**
(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the *Waters Act* and Regulations made thereunder and subject to and in accordance with the conditions specified in this Licence.

Licence Number:	G17L3-001
Licence Type:	A
Water Management Area:	Northwest Territories 03
Location:	Inuvik, Northwest Territories
Purpose:	Water Use & Waste Disposal
Description:	Municipal Undertakings
Quantity of water not to be exceeded:	1, 000, 000 cubic metres per year
Effective Date of Licence:	July 1, 2017
Expiry Date of Licence:	June 30, 2027

This Licence issued and recorded at Inuvik includes and is subject to the annexed conditions.

Signed the 23rd Day of May, 2017 on behalf of the Gwich'in Land and Water Board

Witness – Leonard DeBastien

Acting Chair – Elizabeth Wright

APPROVED BY:

Minister of Environment and Natural Resources

Type A Water Licence G17L3-001
Town of Inuvik – Municipal

Table of Contents

Schedules

Annex A: Surveillance Network Program

Annex B: Concordance Table of Items Requiring Submission

PART A: SCOPE AND DEFINITIONS

1. Scope

a) This Licence entitles the Licensee to use water and dispose of Waste for municipal undertakings, at Inuvik, Northwest Territories.

b) This Licence is renewed subject to the conditions contained herein with respect to the taking of water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Commissioner in Executive Council under the *Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.

c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

d) This Licence is issued subject to the conditions contained herein with respect to the use of Waters and deposit of Waste as prescribed in Section 10 and 11 of the *Act.*

2. Definitions

Act – the *Waters Act*, S.G.N.W.T. 2014, C.18.

Analyst – an Analyst designated by the Minister under Section 65 (1) of the *Act.*

Average Concentration – the discrete average of up to four consecutive analytical results submitted in any single calendar year to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

Bagged Toilet Wastes Disposal Facilities – the area within the Solid Waste Disposal Facility and associated structures designed to contain bagged toilet Wastes (honey bags).

Batch Decant – means the intentional release of effluent from the Sewage Disposal Facilities, at a release rate exceeding that of the normal discharge, for the purpose of lowering the liquid level within the sewage lagoon.

Board – the Gwich'in Land and Water Board established under Part 3 of the *Mackenzie Valley Resource Management Act*.

Closure – the permanent dismantlement of one or more components of the Project with the intent of making the components incapable of its intended use. This includes the removal of associated equipment and structures used in the construction or maintenance of the Project.

Commercial Wastewater – water and associated waste generated by the operation of a commercial enterprise, but does not include toilet water or greywater.

Construction – any activities undertaken to construct or build any components of, or associated with, the undertaking.

Discharge – the direct or indirect release of any Water or Waste to the Receiving Environment.

Freeboard – the vertical distance between water line and the lowest elevation of the effective water containment crest on a dam or dyke's upstream slope.

Greywater – all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet Wastes.

Hazardous Wastes – those Wastes with properties such as flammability, corrosiveness, or inherent toxicity and can pose a variety of risks, from skin damage on contact, to the contamination of ground water, surface water, or soil as a result of leaching into the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Inspector – an Inspector designated by the Minister under Section 65 (1) of the *Act*.

Licensee – the holder of this Licence.

Minister – a duly appointed member of the Executive Council who is responsible for the Act.

Modification – an alteration to a physical work that introduces a new structure or replaces or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion.

Professional Engineer – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientist, and whose principal field of specialization is appropriate to address the components of the undertaking at hand.

Pumpout Sewage – all toilet Wastes and/or Greywater collected by a vacuum truck for disposal at an approved facility.

Reclamation – activities which facilitate the return of areas affected by the Waste Disposal Facilities to a viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and surrounding environment.

Regulations – Regulations promulgated pursuant to Section 63 of the *Act*.

Sewage – all Toilet Wastes and Greywater.

Sewage Disposal Facilities – comprises the area and engineered structures designed to contain and treat Sewage, as approved by the Board.

Sewage Sludge – the residual non-stabilized semi-solid material separated from Sewage as a result of a natural or other process at the Sewage Disposal Facilities.

Solid Waste Disposal Facilities comprises the area and associated structures designed to contain solid Wastes as approved by the Board.

Spill – to allow or accidentally release Waste from containment vessels or structures into the receiving environment.

Spill Contingency Plan – a document, developed in accordance with *Aboriginal Affairs and Northern Development Canada's Guidelines for Spill Contingency Planning*, that describes the set of procedures to be implemented to minimize the effects of a Spill.

Surveillance Network Program (SNP) – a monitoring program established to define environmental sampling and analysis requirements, as detailed in Annex A of this Licence, to collect water quality data, and to assess discharge quality, compliance with Licence terms and conditions, and the potential for impact on the environment.

Toilet Wastes – all human excreta and associated products, but does not include Greywater.

Unauthorized Discharge – a release or discharge of any Water or Waste not authorized under this Licence.

Waste – any substance defined as Waste as defined by Section 1 of the *Act.*

Waste Disposal Facilities – all facilities designated for the disposal of Waste, and includes the Sewage Disposal Facilities and the Solid Waste Disposal Facilities.

Watercourse – a natural watercourse, body of water, or water supply, whether usually containing water or not, and includes groundwater, springs, swamps, and gulches, as defined in the Waters Regulations.

Water – any Water as defined by Section 1 of the *Act.*

Water Supply Facilities – all facilities designed to collect, treat and supply water for municipal purposes.

Water Use – a use of Water as defined by section 1 of the Act.

PART B: GENERAL CONDITIONS

1. The Licensee shall operate in accordance with the plans and programs approved pursuant to the conditions of this Licence and with any revisions to the plans and programs as may be made pursuant to the conditions of this Licence and as approved by the Board. If any plan is not approved by the Board, the Licensee shall revise the plan as directed by the Board and resubmit it to the Board for approval.

2. The Licensee shall comply with the **Surveillance Network Program**, which is annexed to and forms part of this Licence, and any changes to the Surveillance Network Program as may be made by the Board.

3. The Licensee shall comply with the Schedules, which are annexed to, and form part of this Licence, and any changes to the Schedules as may be made by the Board.

4. The Schedules, Surveillance Network Program and any compliance dates specified in the Licence may be changed at the discretion of the Board. If any date for the submission of a plan, report, or program falls on a weekend or holiday, the plan, report, or program shall be submitted on the following business day.

5. The Licensee shall submit to the Board and Inspector an **Annual Water Licence Report** no later than March 31 of the year following the year reported (January – December 31), which shall be in accordance with Schedule 1.

6. The Licensee shall post signs in the appropriate areas to inform the public of the Water Supply Facilities, Waste Disposal Facilities, and Surveillance Network Program stations. All postings shall be located and maintained to the satisfaction of an Inspector.

7. Meters, devices or other such methods used for measuring the volumes of water obtained and Waste disposed and discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

8. The Licensee shall ensure a copy of this Licence is maintained at the municipal office at all times, and that all employees conducting work related to any facilities within the scope of this Licence are made aware of the appropriate sections of the Licence.

9. The Licensee shall conduct further studies and submit the findings to the Board, if requested by the Board to do so at any time during the term of this licence.

10. All information submitted to the Board for this Licence shall:
    a) Be submitted in a form acceptable to the Board;
    b) Be in accordance with the Mackenzie Valley Land and Water Board's *Document Submission Standards*; and
    c) Include a section within each submission which identifies where the pertinent requirements of the Licence are addressed.

11. All references to policies, guidelines, codes of practice, statutes, Regulations or other authorities shall be read as a reference to the most recent versions, unless otherwise denoted.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water from the Mackenzie River using the Water Supply Facilities, or sources otherwise approved by the Board.

2. The annual quantity of water taken for all purposes shall not exceed 1,000,000 cubic metres (m^3).

3. The Licensee shall equip and maintain the Water intake with a screen designed to prevent impingement and/or entrainment of fish.

4. The Water Supply Facilities shall be maintained and operated to the satisfaction of an Inspector.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall take every reasonable precaution to ensure that unauthorized Waste(s) associated with this undertaking do not enter any Waters.

2. The Licensee shall immediately notify the Board and Inspector of the exceedance of any effluent quality criterion.

3. Sewage and solid Waste from industrial, commercial and institutional operators working outside of the local government boundaries of Inuvik shall not be accepted at the Waste Disposal Facilities, unless otherwise authorized in writing by an Inspector.

Sewage

4. The Licensee shall direct all piped and Pumpout Sewage to the Sewage Disposal Facilities or as otherwise approved by the Board.

5. All effluent discharged from the Sewage Disposal Facilities at Surveillance Network Program Station Number 0036-3 shall meet the following effluent quality criteria:

Parameter	Maximum Average Concentration
Suspended Solids	70 mg/L
CBOD	135mg/L
Faecal Coliforms	1 x 10^6 CFU/100mL
Oil and Grease	5 mg/L
pH	6-9

6. A Freeboard limit of 1.0 metre, or as recommended by a Professional Engineer and as approved by the Board, shall be maintained al all dykes and earthfill structures associated with the Sewage Disposal Facilities.

7. The Licensee shall maintain and operate the Sewage Disposal Facilities in such a manner as to prevent structural failure, and to the satisfaction of an Inspector.

8. The dams, dykes and other engineered earth structures designed to contain waste within the Sewage Disposal Facilities shall be inspected annually by a professional engineer to determine the stability of the structures.

9. The Licensee shall advise an Inspector at least ten (10) days prior to initiating a Batch Decant of the sewage lagoon.

10. The Licensee shall notify the Board and Inspector, in writing, at least thirty (30) days prior to initiating the removal and burial of Sludge and sediments originating from the Sewage Disposal Facility.

11. All bagged toilet Wastes (honey bags) shall be disposed of at the Bagged Toilet Waste Disposal Facilities to the satisfaction of an Inspector.

Solid Waste

12. The Licensee shall dispose of all solid Wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.

13. The Licensee shall maintain and operate the Solid Waste Disposal Facilities to the satisfaction of an Inspector.

14. The Licensee shall contain all Hazardous materials in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.

15. The Licensee shall, within 24 months of the issuance of this Licence, provide to the Board for approval a **Solid Waste Disposal Fencing Plan**. The Plan shall describe how the Licensee will install and maintain fencing at the Solid Waste Disposal Facility that is capable of capturing windswept Waste, deterring wildlife, and preventing unauthorized persons from entering the site.

PART E: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall operate and maintain the Solid Waste Disposal Facilities in accordance with the Operation and Maintenance Plan submitted on February 6, 2017, until such a time as a new plan is approved by the Board.

2. The Licensee shall operate and maintain the Sewage Disposal Facilities in accordance with the Operation and Maintenance Plan submitted on February 6, 2017, until such a time as a new plan is approved by the Board.

3. Within six months following the issuance of this Licence, the Licensee shall submit to the Board for approval, an Operations and Maintenance Plan for the Solid Waste Disposal Facilities. This plan shall include all information outlined in Schedule 2, part 1.

4. Within twelve months following the issuance of this Licence, the Licensee shall submit to the Board for approval, an updated Operations and Maintenance Plan for the Water Supply Facilities. This plan shall include all information outlined in Schedule 2, part 2.

5. Within twenty-four months following the issuance of this Licence, the Licensee shall submit to the Board for approval, an updated Operations and Maintenance Plan for the Sewage Disposal Facilities. This plan shall include all information outlined in Schedule 2, part 3.

6. The Licensee shall review the Operations and Maintenance Plans annually, and modify the plans as necessary to reflect changes in design, operation and maintenance, or as otherwise required by the Board or Inspector. The proposed updates shall be submitted to the Board for approval, and shall include a summary of revisions.

PART F: CONDITIONS APPLYING TO CONSTRUCTION

1. A minimum of sixty (60) days prior to the construction of any dams, dykes or structures intended to contain, treat, withhold, divert or retain Water or Wastes, other than as contemplated in the Contingency Plan, the Licensee shall submit to the Board for approval a construction plan and a design report signed and stamped by a Professional Engineer, which notes issued for construction or similar phrase.

2. Construction of designed structures as described in Part F, Item 1, shall be carried out in accordance with the recommendations of the Professional Engineer.

3. A minimum of ten (10) days prior to the commencement of construction of the structures referred to in Part F, Item 1, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the name and contact information for the construction superintendent.

4. Within ninety (90) days of the completion of the construction of the structures referred to in Part F, item 1, the Licensee shall submit to the Board an As-built Report which shall include as-built drawings stamped and signed by a Professional Engineer and descriptions and rationale for changes made that deviate from the final design drawings referred to in Part F, item 2, and notes final or similar phrase.

PART G: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval from the Board, carry out Modifications to the Water Supply Facilities or Solid Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:

    a) The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;

    b) Such Modifications do not place the Licensee in contravention of either the Licence or the *Act*;

    c) The Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days;

    d) An Inspector has authorized the proposed Modifications and provided a letter of notification to the Board; and

    e) The Board has not rejected the proposed Modifications.

2. Modifications for which all of the conditions referred to in Part G, Item 1 have not been met may be carried out only with written approval from the Board.

3. A minimum of ten (10) days prior to the commencement of modifications referred to in Part G, Item 1, the Licensee shall provide written notification to the Board and an Inspector.

4. Within ninety (90) days of the completion of the Modifications referred to in Part G, item 1, the Licensee shall submit to the Board as-built drawings stamped and signed by a Professional Engineer, which notes “final” or similar phrase.

PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall act in accordance with the Spill Contingency Plan submitted on February 6, 2017, until such a time as a revised plan is approved by the Board.

2. Within eighteen months following the issuance of this Licence, the Licensee shall submit to the Board for approval, an updated Spill Contingency Plan in accordance with the *MVLWB Spill Contingency Plan Template for Municipal Water Licences*, which includes, but is not limited to, the following information:

    a) Updated contact information for onsite personnel and outside organizations;

    b) Clearly identified roles and responsibilities of On-site Supervisor and other spill responders;

    c) An updated flow chart that clearly depicts the communication lines and the response duties of each member of the response team; and

    d) A description of spill response training provided to on site personnel.

3. The Licensee shall review the Spill Contingency Plan annually, and if necessary, modify the plan to reflect changes in operation(s) and technology, chemicals or fuels, or as directed by the Board. The updated Spill Contingency Plan shall be submitted to the Board for approval, and shall include a summary of revisions.

4. If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:

    a) Implement the approved Spill Contingency Plan;

    b) Report all Spills immediately via the (24) Hour NWT-Nunavut Spill Report Line (867) 920-8130 in accordance with the instructions contained in the NT-NU Spill Report Form and the Spills Working Agreement, Appendix A, Schedule 1 – Reportable Quantities for NT-NU Spills.;

    c) Report each Spill to the Board and an Inspector within 24 hours; and

    d) Submit to the Board and an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event. The detailed report shall include descriptions of root causes, response actions, and any changes to procedures to prevent similar occurrences in the future.

5. All Spills and Unauthorized Discharges of Water or Waste shall be reclaimed to the satisfaction of an Inspector.

PART I: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

1. The Licensee shall submit to the Board for approval a Closure and Reclamation Plan at least six (6) months prior to the Closure of any Water Supply, Sewage or Solid Waste Disposal Facilities. The plan shall be in accordance with Schedule 3, item 1.
2. The Licensee shall implement the Plan specified in Part I, Item 1 as and when approved by the Board.
3. Upon implementation of the Closure and Reclamation Plan, the Licensee shall provide to the Board and Inspector updates of all Closure and Reclamation activities within the Annual Report as described in Part B, Item 2.

GWICH'IN LAND AND WATER BOARD

Witness – Leonard DeBastien

Acting Chair – Elizabeth Wright

Schedule 1 – Annual Water Licence Report

1. The **Annual Water Licence Report** referred to in Part B, item 4 of this Licence shall include, but not be limited to, the following information:

    a) The monthly and annual quantities in cubic metres of fresh Water obtained from all sources;
    b) The monthly and annual quantities in cubic metres of each and all Waste discharged to the Waste Disposal Facilities;
    c) The annual quantity of Hazardous Waste stored on site and shipped off site (if any);
    d) Tabular summaries of all data generated under the Surveillance Network Program (SNP) referred to in Part B of this Licence;
    e) A summary of activities conducted in accordance with the approved Solid Waste Disposal Facility Fencing Plan, referred to in Part D, item 8 of this Licence undertaken during the previous calendar year;
    f) Laboratory reports for all samples collected for the Surveillance Network Program, attached as an appendix;
    g) Geographic coordinates for all Surveillance Network Program stations and a map showing station locations;
    h) A summary of sludge management activities including results of depth and volume measurements, sludge removal and treatment;
    i) A summary of the annual inspection of the dams, dykes and other engineered earth structures designed to contain waste within the Sewage Disposal Facilities, in accordance with Part D of this Licence;
    j) A summary of Construction activities conducted in accordance with Part F of this Licence;
    k) A summary of Modification activities and major maintenance work conducted on the Water Supply and Waste Disposal Facilities, including all associated structures, in accordance with Part G of this Licence;
    l) A list and description of all Unauthorized Discharges that occurred during the previous calendar year, including the date, NWT spill number, volume, location, and summary of the circumstances and follow-up actions taken, and the status (i.e. open or closed), in accordance with the reporting requirements referred to in Part H of this Licence;
    m) An outline of any spill training and communications exercises carried out during the previous calendar year;
    n) A summary of any closure and reclamation work completed during the year and an outline of any work anticipated for the next year;
    o) A summary of any studies requested by the Board that relate to Waste disposal, Water Use or Reclamation, and a brief description of any future studies planned;
    p) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector;
    q) A summary of any updates or revisions to the Spill Contingency Plan, Management Plans and Operation & Maintenance Plans; and
    r) Any other details on Water Use, operating procedures, Modifications, maintenance work, or other topics, requested by the Board on or before November 1 of the year being reported.

Schedule 2 – Operation and Maintenance

1. The revised **Operation and Maintenance Plan for the Solid Waste Disposal Facilities** referred to in Part E, item 3 of this Licence shall include, but not be limited to, the following information:
    a) All of the components outlined in the Board's *Operation and Maintenance Plan Template for Municipal Water Licences: Solid Waste Facility;*
    b) A map showing all the components of the Solid Waste Disposal Facilities and SNP stations that monitor these facilities;
    c) The remaining capacity or lifespan for each component of the Solid Waste Disposal Facilities;
    d) Details about which sections of Solid Waste Disposal Facilities have been progressively reclaimed;
    e) Frequency of compaction and cover of Waste, and source of cover material;
    f) Use of drainage controls, measures employed to minimize standing water in waste cells, and contingency measures for leachate that does not receive approval to discharge;
    g) Monitoring conducted under the Surveillance Network Program;
    h) Measures for the management of Hazardous Wastes; and
    i) Measures for climate change preparation and adaptation.

2. The revised **Operation and Maintenance Plan for the Water Supply Facilities** referred to in Part E, item 4 of this Licence shall include, but not be limited to, the following information:
    a) All of the components outlined in the Board's *Operation and Maintenance Plan Template for Municipal Water Licences: Water Treatment System;*
    b) Methods for the characterization of sludge generated at the Water Supply Facilities;
    c) Measures for the disposal of sludge generated at the Water Supply Facilities; and
    d) Measures for climate change preparation and adaptation.

3. The revised **Operation and Maintenance Plan for the Sewage Disposal Facilities** referred to in Part E, item 5 of this Licence shall include, but not be limited to, the following information:
    a) All of the components outlined in the Board's *Operation and Maintenance Plan Template for Municipal Water Licences: Wastewater (Sewage) Treatment System;*
    b) A map showing all the components of the Sewage Disposal Facilities and Surveillance Network Program stations that monitor these facilities;
    c) Measures that will be taken to manage effluent that does not meet effluent quality criteria set out in Part D, item 4;
    d) Measures for sludge management, including how sludge depth is monitored, how sludge is managed, tested, removed, treated and disposed of;
    e) Water quality monitoring conducted under the Surveillance Network Program; and
    f) Measures for climate change preparation and adaptation.

Schedule 3 – Closure and Reclamation

1. With regard to the facility being closed, the **Closure and Reclamation Plan** referred to in Part I, item 1 shall include, but not be limited to, the following information:

    a) A description of existing conditions, including photographs;
    b) Hazardous Wastes removal, transportation, and disposal;
    c) Plans to minimize the potential for leachate to contaminate groundwater and surface runoff;
    d) Consideration of altered drainage patterns;
    e) Consideration of climate change effects;
    f) Contaminated site remediation;
    g) Type and source of cover materials;
    h) Future area use;
    i) A post-closure monitoring plan;
    j) An implementation schedule; and
    k) Maps delineating all disturbed areas, borrow material locations, and site facilities including hydrological features and elevation contours.

Annex A:
Surveillance Network Program (SNP)
Annexed to Water Licence G17L3-001 Part B, item 2
Town of Inuvik

Table of Contents:

Part A: Reporting Requirements

1. The effective date of this Surveillance Network Program (SNP) is July 1, 2017

2. The Licensee shall include all of the data and information required in Part C of this Annex in the Annual Water Licence Report, as specified in Part B, item 2 of this Licence.

3. The Licensee shall also provide SNP data at other times, if requested by an Inspector or the Board.

Part B: Sampling and Analysis Requirements

1. More frequent sample collection or provision of data may be required at the request of an Inspector.

2. The location of sampling sites is subject to the approval of an Inspector. The Licensee shall work with an Inspector to confirm suitability of sampling sites. Signs shall be posted as per Part B, item 5 of this Licence.

3. All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the current edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater* at the time of analysis, or by other such methods approved by an Analyst.

4. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.

Part C: SNP Station Descriptions and Monitoring Requirements

SNP #	Location	Sampling Frequency	Sampling Parameters	Rationale
0036-1	Raw Water intake at the Mackenzie River Water Supply Facilities (68°21'10.36"N 133°43'35.53"W)	Monthly	Volume of water in cubic metres	To monitor the monthly and annual quantity of Water withdrawn for municipal purposes.
0036-2	Hidden Lake Pumphouse (68°21'36.86"N 133°42'1.17"W)	DISCONTINUED	DISCONTINUED	DISCONTINUED
0036-3	Decant Structure at the Sewage Disposal Facilities (68°22'20.58 "N 133°45'38.85"W)	Monthly	• pH • $CBOD_5$ • Suspended Solids • Ammonia • Faecal Coliforms • Oil and Grease	Site of compliance. To monitor final effluent quality prior to discharge to the Receiving Environment.
0036-3a	Decant Structure at the Sewage Disposal Facilities (68°22'20.58 "N 133°45'38.85"W)	• 10 days before beginning a Batch Decant • Once at the beginning of the decant • Once in the middle of the decant • Once at the end of the decant	• pH • $CBOD_5$ • Suspended Solids • Ammonia • Faecal Coliforms • Oil and Grease	Monitoring to take place only in the event of an emergency decant. To monitor final effluent quality prior to discharge to the Receiving Environment.

0036-4	Run-off below the Solid Waste Disposal Facilities (68°21'7" N, -133°41'1.3"W)	Monthly, during periods of flow	• pH • $CBOD_5$ • Suspended Solids • Sodium • Total Phosphate • Magnesium • Sulphate • Potassium • Calcium • Total Phenols • Total Chromium • Total Lead • Total Phenols • Total Chromium • Total Lead • Total Iron • Total Nickel • Total Copper • Total Cadmium • Total Zinc • Total Mercury • Conductivity • TPH	To monitor potential impacts of the Solid Waste Disposal Facilities on surface Water
0036-5	Run-off to two (2) tundra ponds located southwest of the Solid Waste Disposal Facilities. (68°20'36.22"N, 133°40'32.41"W)	Monthly, during periods of flow	• pH • $CBOD_5$ • Suspended Solids • Sodium • Total Phosphate • Magnesium • Sulphate • Potassium • Calcium • Total Phenols • Total Chromium • Total Lead • Total Phenols • Total Chromium • Total Lead • Total Iron • Total Nickel • Total Copper • Total Cadmium • Total Zinc • Total Mercury • Conductivity • TPH	To monitor potential impacts of the Solid Waste Disposal Facilities on surface Water

0036-6	"Gate Pond" near the SW corner of the Sewage Disposal Facilities (68°21'51.45"N, 133°45'1.00"W)	Annually, during periods of flow	• pH • $CBOD_5$ • Suspended Solids • Ammonia • Faecal Coliforms	To monitor potential impacts of the Sewage Lagoon on surface Water
0036-7	"Far Pond" near the northwest corner of the Sewage Disposal Facilities (68°22'15.73"N, 133°45'41.60"W)	Annually, during periods of flow	• pH • $CBOD_5$ • Suspended Solids • Ammonia • Faecal Coliforms	To monitor potential impacts of the Sewage Lagoon on surface Water
0036-8	Twin Lakes at Happy Valley (68°21'39.14"N, 133°44'28.10"W)	Annually, during periods of flow	• pH • $CBOD_5$ • Suspended Solids • Ammonia • Faecal Coliforms	Control for Sewage Lagoon Sampling
0036-9	Boot Creek upstream of Boot Lake (TBD)	Monthly, during periods of flow	• pH • CBOD5 • Suspended Solids • Sodium • Total Phosphate • Magnesium • Sulphate • Potassium • Calcium • Total Phenols • Total Chromium • Total Lead • Total Phenols • Total Chromium • Total Lead • Total Iron • Total Nickel • Total Copper • Total Cadmium • Total Zinc • Total Mercury • Conductivity • TPH	To monitor potential impacts of the Solid Waste Disposal Facilities on surface Water

Annex B:
Concordance Table of Items Requiring Submission (Water Licence G17L3-001)

Licence Part	Item	Timeline for Submission
B	Submit Annual Water Licence Report	By March 31 of each year
B	Notify Board and Inspector if any effluent criterion is exceeded	Within 7 days of exceedance
D	Notify Board and Inspector before initiating Sludge removal	At least thirty (30) days prior to removal
D	Submit Solid Waste Disposal Fencing Plan	Not Later than July 1, 2019
E	Submit updated Operation and Maintenance Plan for the Solid Waste Disposal Facilities	Not later than January 1, 2018
E	Submit Operation and Maintenance Plan for the Water Treatment Facilities	Not later than July 1, 2018
E	Submit updated Operation and Maintenance Plan for the Sewage Waste Disposal Facilities	Not later than July 1, 2019
F	Submit Final design drawings for any structures intended to contain, withhold, divert or retain Waters or Wastes	At least sixty (60) days prior to commencement
F	Notify Board and Inspector before commencing Construction of any structures intended to contain, withhold, divert or retain Waters or Wastes	At least ten (10) days prior to commencement
F	Submit As-Built drawings for Construction of any structures intended to contain, withhold, divert or retain Waters or Wastes	Within ninety (90) days of completion
G	Notify Board and Inspector of proposed Modifications to Water Supply or Waste Disposal Facilities	At least sixty (60) days prior to commencement
G	Notify Board and Inspector before commencing Modifications	At least ten (10) days prior to commencement
G	Submit as-built drawings for Modifications	Within ninety (90) days of completion
H	Submit updated Spill Contingency Plan	Not later than January 1, 2019
I	Submit Closure and Reclamation Plan	At least six (6) months prior to abandoning any Water Supply, Sewage or Solid Waste Disposal Facilities

Note: This table summarizes the information the Licensee is required to submit as per the Water Licence Conditions. In the event of a discrepancy between this table and the body of the Water Licence, the Water Licence condition will prevail.

Appendix A2. MVLMB – Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility

MVLWB

Operation and Maintenance Plan Templates for Municipal Water Licences: Solid Waste Facility

June 2017

Mackenzie Valley Land and Water Board

SAHTU LAND & WATER BOARD

GWICH'IN LAND AND WATER BOARD

Wek'èezhìı Land and Water Board

Government of Northwest Territories

Mackenzie Valley Land and Water Board

Operation & Maintenance Plan Template - Solid Waste Facility (SWF)

If you have any questions about this document, please contact your regional Manager of Community Infrastructure Planning.

1. Site Description

Where is the solid waste facility (SWF) located?

Community:	Town of Inuvik
Latitude:	N 7582211
Longitude:	E 554305

Which coordinate system was used for these coordinates?

- ○ Decimal Degrees
- ○ Degrees, Decimal Minutes
- ◉ Universal Transverse Mercator (UTM)

☑ Location map attached.

Map to include scale, north arrow, roads/access, and location of groundwater monitoring wells.

What are the ground conditions relating to permafrost in and around the community in which the SWF is located?

Definitions:

- **Permafrost** – Ground that stays frozen through the summer. There is a surface layer that thaws, but underneath the ground stays frozen. (There are other definitions, but for the following question, use this one.)
- **Continuous permafrost** – There is permafrost everywhere in the area.
- **Discontinuous permafrost** – (a) There is permafrost but some areas thaw in the summer, or (b) there are some patches of permafrost, but most of the ground thaws in the summer.

- ◉ Continuous permafrost
- ○ Discontinous permafrost
- ○ No permafrost in area

2. SWF Staff

Provide the name, contact information, and role for each staff member.

Name	Phone	Email
Grant Hood	876-777-8608	sao@inuvik.ca

Role/Responsibilities: Senior Administrative Officer

Name	Phone	Email
Rick Campbell	867-777-8615	rcampbell@inuvik.ca

Role/Responsibilities: Municipal Services Manager/Director of Public Works

Name	Phone	Email
Jessi Harder	867-678-5830	harder@hotmail.ca

Role/Responsibilities: Landfill Operator

Staff Training:
Please indicate if any of the SWF staff have the following training (current or expired):
(Check all that apply.)

☐ Ozone Depleting Substances (halocarbons, refrigerants) technician

Definition: A technician who is otherwise qualified to service refrigerant equipment and has successfully completed the environmental awareness training course for refrigerants offered by the Heating, Refrigeration and Air Conditioning Institute of Canada. (1-day classroom course in addition to being a qualified technician)

This is required for draining refrigerants from vehicles, air conditioners, fridges, and other equipment. Refer to ENR's document *Environmental Guideline for Ozone Depleting Substances (ODS's) and Halocarbon Alternatives*.

☐ Transportation of Dangerous Goods (TDG)

Everyone who handles, prepares for transport or carries dangerous goods must be trained and certified. Some of the common hazardous materials that may come into a SWF are also dangerous goods. (Can be done online)

☐ Workplace Hazardous Materials Information System (WHMIS)

WHMIS training is required for any employee that requires this information to protect themselves from the hazards of the controlled products they handle at their workplace. (Can be done online)

☑ Waste Management

Training on municipal solid waste, solid waste collection, alternatives to solid waste, landfill operations and maintenance, regulatory requirements and occupational health and safety, such as the MACA School of Community Government Solid Waste Management course or through organizations such as Northern Alberta Institute of Technology (NAIT) and Solid Waste Association of North America (SWANA). (Classroom course)

☐ First Aid

First Aid training is recommended as a best practice for SWF staff due to the inherent hazards of working at a solid waste site. (Standard First Aid is a 2-day classroom course)

☐ Hazardous Waste Operations and Emergency Response (HAZWOPER)

HAZWOPER training is recommended for larger sites, wherever practical. (40-hour classroom course)

☐ Other relevant courses:

3. Security and Control

How is public access to the facility controlled? (Check all that apply.)

☐ No control

☑ Front gate locked when facility is closed

☐ Perimeter chain-link fence (around entire facility)

☐ Locked man-door

☑ Other: A partial fence

Is the following signage posted at the SWF? (Check all that apply.)

☐ Sign near the site entrance indicating that waste screening is completed on site

☐ Telephone numbers for facility manager and local fire protection services.

☐ Sign at each waste, recycling, and reuse stockpile showing the items that should be placed there

☑ Hours of operation

☐ "No burn" restrictions

☐ Tipping fee information

☑ Location of Surveillance Network Program (SNP) monitoring sites

☐ List of materials that are not accepted

What fencing is installed at the site (aside from perimeter fencing identified above)? (Check all that apply.)

☐ Wind fence down-wind of the active face to control litter

☐ Electric fence around areas that may attract animals, including decomposable waste storage

When is the electric fence typically activated?
From Month to Month

☐ Other:

4. Facility Operations

Hours/days of operation: Mon-Fri: 9 am - 6 pm; Sat-Sun: 1 pm - 4 pm

Year landfilling began at the facility (estimate if not known): 1976

Is a weigh scale used at the facility?

◉ Yes ○ No

Hazardous waste receivers are registered for the type of hazardous waste they are receiving (e.g., asbestos, batteries, contaminated soil, used oil). If you are unsure if your facility is registered as a hazardous waste receiver, please contact the GNWT Department of Environment and Natural Resources at (867) 873-7654.

Is the facility registered to receive any hazardous wastes?

◉ Yes ○ No

Is there a specific Site Operator?

◉ Yes ○ No

If yes, number of days per week operator is onsite: 7 days Hours per day: 9 hrs

If no, how often does staff visit the facility?

Is heavy equipment used onsite (e.g. loader, excavator)?

◉ Yes ○ No

If yes, list equipment:

Loader, compactor, gravel truck.

5. Facility Design

Attach one of the following drawing options with the documents you are submitting. As-built drawings are preferred, if available. All drawings are required to have scales and north arrows (for plan views).

○ As-built drawings of the facility prepared by a Professional Engineer or Geoscientist registered with NAPEG, who has expertise in the subject area.

○ Design drawings stamped by a Professional Engineer or Geoscientist registered with NAPEG, who has expertise in the subject area.

◉ Scaled site plan with an air photo.

Provide a general description of the facility design or indicate these items on the drawing. Identify locations of public drop-off areas, material stockpiles, and landfill cells. List compactors and balers. Describe buildings on site.

Leachate is defined as water that percolates (flows) through the landfill. It picks up toxic chemicals on its way through the waste.

What systems are in place for leachate?

○ Active leachate collection and treatment (i.e., engineered liners/covers)

◉ Facility relies solely on natural attenuation of landfill leachate

○ Other:

If the facility has a liner, please indicate which types of liner are present:
(Check all that apply.)

☐ HDPE/PVC/geomembrane/plastic liner

☐ Geosynthetic Clay Liner (GCL)

☐ Other:

How is the liner monitored for leaks?

6. Accepted Materials

Identify the materials accepted at the SWF and the disposal method for each.

Notes:

- **Segregated for reuse** means that items that are still in usable condition are set aside in a safe area for the public to search through and take home.
- **Shipped out for recycling or disposal** includes items that are stockpiled and backhauled when a large enough quantity has been built up. These items may be intended for recycling or to be landfilled, incinerated or otherwise disposed of offsite.
- **Burning** should be done in accordance with ENR's document *Municipal Solid Wastes Suitable for Open Burning*, which provides specific conditions under which paper products, paperboard packaging and untreated, unpainted wood wastes may be burned. Other materials are not suitable for burning.

	Not accepted	Landfilled at site	Segregated for reuse	Shipped out for recycling or disposal	Burned	Composted
Municipal Solid Waste (waste generated in the community with the exception of industrial process waste and agricultural waste)	○	◉	○	○	○	○
Construction, renovation, and demolition waste (waste generated in the community from construction, renovation and demolition activities with the exception of hazardous waste including asbestos)	○	◉	○	○	○	○

	Not accepted	Landfilled at site	Segregate for reuse	Shipped out	Burned	Compost
Scrap metal	○	⊙	○	○	○	○
White goods (appliances such as refrigerators, stoves, microwaves, etc.) NOTE: Refrigerants must be removed. See Hazardous Materials.	○	⊙	○	○	○	○
Tires	○	⊙	○	○	○	○
Electronic waste	○	⊙	○	○	○	○
Recyclables – Plastics	○	⊙	○	○	○	○
Recyclables – Tin Cans	○	⊙	○	○	○	○
Recyclables – Returnable Beverage Containers	○	⊙	○	○	○	○
Recyclables – Cardboard	○	⊙	○	○	○	○
Recyclables – Mixed Paper/Newspaper	○	⊙	○	○	○	○
Recyclables – Glass	○	⊙	○	○	○	○
Household hazardous waste (typical items include paint, batteries, leftover chemicals from households; see attached list)	○	○	○	⊙	○	○
Non-hazardous waste from the industrial sector within the community.	○	⊙	○	○	○	○
Non-hazardous waste from the commercial sector within the community.	○	⊙	○	○	○	○
Non-hazardous waste from the institutional sector within the community.	○	⊙	○	○	○	○
Reusable goods (items that can be removed by the public for reuse, such as furniture)	○	⊙	○	○	○	○

	Not accepted	Landfilled at site	Segregate for reuse	Shipped out	Burned	Compost
Clean wood and tree trimmings	○	◉	○	○	○	○
Mixed paper and cardboard	○	◉	○	○	○	○
Mixed solid waste	○	◉	○	○	○	○
Food and yard waste	○	◉	○	○	○	○
Animal carcasses	○	◉	○	○	○	○
Biosolids (nutrient-rich organic materials resulting from the treatment of domestic waste at a wastewater treatment system; aka sewage sludge)	◉	○	○	○	○	○

Other:

If any items are shipped out of the community, how frequently is this done?

Freon is removed by a certified technician, through a Scavenging Permit issued by the Town at a "as needed" frequency (approximately twice a year).
HHW is managed through Inuvik's Fire Department HHW collection event once a year.

7. Waste Generation and Site Capacity

This section provides an estimate of the amount of waste and recyclable materials being generated in the community, and the amount of space required at the SWF to transfer and store these materials.

Is waste being accepted from outside the community?

◉ Yes ○ No

If yes, describe outside sources of waste:

Only MSW is received from outside sources, such as oil companies. The amount of waste received from outside sources varies significantly, an approximate of 3 - 20 loads per year.

Choose one of the following methods to estimate the amount of waste generated in the community. Data from a study or other calculation is preferred. Weigh scale data can be used if no calculated value is available. The third option should only be used if no other data is available.

Ensure the numbers you enter are in the correct units; they will be used to automatically calculate answers.

○ Enter a number in kg/capita/day from a study, calculation, or typical value

[ ] kg/capita/day

Where did you get this number? Include title, author/consultant or other source name:

[ ]

◉ Calculate from weigh scale data

Enter annual metric tonnage of waste received at facility: 5816 tonnes/year

Enter population of geographical area described above: 3170 people

Calculated rate: 5.027078864353313 kg/capita/day

○ No data available: Assume per capita waste generation rate of 2.5 kg/capita/day.

The following questions will calculate the space required for waste over the next 10 years of the facility's life, based on assumptions about the level of compaction, the ratio of cover material to waste (assumed to be 1:5), and the projected population.

Is waste compacted on site?

◉ Yes - Assume MSW density is 300 kg/m³

○ No - Assume MSW density is 150 kg/m³

Go to http://www.statsnwt.ca/ In the menu, find Population. Click Population Estimates. Find the link for Community Totals and look up the current population for your community. Next, click Population Projections. Find the population projection for your community **10 years from now**. (If the exact year you need is not listed, use the closest year.)

Current year population: 3170 people

Population in 10 years: 3123 people

Calculated space required for the next 10 years: NaN m^3

How much empty space is left in the facility (volume in m^3)? Either enter a volume from a topographical survey, or enter measured dimensions of the empty space.

○ Surveyed volume of remaining empty space: _____ m^3

◉ Enter dimensions of empty space in meters:

Length	300 m	NOTE: If your measurements are in feet,
Width	200 m	multiply by 0.305 to get meters.
Depth/Height	8 m	e.g. 50 ft x 0.305 = 15.2 m
Calculated Volume	480000 m^3	

Is the remaining empty space larger than the space required for the next 10 years?

◉ Yes ○ No

If there is not enough space for the next 10 years, what is the plan to deal with this?

8. Community Waste Collection and Handling

What types of waste collection are done in the community? (Check all that apply.)

☑ Door-to-door collection of MSW

Frequency of collection: Every other week

☑ Collection of recyclables (door-to-door or centralized bins)

Frequency of collection: Third party door-to-door collection

☐ Collection of compost (door-to-door or centralized bins)

Frequency of collection:

☐ Bins for commercial/industrial waste

Frequency of collection:

Other waste collection (describe):

9. Waste Screening

Waste types that are not accepted at the SWF need to be screened at the facility entrance. Unacceptable waste may include hazardous waste, or waste generated from the Industrial, Commercial, Institutional sector or by residents outside the community.

The following questions are about the waste screening methods used at the facility.

Does someone look at each load that comes in to the facility?

◉ Yes ○ No

If **yes**, when is this done? (Check all that apply.)

☑ At the entrance gate ☑ During dumping ☑ While waste is on the ground

☐ Other:

What other screening methods and policies are used to prevent unacceptable waste entering the facility? (Check all that apply.)

☑ More detailed investigations are done on random loads.

☑ Written policy and procedures outlining frequency and steps taken for random load inspections.

☐ There is a designated location for load inspection.

☐ Method for removing and storing unacceptable waste from piles is defined.

☑ The SWF operator has the ability to check any suspicious loads at any time.

☐ Other:

10. Unacceptable Wastes

Once unacceptable waste has been encountered it is important to identify the generator. Industrial/commercial/institutional generators are required to transport their hazardous waste to registered receiving facilities according to the guideline for the *General Management of Hazardous Waste in the NWT*.

It is not suitable to have the hauler (carrier) remove the unacceptable waste if the,

- Original generator cannot be identified;
- Generator refuses to take responsibility; or
- Waste cannot be transported according to Department of Transport regulations (Transportation of Dangerous Goods Regulations).

If the generator is identified and refuses to take responsibility of the hazardous waste, they may be charged for the clean-up and proper management of the waste at the facility. It is important to keep good records of correspondence as well as the situation in which the unacceptable waste was encountered.

The hauler may not be responsible unless it can be demonstrated they knowingly transported the unacceptable waste to the SWF. It is important to work with the hauler (carrier) to identify the generator. For advice in dealing with unacceptable or hazardous waste issues, contact your local or regional ENR office. If the local or regional office is not available, ENR Environmental Protection may be able to assist (call 867-873-7654).

The following methods for management of unacceptable waste are employed at the SWF:
(Check all that apply.)

☑ Notify appropriate municipal, territorial, or federal agencies.

☑ Secure the waste to prevent contamination and disturbance.

☑ Maintain records of date/time, conversations, and conditions of the incident.

☑ Cooperate with other regulatory agencies to handle the incident.

☐ Other:

Most municipal water licences do not authorize a community to accept waste from **outside of municipal boundaries** from industrial/commercial/institutional generators. Some licences may require written authorization from the inspector in order to accept this type of waste. (Check all that apply.)

☑ Does your community accept any waste from outside of municipal boundaries from the industrial/commercial/institutional sector?

☑ Does your community have written authorization from the Inspector to accept this waste?

☐ Does your community have a written agreement with the generator(s) regarding types and volume of waste accepted and tipping fees?

11. Record-Keeping for Unacceptable Wastes

Are records kept for unacceptable waste that arrives at the facility?

◉ Yes ○ No

If yes, where are these records kept? Site Office and Town Office

The following records are maintained:
(Check all that apply.)

☑ Date and time of inspection

☑ Hauler (carrier) name and company

☑ Type and quantity of waste detected

☑ Generator of the waste

☑ Actions taken to manage unacceptable waste

☑ Name of personnel in charge of waste screening

12. Landfilling Operations

Typical landfilling operations include placement of waste, compaction of waste, and placement of intermediate and final cover. Indicate which operations take place at this facility:
(Check all that apply.)

☑ Compaction of landfilled waste

How often is compaction done? Daily

Lift thickness of waste compacted: 0.6 m
(i.e. how deep is the waste usually piled up before compacting?)

Equipment used for compaction: Skidder fitted with compaction wheels

☑ Placement of Intermediate Cover

(to limit wind-blown litter, potential for fires, wildlife access and to improve aesthetics)

Borrow source for intermediate cover: Mount Baldy

How often is intermediate cover placed? As required, see definition in O&M manual

Thickness of intermediate cover placement: 0.35 m

Intermediate cover soil type (e.g. sand and gravel): Clayey gravel

Select the months when intermediate cover is placed: From June to September

☐ Placement of Final Cover

(Placed when cells are no longer in use in order to limit infiltration, encourage re-vegetation, and limit burrowing animals).

Borrow source for final cover (if identified):

Final cover material (e.g. clay or synthetic material):

Thickness of final cover material to be placed: m

13. Litter and Wildlife Control

What strategies (other than cover placement and fencing) are used to reduce litter and manage wildlife at the facility? (Check all that apply.)

☑ Routine litter cleanup

☐ Bird deterrents

☐ Other:

14. Surface Water Management

Surface water management is typically required at SWFs to minimize surface water contact with waste and to reduce the potential for erosion and ponding. Please indicate which surface water management practices are used at the facility:
(Check all that apply.)

☐ Perimeter ditches surrounding site to manage run-on.

☐ Interior ditches and culverts to manage run-off.

☑ Positive site drainage (1 to 2%) to minimize ponding.

Describe the following, or show these items on a sketch or drawing:

- Locations of ditches or other surface water drainage structures
- Where surface water from drainage structures ends up (discharge location)
- Any locations where water collects as puddles or temporary ponds
- Where any water that isn't collected in drainage structures ends up

(Check all that apply.)

☑ Drawing attached

☐ Description (for items not on drawing):

What is the distance to the nearest fish-bearing water body (lake, river, etc.)? 860 m

15. Record-Keeping

The following are record keeping requirements related to O&M of the Solid Waste Facility and should be filed as an annual report with the MVLWB no later than the date stipulated in the water license for the previous year. The annual report should include the following items:

- A summary of monthly and annual quantities of MSW received and landfilled.

  How and where is this recorded? Landfill Operator to record each load's weight at the scale

  Where are these records kept? Site Office and Town Office

- A summary of monthly and annual quantities of hazardous waste stored on-site and transported off-site.

  How and where is this recorded? Landfill Operator to keep copies of TDG records.

  Where are these records kept? Site Office and Town Office

- A summary of modifications and/or major maintenance work carried out on the solid waste disposal facilities, including all associated structures.

  How and where is this recorded? MSM to keep records

  Where are these records kept? Town Office

- Tabular summaries of all data generated under the Surveillance Network Program and a copy of original lab results.

  How and where is this recorded? An Annual Report is generated

  Where are these records kept? Town Office and submitted to the Water Board

- A list of spills and unauthorized discharges.

  How and where is this recorded? Record Forms are generated and included in Annual Report

  Where are these records kept? Town Office and submitted to the Water Board

- A summary of any closure and reclamation work completed during the year and outline of any work anticipated for the next year.

  How and where is this recorded? N/A

  Where are these records kept? N/A

- An outline of any operator training and communication exercises carried out.

  How and where is this recorded? Copies of certificates

  Where are these records kept? Town Office

Are records of repairs kept?

○ Yes ◉ No

Are records of upgrades kept?

○ Yes ◉ No

16. Inspection and Monitoring

Indicate how often the following items are inspected or monitored:

	Not Applicable	Never	Daily	Weekly	Other (specify)
Hydrocarbon contamination (e.g. oily sheen in surface water, visible stains and hydrocarbon odour near disposal areas)	○	○	○	○	◉ Monthly
Signs of burrowing animals (e.g. droppings, holes around active or previous cells, animal sightings)	○	○	◉	○	○
Signs of large mammals/birds (e.g. droppings, animal tracks, animals sightings)	○	○	◉	○	○
Access road condition (e.g. potholes, erosion, rutting, ponding)	○	○	◉	○	○
Groundwater monitoring wells (e.g. condition of protective casing, protection from snow clearing activities, comparison of installation depth to current depth, ground subsidence surrounding protective casing)	◉	○	○	○	○
Ponded water throughout site	○	○	◉	○	○

Access control structure condition (e.g. damaged jersey barriers, damaged entrance gate)	○	○	◉	○	○
Dead plants or other changes to vegetation near active and historical landfill cells.	○	○	◉	○	○
Signage (vandalism, general condition)	○	○	◉	○	○
Voltage of electric fence, if applicable (i.e. significant changes in voltage from intended design)	◉	○	○	○	○
Vegetation growth and litter around electric fence, if applicable (may cause a short in the current flow)	◉	○	○	○	○
Erosion on side slopes of active and closed cells and within surface water conveyance structures	○	○	○	○	◉ Monthly
Sedimentation and vegetation of drainage structures (e.g. blockage of culverts with gravel, plant growth in ditches)	○	○	○	○	◉ Monthly
Other monitoring activities (describe):	○	○	○	○	○

17. Hazardous Waste Management

There are two main sources of hazardous waste generated in a community:

I. Hazardous waste from the Industrial, Commercial, and Institutional Sector; and

II. Household hazardous waste from residents.

Communities are not required to accept hazardous waste from the industrial/commercial/institutional sector. The industrial/commercial/institutional sector is required to transport their hazardous waste to a registered receiving facility. **Community disposal facilities are cautioned to register as hazardous waste receivers with ENR prior to accepting hazardous waste from the industrial/commercial/institutional sector.** Note that some water licences do not allow for municipalities to accept hazardous waste from the industrial/commercial/institutional sector that is generated outside of municipal boundaries.

Any spill of hazardous waste or other hazardous materials, such as fuel, must be immediately reported to the 24-Hour Spill Report Line at (867) 920-8130, or by fax, email, or by filling out a form online. Additional information can be found on ENR's website: http://www.enr.gov.nt.ca/programs/hazardous-materials-spills/reporting-spills (or from http://www.enr.gov.nt.ca, click Programs, then Hazardous Materials Spills).

In the event of an **emergency involving dangerous goods**, call the Spill Report Line first. If there is no answer and you need help, you can call CANUTEC at 613-996-6666 or *666 on a cellular phone. For regulatory questions about Transportation of Dangerous Goods, you can find general contact information for CANUTEC and Transportation of Dangerous Goods regional offices online at: https://www.tc.gc.ca/eng/canutec/menu.htm

Household hazardous waste typically includes, but is not limited to, items such as used oil, paint, batteries, leftover cleaners, solvents, pesticides, thermostats, waste fuel, and aerosol cans that are generated by residents in their homes (see attached list).

How does the community collect and safely dispose of household hazardous wastes?

A Household Hazardous Waste collection program is held through the Town's Fire Department once a year.

Who is the contact for inspections and record-keeping for hazardous waste at the SWF?

Name	Phone	Email
Rick Campbell	867-777-8615	rcampbell@inuvik.ca

Role/Responsibilities

Municipal Services Manager/Director of Public Works

Describe the frequency of inspections and how records of inventories are maintained.

Records of hazardous waste received at the landfill must be collected using the landfill's Hazardous Material Load Check Form. These records are kept at the site office and submitted to the MSM for inclusion in the Annual Report.

Hazardous waste information

Asbestos: Exposed asbestos fibres from construction and demolition debris present a risk to human health. The risks to human health are lowered to safe levels when asbestos is properly packaged according to the conditions set by the Worker Safety and Compensation Commission. Once this has taken place, a hole must be dug in advance of acceptance and the asbestos needs to be buried immediately. The location needs to be documented to prevent future disturbance. Further details can be found in ENR's document *Guideline for the Management of Waste Asbestos* (attached).

Lead-acid batteries are commonly found in vehicles. Both the lead and the acid are contaminants. Batteries in good condition can be stacked on pallets and banded or shrink-wrapped for transportation when enough have been collected to make shipping worthwhile. Store broken batteries in a pail or other container to prevent spills and avoid contact with battery acid. Further details can be found in ENR's document *Guideline for the Management of Waste Batteries* (attached).

Glycols: Waste antifreeze (Ethylene Glycol) is generated from vehicle maintenance. Propylene glycol is more common to the industrial/commercial sector where it is used for heating larger buildings. Glycols can be stored in pails or drums until the quantity warrants shipping. Further details can be found in ENR's document *Guideline for the Management of Waste Antifreeze* (attached).

Hydrocarbon-contaminated soil, snow, and water that result from spills or contaminated sites are managed as a hazardous waste in the NWT. Hydrocarbons include diesel, heating oil, gasoline, and other petroleum products. Communities wanting to store or treat contaminated soil, snow, or water may need to amend their water licence. Contact ENR for guidance on developing appropriate facilities.

Mercury is a severely toxic contaminant. Disposal needs to be reduced to levels as low as reasonably achievable. Thermostats, thermometers, mercury switches and fluorescent lamps all contain mercury. They can be safely stored in clearly marked pails. Drum-top crushing equipment can be used to remove the mercury from fluorescent bulbs. Other types of mercury-containing lights (i.e. street lamps or high intensity discharge lamps from the industrial/commercial sector) require specialized disposal methods and usually need to be transported to southern receiving facilities. For further information, see ENR's document *Guide to Recycling Mercury-Containing Lamps* (attached).

Oily debris can consist of rags, sorbent material, or containers used to store or clean up oil. These materials are contaminants that cannot be added to a typical soil treatment facility, but need to be kept segregated from other waste.

Ozone depleting substances (ODS), also referred to as halocarbons, are chemicals mainly used in air conditioning and refrigeration equipment. The release of these substances depletes the ozone layer and is prohibited. Refrigerants need to be recovered by a trained technician prior to disposal of items containing refrigerants, including refrigerators, freezers and vehicles. Specific training is required for anyone servicing equipment containing ODSs and halocarbon alternatives. For more information, see ENR's document *Environmental Guideline for Ozone Depleting Substances (ODS's) and Halocarbon Alternatives* (attached).

Paint: Paint can contain a number of hazardous chemicals, including lead. Whenever possible, paint should be used rather than disposed of. If it can't be used, the disposal method depends on the type of paint (check the label). Oil-based paint should be stored in approved 205 litre drums, ready for shipping. Latex paints can be landfilled after they are completely dried out (they can be spread out on a board or sheet to dry). Industrial/commercial paints usually need specialized treatment methods and should not be collected at the community SWF. Check ENR's document *Guideline for the Management of Waste Lead and Lead Paint* (attached) for more information.

Propane tanks and aerosol cans are regulated as a dangerous good and are a potential explosion hazard at all times. Propane tanks can be returned to the retailer or supplier for safe storage and transport. Trained staff can safely evacuate the propane gas, making the tanks safe for scrap metal. Large propane tanks and other compressed gas canisters from the industrial/commercial sector should not be collected at the community SWF.

Residue Fuel Tanks / Heating Oil Tanks / Residue Drums: Fuel storage tanks and drums often contain residue (e.g. sludge at the bottom), or may still contain flammable vapours. Tanks must be properly emptied prior to disposal as scrap metal. Empty drums need to be stored on their sides to prevent water from accumulating.

Used oil can be used as feedstock for a used oil furnace if the testing and other conditions in the *Used Oil and Waste Fuel Management Regulations Plain Language Guide* (attached) are met. Used oil can be stored in clearly labelled good quality tanks or drums. Do not let drums or pails be contaminated with glycol or solvents. Do not accept excessive volumes from the industrial/commercial sector.

Waste Fuel: Residents generate waste fuel from the use of gas-powered equipment and need a local disposal option. Waste fuel from residents can be bulked into UN-approved steel drums at Household Hazardous Waste collection events, or on a daily basis. The decision to accept waste fuel from residents on a daily basis requires appropriate screening methods to screen out incompatible materials from residents and excessive volumes of fuel or solvents from the industrial/commercial/institutional sector.

Vehicles: End-of-life vehicles contain antifreeze, batteries, fuel, mercury switches and other lubricating fluids that are considered hazardous waste and need to be removed. Once the hazardous materials are removed, the rest of the vehicle can be treated as scrap metal. Refrigerants from air conditioning systems will need to be removed by a trained technician.

Indicate which hazardous wastes are accepted at the facility:
(Check all that apply.)

In the "maximum quantity stored onsite" column, indicate how much of each material is allowed to accumulate before the material is shipped out.

	Accepted from the residential sector	Accepted from the industrial or commercial sector	Maximum quantity stored onsite	If there are alternate facilities available for residential disposal, specify the name and location of the facility:
Asbestos	☐ Yes	☑ Yes	n/a	
Lead-acid batteries (e.g. car batteries)	☑ Yes	☑ Yes		
Waste antifreeze/glycols	☐ Yes	☐ Yes		
Hydrocarbon-contaminated soil, snow, and water	☐ Yes	☐ Yes		
Mercury-containing equipment	☐ Yes	☐ Yes		
Oily debris	☐ Yes	☐ Yes		
Ozone-depleting substances (ODS), halocarbons, or refrigerants	☑ Yes	☑ Yes		
Paint	☑ Yes	☑ Yes		

	Accepted from the residential sector	Accepted from the industrial or commercial sector	Maximum quantity stored onsite	If there are alternate facilities available for residential disposal, specify the name and location of the facility:
If paint is accepted:	Describe methods used to screen out paint types that are not accepted: Inspection of paint container. Do not accept paint that is not properly labelled.			
	Describe methods used to segregate (keep separate) different types of paint (e.g. acrylic (latex), oil-based, and lead-amended): Paint is kept in the containers in which it was delivered.			
Propane tanks	☑ Yes	☑ Yes		
Residue fuel tanks, heating oil tanks, residue drums	☑ Yes	☑ Yes		
If tanks and drums are accepted:	Describe conditions for acceptance (e.g. do they have to be punctured, drained, sludge removed, etc. before the facility will take them?) As per ENR Drum Disposal Protocol for Municipal Landfill.			
Used oil	☐ Yes	☐ Yes		
Waste fuel	☐ Yes	☐ Yes		
Vehicles (from which batteries, fluids and mercury switches have not been removed)	☐ Yes	☐ Yes		

How is hazardous waste stored to prevent spills and leaks? How is it secured to keep people from coming in contact with it and ensure public safety?

Primary containment is the container in which materials are stored, such as a drum, bag, bin, box, tote, or pallet.
Secondary containment may include a lined berm/dyke, metal box, concrete box or other physical barrier surrounding the primary containment.
Other methods to prevent spills and leaks may include storage arrangements such as "stored upright on pallets", handling procedures, or other ways of preventing spills.
Security measures may include separately fenced areas, locked structures, or other methods.

If a material is not accepted at the facility, skip that line.

	Primary containment	Secondary containment	Other method to prevent spills and leaks (specify):	Security measures:
Lead-acid batteries	None	Metal box		Designated area
Waste antifreeze/glycols	n/a	n/a		
Mercury-containing equipment	n/a	n/a		
Oily debris	n/a	n/a		
Ozone-depleting substances (ODS), halocarbons, or refrigerants	None	None		Designated area
Paint	Other	Metal box		Designated area
Propane tanks	None	None		Buried at landfill
Residue fuel tanks, heating oil tanks, residue drums	None	None		Designated area
Used oil	n/a	n/a		

Waste fuel	n/a	n/a		
Vehicles	n/a	n/a		

Skip any questions for materials that are not accepted at the SWF.

Describe the location of **asbestos** burial within the facility.

Asbestos is buried in a designated general area. Exact coordinates of each asbestos pit is recorded using a GPS system.

Describe the plan for record-keeping and mapping of **asbestos** disposal.

An Asbestos Handling Policy is included in the Landfill's Operations and Maintenance Manual.

Describe what measures are taken to ensure that **fluorescent bulbs** are stored in dry conditions.

Describe what measures are taken to prevent breakage of **mercury-containing equipment**.

Describe procedures for removal of **ozone-depleting substances (refrigerants)** from refrigerators, air-conditioners, and other items. Indicate how frequently this work is done.

Removal of refrigerants is done by a certified third party technician, as required during the summer.

Describe methods used to clean **fuel tanks and drums containing fuel residues** prior to disposal.

As per ENR Drum Disposal Protocol for Municipal Landfill.

Describe methods used to remove hazardous materials (batteries, fluids and mercury switches) from **vehicles**. Indicate how frequently this work is done.

How are regular inspections of hazardous materials done, and how frequently are inspections done (e.g. daily, weekly, monthly)?

On a monthly basis.

How are records of inspections and inventories of materials maintained? Who (i.e. which staff position) is responsible for inspections?

Inspections are performed by the Landfill Operator and a record is generated.

Is there any existing documentation that outlines the engineering details and operation of the **hydrocarbon-contaminated soil, snow, and water** treatment/storage facility?

○ Yes ◉ No

If yes, provide details on existing documentation:

Prepared by (name of company or person that wrote the document):

Title of document:

Location of document (where is the plan kept, or where can a copy be obtained?):

If no, describe the criteria for accepting **hydrocarbon-contaminated soil, snow and/or water** (e.g., laboratory analysis, movement documents, etc.)

How are the following hazardous materials ultimately disposed of?

	Not applicable	Landfilled at site	Managed at site (but not landfilled)	Shipped out for recycling or disposal	Other (specify)
Asbestos	○	◉	○	○	○
Lead-acid batteries	○	○	○	◉	○
Waste antifreeze/glycols	◉	○	○	○	○
Mercury-containing equipment	◉	○	○	○	○
Oily debris	◉	○	○	○	○
Ozone-depleting substances (ODS), halocarbons, or refrigerants	○	○	◉	○	○
Paint	○	○	○	◉	○
Propane tanks	○	◉	○	○	○
Residue fuel tanks/drums	○	◉	○	○	○
Used oil	◉	○	○	○	○
Waste fuel	◉	○	○	○	○
Vehicles	◉	○	○	○	○

18. Tipping Fees

Indicate the waste categories for which tipping fees are charged:
(Check all that apply.)

- ☐ General MSW
- ☐ Household hazardous waste (see list in Appendix A)
- ☑ Industrial/commercial waste (e.g. from contractors or businesses) not including hazardous waste
- ☐ Other: _____

Indicate the hazardous materials for which tipping fees are charged:
(Check all that apply.)

- ☑ Asbestos
- ☐ Lead-acid batteries
- ☐ Glycols
- ☐ Hydrocarbon-contaminated soil, snow, or water
- ☐ Mercury-containing equipment
- ☐ Oily debris
- ☐ Ozone-depleting substances (refrigerants)
- ☑ Paints
- ☑ Propane tanks
- ☑ Fuel tanks and drums containing fuel residues
- ☐ Vehicles Containing Batteries, Fluids and Mercury Switches

19. Closure and Post-Closure Plan

When the SWF reaches capacity or the community decides to stop using the SWF, it is necessary to complete a closure and post-closure plan for the facility. A closure plan is a detailed document that describes how the facility would be shut down and designed to prevent or minimize impacts to the receiving environment. Typically, a closure plan includes placing final cover over the landfill to prevent water (surface water and precipitation) from infiltrating through the waste, diverting surface water away from the landfill cell, re-vegetating the landfill cover and decommissioning any buildings and facilities. A post-closure plan describes a long-term plan to maintain and monitor the closed site to verify whether the design features are working as designed and protecting the environment. Some aspects of closure and

post-closure, such as groundwater and landfill gas monitoring, may be incorporated into the design or operation of a facility.

Typically, these plans need to be submitted for review by the Land and Water Board a minimum of six months prior to carrying out the work outlined in the plan, but your water licence may specify a different requirement.

Has an **interim closure and reclamation** plan been completed for the SWF? (This plan may be required for closure activities prior to final closure of the entire site.)

○ Yes ◉ No

If yes, please provide the following information for the plan:

Prepared by (name of company or person that wrote the plan):

Title of document:

Completion date:

Location of document (where is the plan kept, or where can a copy be obtained?):

Has a **final closure and reclamation** plan been completed for the SWF? (This plan is required prior to final closure of the facility.)

○ Yes ◉ No

If yes, please provide the following information for the plan:

Prepared by (name of company or person that wrote the plan):

Title of document:

Completion date:

Location of document (where is the plan kept, or where can a copy be obtained?):

The Mackenzie Valley Land and Water Board

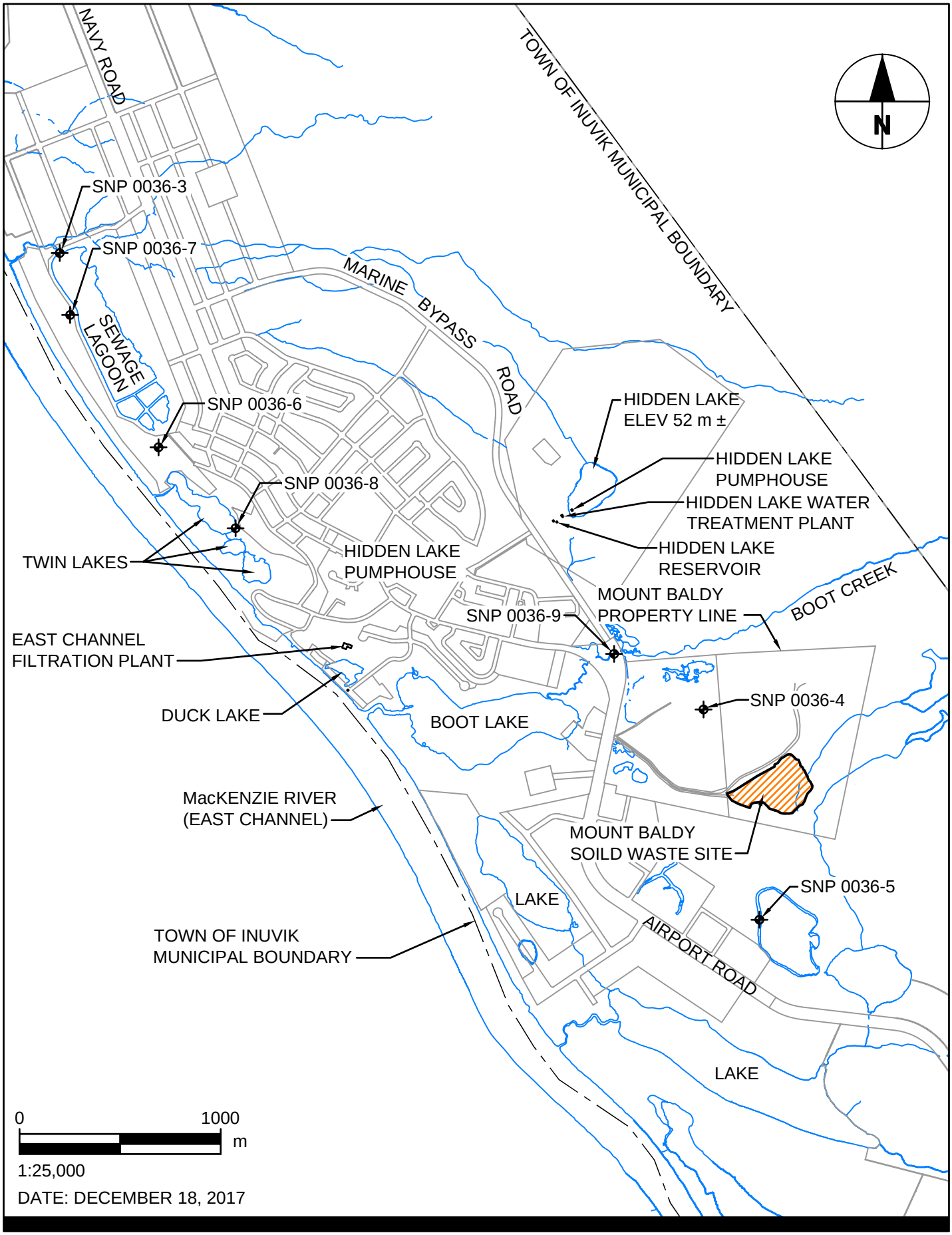
www.mvlwb.com

Box 2130
7th Floor - 4922 48th Street
Yellowknife, NT X1A 2P6

Phone: (867) 669-0506
Fax: (867) 873-6610

Appendix B

Figures



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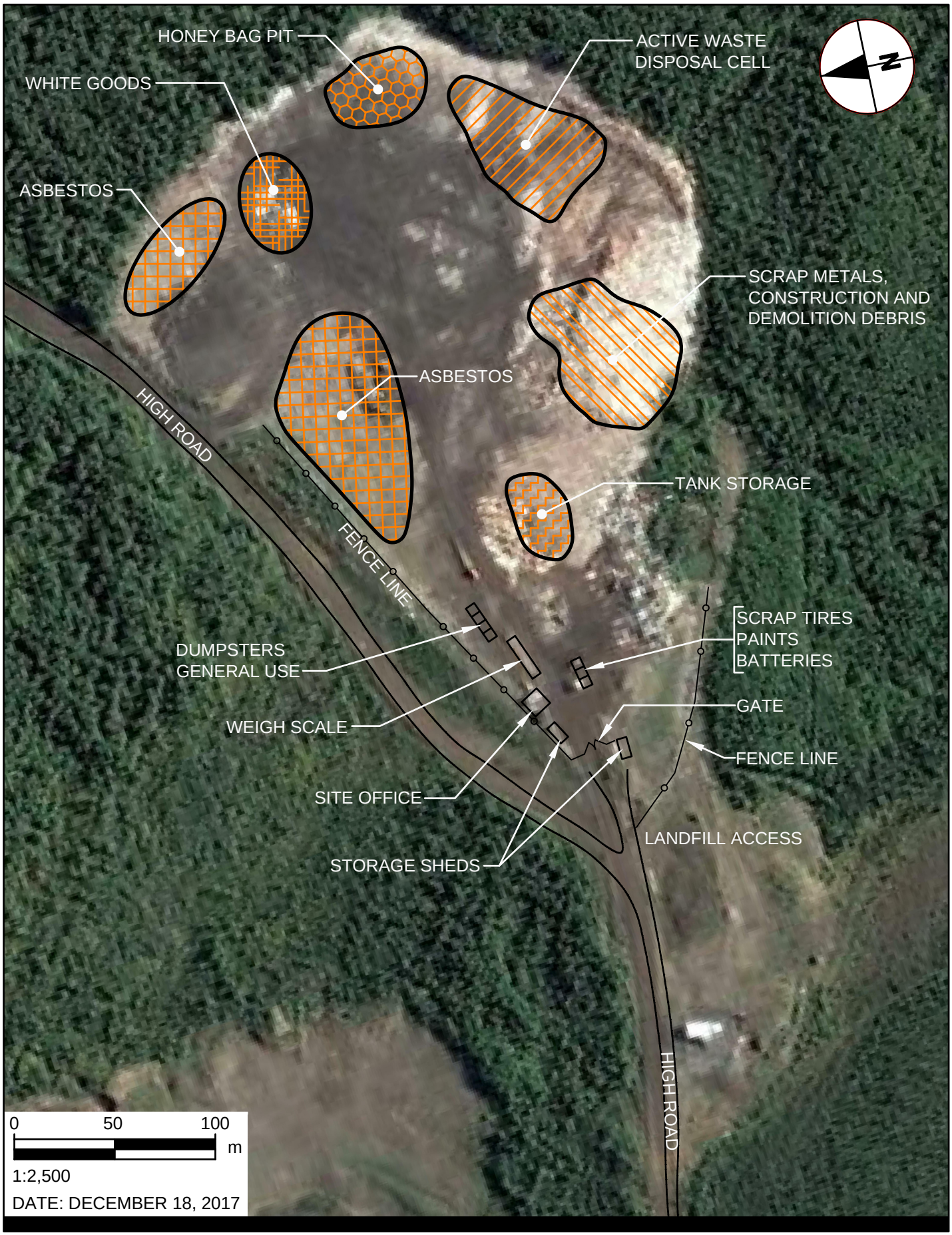
Project Management Initials: Designer: U.A. Checked: J.H. Approved: J.H. ISO A4 297mm x 210mm

SOLID WASTE LANDFILL FACILITY SYSTEM
MOUNT BALDY SITE
TOWN OF INUVIK, N.W.T.
Project No.: 60547247

GENERAL LOCATION PLAN
AND
SNP STATIONS LOCATION

AECOM

Figure: 1



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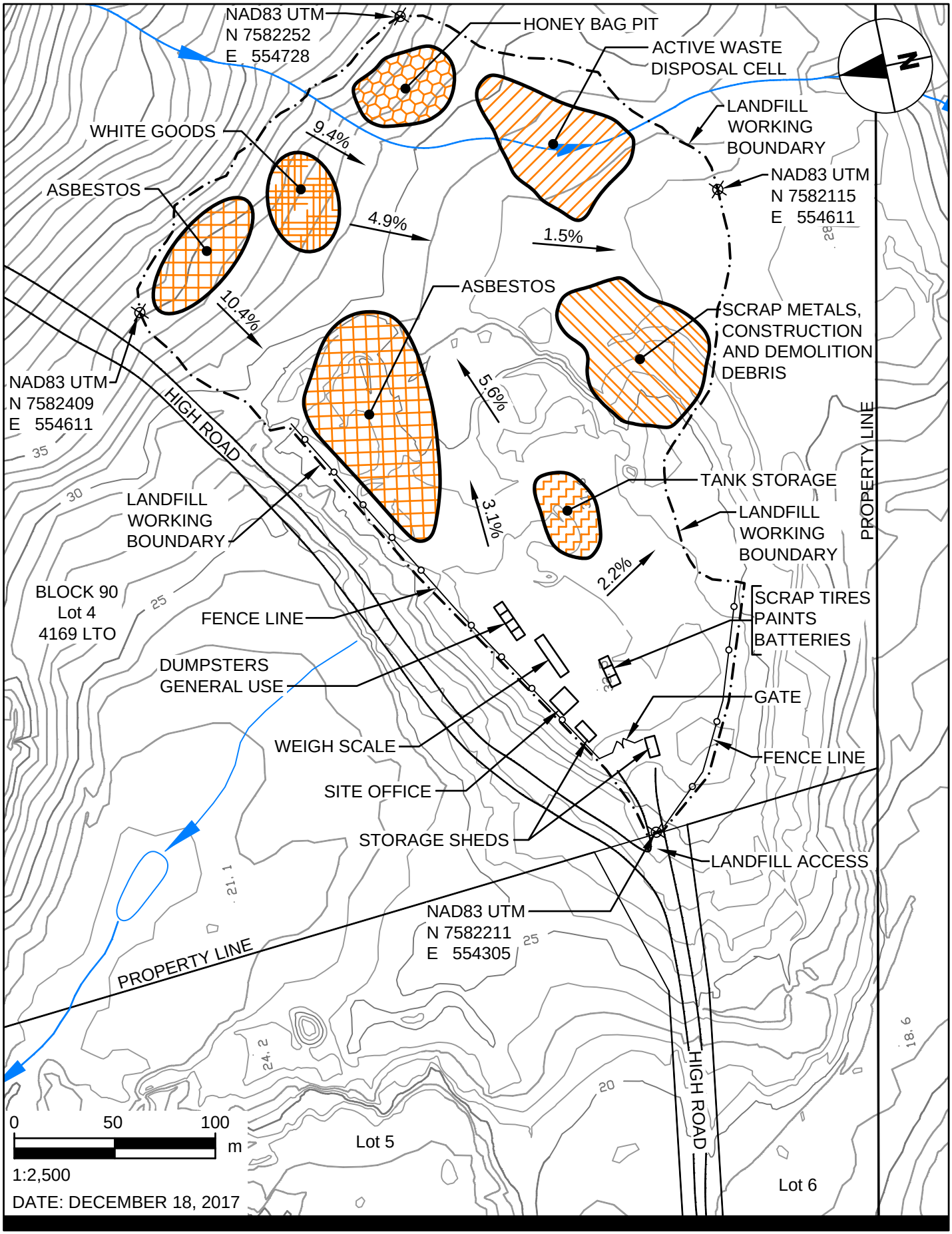
Filename: P:\60547247\900-CAD_GIS\910-CAD\20-SHEETS\C\01 SOLID WASTE 2017\FIGURES\60547247_2017 FIGURE 2 SITE LAYOUT PLAN.DWG
Project Management Initials: Designer: U.A. Checked: J.H. Approved: J.H. ISO A4 297mm x 210mm

SOLID WASTE LANDFILL FACILITY SYSTEM
MOUNT BALDY SITE
TOWN OF INUVIK, N.W.T.
Project No.: 60547247

SITE LAYOUT PLAN

AECOM

Figure: 2



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Filename: P:\60547247\900-CAD_GIS\910-CAD\20-SHEETS\C\01 SOLID WASTE 2017\FIGURES\60547247_2017 FIGURE 3 NATURAL_SITE DRAINAGE.DWG
Project Management Initials: Designer: U.A. Checked: J.H. Approved: J.H. ISO A4 297mm x 210mm

SOLID WASTE LANDFILL FACILITY SYSTEM **NATURAL SITE DRAINAGE**
MOUNT BALDY SITE
TOWN OF INUVIK, N.W.T.
Project No.: 60547247

AECOM

Figure: 3

Appendix C

Contact List

Inuvik Municipal Solid Waste Contact Information		
Name	**Position**	**Phone Number**
Grant Hood	Senior Administrative Officer	867.777.8608
Rick Campbell	Municipal Services Manager	867.777.8615
Jessi Harder	Landfill Operator	867.678.5830
Emergency Contact Information		
Fire Department		867.777.2222
Police (RCMP)		867.777.1111
Inuvik Fire Department		867.777.2222
Medical (Inuvik Regional Hospital)	Emergency Department	867.777.8160
Advanced Medical Solutions	Ambulance	867.777.4444
Hazardous Waste Spill (24 hr)		867.920.8130
GNWT Environment Protection		867.678.6695
Other Contact Information		
Town of Inuvik Public Works		867.777.8600
GNWT Environmental & Natural Resources		867.678.6698
GNWT Environmental Protection, Inuvik		867.678.6695
Gwich' in Land and Water Board	Regulator	867.777.4954
AECOM (Yellowknife)	Consultant	867.873.6316
AECOM (Edmonton)	Consultant (Jordan Hoffart)	780.486.7000

Appendix D

Landfill Policies

Policies

1. Administrative Record Keeping
2. After Hours Policy
3. Asbestos Handling Policy
4. Automobile Batteries Policy
5. Empty Container Policy
6. Environmental Policy
7. Fire Policy
8. Key Policy
9. Last Man Out Policy
10. Litter Control Policy
11. Non-Smoking Policy
12. Ozone Depleting Substances management Policy
13. Prohibited Waste Policy
14. Propane Bottle Policy
15. Public Access hours of Operations Policy
16. Random Load Checking Program Policy
17. Spill Response Policy
18. Tipping Fees Policy
19. Vehicle Accident Response Policy
20. Visitor Record Policy
21. Wash Up Policy

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Administrative Record Keeping	**Page:** 1 of 1

Purpose:

To outline the requirements for administrative record keeping.

POLICY:

Records shall be kept of all operational activities including:

- Daily Log
- Scale records
- Waste Screening
- Random Load Visual Inspection Reports
- Monthly Site Operations Inspection Record
- Hazardous Material Load Checks
- All annual reports
- All accident and incident reports
- Public complaints
- Spill Reports
- All sampling reports

All records shall be kept by the Municipal Services Manager at the Town Office for at least the current and previous water licence. Digital copies are preferred and will be backed up regularly.

RESPONSIBILITIES:

1. The Landfill Operator will be responsible for generating all reports except for the Annual and Sampling reports, which are the responsibility of the Municipal Services Manager.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: After Hours Policy	**Page:** 1 of 1

PURPOSE:
To maintain control of access to the site after hours in order to minimize liabilities to the landfill.

POLICY:

1. Customers requesting access to the landfill outside of the established operating hours shall arrange for the time of access with the Municipal Services Manager.
2. The Landfill Operator shall be present at all times, when afterhours access is provided, they will remain on-site until the customer has left the site.
3. Customers requesting afterhours access shall pay an hourly rate of $ _____ to the Town for the period of time the employee is required at the site, with a minimum charge of 4 hours per entry, and shall pay the landfill tipping fee as set out in the Tipping Fees Policy.
4. The customer shall notify the Landfill Operator at least 4 hours in advance of requiring access to the site outside the established operating hours.

RESPONSIBILITIES:

1. The Municipal Service Manger will be responsible for scheduling any after hour access times with the customer and shall maintain a record of the customer and time incurred.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Asbestos Handling Policy	**Page:** 1 of 3

PURPOSE:
To provide guidance for acceptance and handling of asbestos.

POLICY:

The receiving and handing of asbestos waste shall be carried out in accordance with the following:

1. Asbestos waste must be handled in accordance with Canada's Transportation of Dangerous Goods Act and Regulations (TDGA/R).
2. Asbestos waste shall only be accepted upon prior notification of the Municipal Services Manager.
3. Asbestos may only be deposited in the area that has been prepared for the purpose of receiving asbestos wastes.
4. Every person directly or indirectly involved in the transportation, handling, or management of asbestos waste should take all precautions to prevent asbestos fibers from becoming airborne. Persons handling asbestos waste must wear protective disposable coveralls while handling the waste.
5. Asbestos should only be accepted as follows:
    a. Non-Friable Asbestos - Asbestos which is non-friable need not be packaged for disposal
    b. Friable Asbestos - All friable asbestos must be:
        i. Placed in a rigid, impermeable, sealed container of sufficient strength to accommodate the weight of the friable asbestos waste; or
        ii. Be double bagged within two six-mil polyethylene bags.
6. All containers and bags referred to above must be free from punctures, tears, and leaks and should be clearly labeled to identify the contents as asbestos as directed by the Asbestos Safety Regulations and other applicable regulations.
7. Bulk asbestos should be handled according to the following:
    a. Vehicles transporting bulk asbestos should be lined with six-mil polyethylene and covered in such a way as to prevent asbestos fibers and particulate from escaping;
    b. Bulk friable asbestos should be moistened to prevent the escape of asbestos fibers;
    c. The polyethylene liner used in the transportation of bulk friable asbestos waste should be disposed of along with the asbestos wastes; and
    d. Carriers must ensure when discharging a bulk load of asbestos from a vehicle that the polyethylene liner is completely discharged with the asbestos waste and that the liner remains closed so as to not allow any loose asbestos waste material to escape the disposal cell.
8. Unloading of friable asbestos should be carried out so that no loose friable asbestos waste or punctured, broken, or leaking containers or bags are landfilled. Any loose asbestos or broken, punctured, or leaking containers or bags should be double bagged in two six-mil bags immediately upon discovery.
9. At least 25 cm of cover material, other than garbage, must be placed over the asbestos waste in such a way that direct contact with the compaction equipment or other operating equipment is avoided. A final cover, which may include garbage, of at least 125 cm should be applied.
10. The surfaces of vehicles and reusable containers which have been in direct contact with friable asbestos waste should be thoroughly cleaned prior to leaving the disposal site. Only a minimum amount of water, as necessary to wet the asbestos fibers, should be used during cleaning.

TRANSPORTATION OF DANGEROUS GOODS (TDG) REQUIREMENTS FOR SHIPMENTS OF ASBESTOS WASTES

The requirements for the shipments of asbestos wastes are as follows:

1. A shipping document (weigh bill or bill of lading) must include:
    a. Date;
    b. Shipping document identification number;
    c. Name and address of consignor;
    d. Name and address of location of receiver (i.e. landfill site);
    e. Name of carrier (i.e. transporter of the waste);
    f. Description of dangerous goods in the following order:
        i. Shipping name (i.e. waste asbestos, White);
        ii. Primary dangerous goods classification (i.e. Class 9.1);
        iii. Product identification number (PIN number) (i.e. UN 2590 for chrysotile, UN 2212 for all others);
        iv. Packing group (i.e. III);
    g. Total mass or volume of asbestos wastes;
    h. Number of bags (if bagged);
    i. Type of placards;
    j. Number of placards;
    k. Emergency information; and
    l. Special handling instructions.

2. The classification information, shipping name, Class, PIN number and packaging group must be in the exact order (listed above) on the document.

    Other possible classifications for asbestos waste are:
    a. Asbestos, Blue, Class 9.1, UN 2212, packing group II; and
    b. Waste asbestos, Brown, Class 9.1, UN 2212, packing group II.

3. Placarding of the vehicle is required for shipments of more than 500 kg.
4. The vehicle operator must have a valid Certificate of Training issued by the vehicle operator's employer.
5. Asbestos is not to be transported with any other cargo in the same vehicle.
6. Asbestos is not to be mixed with other types of wastes.
7. Asbestos is not to be transported in a compaction type of waste haulage vehicle.

NOTES:

Asbestos cannot be shipped as a "consumer commodity". Blue asbestos cannot be shipped as "limited quantity" or in a passenger vehicle. The maximum net quantity per package of White asbestos that can be transported on a passenger vehicle is 200 kg.

RESPONSIBILITIES:

1. Municipal Services Manager is to:
    a. Ensure that all employees are properly trained and equipped to carry out their tasks and responsibilities according to this procedure;
    b. Maintain a record of related training;
    c. Keep records of all required documentation and asbestos burial locations at the Town office;
    d. Liaise with those carriers or consignors who are in contravention of any Regulations;
    e. Fulfill any reporting requirements of the Federal and Provincial Acts and Regulations; and
    f. Ensure that all employees carry out their tasks and responsibilities in accordance with the Guidelines and Regulations, Northwest Territories Occupational Health and Safety (OH&S) Regulations, Environmental Legislation, and this Policy.

2. Landfill Operator is to:
    a. Visually inspect vehicles entering the landfill to determine contents for proper completion of documents as required by the Transportation of Dangerous Goods Act, confirm proper placarding of the vehicle carrying quantities of more than 500 kg of asbestos, and confirm that the asbestos is properly secured and/or packaged;
    b. Refuse acceptance of any loads where the asbestos is improperly packaged and shipping documentation is incomplete or incorrect;
    c. Refuse acceptance of any load of asbestos that may create a danger to the health or safety of landfill employees or the public;
    d. Direct accepted loads of asbestos to the designated disposal area on the landfill, and ensure generator is using a GPS system to record the exact coordinates of asbestos burial locations;
    e. Report any accidental release;
    f. Direct vehicles loaded with asbestos to the designated asbestos disposal area;
    g. Remain at least 100 metres from the discharge area when a vehicle is unloading asbestos;
    h. Ensure that public vehicles do not access the designated asbestos disposal area; and
    i. Ensure vehicle drivers properly discharge asbestos wastes.
    j. Record and sign off on all required documentation and keep record of the exact coordinates of asbestos burial locations.
    k. Submit all documentation and records to the MSM.

3. The Municipal Services Manager will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Automobile Batteries Policy	**Page:** 1 of 1

PURPOSE:
To establish the storage and management of automobile batteries for recycling.

POLICY:

1. Automobile and lead batteries will be accepted at the landfill from residents for recycling purposes.
2. Batteries will be placed in the hazardous wastes temporary storage area.
3. Batteries will not be accepted at the landfill from commercial businesses.
4. All efforts will be made to encourage landfill customers to separate batteries from other waste.
5. Batteries accepted for recycling will be stored:
    a. In an acid resistant container; and
    b. Covered with a tarp or plastic or placed in a weather-proof container.
6. Recycling of automobile batteries will be coordinated by the Municipal Services Manager in accordance with contractual agreements.

RESPONSIBILITIES:

1. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Empty Container Policy	**Page:** 1 of 1

PURPOSE:
To provide direction to the Landfill Operator for acceptance and management of empty containers.

POLICY:

1. Empty containers include:
   a. 45 gal drums;
   b. Grease and oil containers; and
   c. Other industrial containers.
2. Empty containers will only be accepted if:
   a. The top of the container has been removed; and
   b. The container has not been sealed.
3. Containers will not be accepted that:
   a. Are closed and sealed;
   b. The container holds any liquids; and
   c. Have not been rinsed.
4. The waste generator or hauler must provide a description of the previous contents of the container and identify if the container has been properly rinsed in accordance with the Northwest Territories Environmental Guideline for the General Management of Hazardous Waste.
5. The Landfill Operator may refuse acceptance of any container if the previous contents are not known or if the container has not been properly cleaned.
6. Empty containers that are recyclable will be stored in appropriate storage areas.
7. Empty containers that are not recyclable should be crushed and disposed of in the landfill.

RESPONSIBILITIES:

1. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Environmental Policy	**Page:** 1 of 1

PURPOSE:
To apply “best management” practices with regards to environmental protection.

POLICY:

1. The Senior Administrative Officer shall monitor and confirm that the landfill is managed using due diligence towards development and operations of the landfill in accordance with regulatory requirements and best management principles.
2. Utilities and Environment employees and Contractors will endeavour to work according to the operating principles as set out in this policy.
3. “Due diligence” is defined as “the taking of all reasonable steps as part of the due care and attention to prevent the occurrence of an accident or mishap, as well as having a contingency plan to control an incident and limit any consequential damage”. This includes: policy development, checking and corrective action, and management review.
4. Best management practices include:
    a. Good housekeeping
    b. Preventative maintenance
    c. Inspections and record keeping
    d. Security
    e. Employee hiring and training
    f. Reporting of incidents
    g. Operations procedures
    h. Emergency response planning
    i. Identification and assessment of risks
    j. Review and corrective action.

RESPONSIBILITIES:

1. The Municipal Services Manager will be responsible to conduct, or arrange for, routine inspections of the landfill, operating procedures, and records in regards to this policy.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Fire Policy	**Page:** 1 of 1

PURPOSE:

To set out emergency procedures for responding to a fire.

POLICY:

1. Upon discovery of fire at the landfill, the Landfill Operator shall call:
   - The Fire Department at 867-777-2222 immediately to report the fire, its location, and the materials that are burning
   - The Landfill Operator shall call the Municipal Services Manager immediately
   - Contact adjacent property owners, particularly if it appears the fire will go off-site
2. Remove all operating and non-operating persons to a safe location. All non-operating persons shall be escorted to the gates, and the entrance gates are to be closed.
3. Maintain access to the site for Emergency Vehicles throughout the duration of the emergency.
4. Clear the Fire area of all persons, vehicles, and equipment with due consideration to safety.
5. For small fires (i.e. little or no flame present and capable of being extinguished by a portable fire extinguisher), if safe to do so, isolate the burning material from other waste, then extinguish or otherwise contain the fire to one area.
6. If the fire is isolated from other wastes, the fire may be extinguished by either covering it with soil or by dousing it with water and/or snow and then covering it with soil.
7. If safe to do so, move flammable materials and wastes away from the fire **OR** cover these materials with soil to minimize the potential for the fire to spread to these materials.
8. **Do not bury any fire into the working area under any circumstances.**
9. Upon arrival of emergency response vehicles (Fire Truck, Ambulance) the senior staff members, e.g. Landfill Operator, on-site shall identify themselves to the Emergency Commander and offer full assistance as requested. Once the Fire Department arrives, the Fire Commander in is full control and landfill staff takes instructions from the Fire Commander.
10. The landfill operating staff are to remain at the site unless otherwise evacuated or released by the Fire Commander.
11. Following a fire, an incident report is to be completed and an investigation into the cause of the fire is to be conducted by the Municipal Services Manager.
12. Once the fire is extinguished and it is safe to do so, the waste and debris is to be cleaned up and the site operations returned to normal conditions.

RESPONSIBILITIES:

1. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Key Policy	**Page:** 1 of 1

PURPOSE:

To maintain control of key distribution for the Mount Baldy Community Solid Waste Landfill.

POLICY:

1. Keys for access to the landfill will be distributed to:
   - The Landfill Operator
   - The Municipal Services Manager

RESPONSIBILITIES:

1. The Municipal Services Manager will be responsible for controlling distribution and use of keys.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Last Man Out Policy	**Page:** 1 of 1

PURPOSE:

To maintain site control and security of the facility.

POLICY:

1. At the end of the day closure of the landfill, a "last man out" procedure shall be followed. The Landfill Operator shall:
   a. Remain at the site until all other employees, customers, and site visitors have left
   b. Close and lock the entrance gates
   c. Complete a complete drive through of the recycling compounds, working area, inert disposal area, and equipment area
   d. Check the working area and inert disposal area to make sure the area is secure and that no fires or other issues are present.
2. The Landfill Operator shall check the visitor registry to make sure all visitors have signed out.
3. Every effort will be made to confirm that no unauthorized vehicles or individuals remain at the site after it is closed for the day.

RESPONSIBILITIES:

1. The Landfill Operator will be responsible to carry out this policy.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Litter Control Policy	**Page:** 1 of 1

PURPOSE:
To define litter control methods and responsibilities.

POLICY:

In summary, the following litter control methods are to be followed:

- All delivered loads should be secured
- Compact waste as soon as practical after being deposited
- Position wind catchment fences according to the location and configuration of the working area and wind direction
- Retrieve litter as soon as practical following high wind events
- Collect litter as part of regular operations during the summer
- Immediately clean up and, if safe to do so, dispose of waste dumped illegally at the entrance gates or along access roads
- Regularly check ditches along adjacent roads and site access roads and pick up and dispose of spilled or blown litter as required.

RESPONSIBILITIES:

1. The Landfill Operator is responsible for controlling and litter retrieval of litter escaping from the working area and cleanup of litter along roads and surrounding areas.
2. The Landfill Operator is responsible for litter control and cleanup of litter in the recycling compounds.
3. The Municipal Services Manager is responsible for inspecting the landfill to monitor litter control and cleanup.
4. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Non-Smoking Policy	**Page:** 1 of 1

PURPOSE:

To prohibit smoking at the landfill facility.

POLICY:

No smoking is allowed by the staff, customers or visitors past the site office.

RESPONSIBILITIES:

1. The Landfill Operator will be responsible of enforcing the non-smoking policy.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Ozone Depleting Substances Management Policy	**Page:** 1 of 1

Purpose:

To prevent the uncontrolled release of Ozone Depleting Substances from appliances and equipment stored at the landfill.

POLICY:

1. In this policy, the term "units" applies to all household and commercial appliances and equipment that may contain Ozone Depleting Substances (i.e. CFC's) and may include refrigerators, freezers, and air conditioning equipment, and may also include automobile air conditioners.
2. All units will be inspected prior to acceptance for storage or disposal at the landfill. The Landfill Operator shall identify units that are tagged by a qualified technician indicating that the CFC's have been purged.
3. All untagged units accepted for storage at the landfill will be stored in an area separate from tagged units and will not be crushed, recycled, or disposed until they are inspected and purged by a qualified technician in accordance with the Ozone Depleting Substances Regulations and appropriately tagged.
4. Units that have been improperly deposited at the working area or at other locations at the landfill will be separated and inspected for appropriate tags and moved and stored in the appropriate area. In all cases where an untagged unit is identified, attempts will be made to identify the customer and if identified, the appropriate fee will be assessed.

RESPONSIBILITIES:

1. The Landfill Operator will be responsible for inspecting all units delivered to the site.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Prohibited Waste Policy	**Page:** 1 of 1

PURPOSE:

To define waste that is prohibited from disposal at the landfill.

POLICY:

Prohibited waste is all substances and materials listed below:

- Hazardous substances and waste (automotive fluids, fuel, antifreeze)
- Materials contaminated by hydrocarbons
- Contaminated Oilfield waste
- Untreated biomedical waste (as per CCME Guidelines for the Management of Biomedical Waste in Canada)
- Medical/infectious waste
- Radioactive waste
- Explosives
- Compressed gas/Air cylinders, unless the valves have been removed.
- Flammable items
- Herbicide/pesticide containers
- Water soluble solids (salt, borax, lye, caustics/acids)
- Septic tank or chemical toilet waste, with the exception of honey bags
- Mercury containing switches, relays and devices (thermostats, pilot light sensors, etc.)
- Bulk liquids as defined in the Prohibited Waste Policy
- Waste that is smoldering upon delivery (hot loads)

The Municipal Services Manager reserves the right to determine if a waste is acceptable at the landfill for storage or disposal. The prohibited waste may include soils or materials containing non-hazardous materials, such as those containing high concentrations of chlorides or other such constituents.

RESPONSIBILITIES:

1. The Landfill Operator shall be responsible to inspect loads for prohibited debris and to take necessary actions to prevent such waste from entering the landfill site.
2. The Landfill Operator shall be responsible for inspecting loads at the working area.
3. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Propane Bottle Policy	**Page:** 1 of 1

PURPOSE:

To provide guidance for the acceptance and handling of propane bottles.

POLICY:

1. Propane bottles will not be accepted at the landfill unless the container has been purged or emptied of its contents and the operating valve is in an open position, or the valve has been removed from the bottle.
2. If the operating valve is closed, the propane bottle will not be accepted.
3. Empty propane bottles will be disposed in the landfill.
4. Propane bottles will not be offered, given, or sold to any person for use, unless that person is qualified to refurbish and certify the propane bottle.

RESPONSIBILITIES:

1. The Senior Administration Officer will be responsible for reviewing and updating this policy

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Public Access Hours of Operations Policy	**Page:** 1 of 1

PURPOSE:

To limit public access to the landfill to a specified period of time.

POLICY:

1. The landfill gates will only be open for public access during the hours of operations as set out in this policy.
2. The hours of operations are:

Days	Times
Monday – Friday	**9:00 AM to 6:00 PM**
Saturday and Sunday	**1:00 PM to 4:00 PM**

3. The landfill will be closed during the following Statutory Holidays

New Year's Day (Jan. 01)	Civic Holiday (August)
Good Friday	Labour Day (September)
Easter	Thanksgiving Day
Victory Day (May)	Remembrance Day (Nov. 11)
Aboriginal Day (June)	Christmas Day (Dec. 25)
Canada Day (July)	Boxing Day (Dec. 26)
Civic Holidays declared by Inuvik Town Council	

RESPONSIBILITIES:

1. The Landfill Operator will be responsible for opening and closing landfill gate to the prescribed hours of operations.
2. The Municipal Services Manager will be responsible for the review of this policy and provide recommendations to the Senior Administrative Officer for any changes.
3. The hours of operations will only be set by the Senior Administrative Officer.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Random Load Checking Program Policy	**Page:** 1 of 2

PURPOSE:

1. To randomly inspect loads of waste being disposed at the landfill.
2. To detect hazardous or other prohibited waste material and avoid their disposal in the landfill.
3. To identify potentially recyclable material, which could be diverted from the landfill in the future.

POLICY:

1. Randomly select a load for inspection and ask the driver to stop in a designated area at the working face.
2. Record the following information using the Waste Screening Form and the Random Load Visual Inspection Form prior to allowing the driver to dump the load:
    - Name of hauler
    - Name of waste generator
    - Type of waste
    - License plate number
    - Truck number
    - Name of the driver
    - Signature of the driver
3. Ask the driver to dump the load in the designated area.
4. Spread out the waste, using a rake or front-end loader if required.
5. Record any potentially recyclable materials.
6. Inspect the load for hazardous or prohibited waste materials. If such materials are found, then do the following:
    - Isolate the waste and contact the Municipal Service Manager if the waste material poses an immediate risk to human health or the environment
    - Record the information on the Waste Screening Form
    - Take photographs of the material
    - Attempt to confirm information on the generator of the waste
    - Contact the hauler or generator of the waste material and require them to remove the material from the Landfill Facility
    - If the waste materials are considered hazardous, notify GLWB by telephone 867-777-4954 and the Hazardous Waste Spill Hotline at 867-920-8130.
7. Complete and sign the Waste Screening Form.
8. Send a letter to the generators of the recyclable materials advising that the material could be recycled in the future.

<u>Record Keeping</u>

1. A Waste Screening Form and a Random Visual Inspection Form will be completed for each load inspected and will be kept on file at the landfill and administrative offices.
2. If hazardous waste materials are identified, the Waste Screening Form and a summary of the action taken will be forwarded to GLWB, and the GNWT Environmental Protection (Inuvik).
3. Photographs of hazardous waste materials will be filed with the appropriate Waste Screening Form.

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Random Load Checking Program Policy	**Page:** 2 of 2

Safety Considerations

1. The Waste Inspector will wear the following safety clothing during inspections:
    - Coveralls
    - Safety boots
    - Gloves
    - Safety vest
    - Area mask as required
    - Eye protection

Inspection Frequency

1. One in every 300 loads, a minimum of two loads per month will be inspected.

RESPONSIBILITIES:

1. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Spill Response Policy	**Page:** 1 of 2

Purpose:

To establish appropriate procedures to follow in the event of a spill occurring on the landfill site including the active operations area, storage areas, in buildings or parking areas. This Spill Response Policy shall be reviewed annually and revised as necessary to reflect changes in regulations, operations, and technology. Any proposed revisions shall be submitted to the Gwich'in Land Water Board (GLWB) for approval.

POLICY:

1. Immediately close off and isolate (with a barricade if appropriate) the area of the spill to the public and site employees who are not directly involved in the clean-up of the spill.
2. Identify, if possible, the material involved in the spill. If the material cannot be clearly identified, take note of the nature of the material (i.e. liquid or solid, colour, odour, original container, approximate amount, presence of vapours or fumes, or any other distinguishing features).
3. Complete the Spill Response Form
4. Direct traffic away from the spill area.
5. The Landfill Operator shall coordinate the clean-up of the spill.
6. Control the source of the spill first then work on containing the spill using earth berms or other appropriate means.
7. For large spills, berm drainage ditches in the vicinity of the spill to prevent release of the material off-site.
8. Recover the spilled material and contaminated soils and deposit into an appropriate container for proper disposal. DO NOT HANDLE CHEMICALS.
9. For the spill of hazardous waste, call the 24-Hour Spill Report Line at 867-920-8130.
10. Conduct personal decontamination if a chemical is spilled upon a person:
    - Remove and dispose of contaminated outer coveralls or personal clothing
    - Utilize emergency eye wash and shower station if required
    - Re-dress in cloth coveralls or a change of clothes that is kept on hand
    - If contaminated clothing cannot be washed safely, discard it
11. If uncomfortable or hazardous fumes, bioinfectious, or radioactive materials are involved, follow evacuation procedures immediately and call Public Works at 867-777-8600. Explain to the emergency operator the situation, identify the material (if possible) and provide as much information about the substance as possible such as liquid, solid, colour, quantity, or odours, and the location of the material on the site.
12. If outside fuel or oil storage tanks leak, contact a vacuum truck operator to vacuum up the free liquid product and use a spill kit to clean up any residue. Oil or fuel soaked soil should be excavated and properly handled.
13. Advise the Municipal Services Manager immediately who is responsible for contacting the GNWT Environmental Protection, Inuvik location at 867-678-6695.

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Spill Response Policy	**Page:** 2 of 2

RESPONSIBILITIES:

1. The Senior Administration Officer shall be responsible for the review and update of this policy.
2. The Landfill Operator shall be responsible for carrying out spill containment in the active landfill operating area.
3. The Municipal Services Manager shall be responsible for advising Environmental Protection Service, as necessary.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Tipping Fees Policy	**Page:** 1 of 1

PURPOSE:

To establish tipping fees charged to customers for use of the landfill.

POLICY:

Town of Inuvik shall establish the tipping fee.

RESPONSIBILITIES:

3. The Municipal Services Manager will be responsible to review tipping fees and recommend alternate tipping fees to the Senior Administrative Officer.
4. The Town of Inuvik will be responsible for establishing the tipping fees.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Vehicle Accident Response Policy	**Page:** 1 of 1

Purpose:

To establish appropriate response in the event of a vehicle accident at the landfill site.

Policies:

All vehicle accidents should be reported and an investigation into the cause of the accident should be carried out. In the event of a vehicle accident, the following actions should be taken:

1. Alert the Landfill Operator of the accident.
2. If the damage to the vehicle(s) is minor, the Landfill Operator may instruct the individual(s) involved in the accident to report to the RCMP station.
3. If the damage is major, the Landfill Operator is to call the RCMP.
4. Secure the site for safety and for follow-up investigation.
5. Traffic is to be directed around the scene of the accident.
6. If the vehicle accident results in any injuries, the RCMP is to be notified and the injured person(s) should be provided with first aid, if appropriate.
7. Assist the authorities with any investigation that is undertaken.
8. Complete the Accident/Near Miss Form and report to Municipal Services Manager.

Responsibilities:

1. Landfill Operator responsible for implementing the Policy
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Visitor Record Policy	**Page:** 1 of 1

PURPOSE:

To maintain a record of site visitors for site safety.

POLICY:

1. In this Policy "visitors" means those persons that are non-customers and may include:
    a. Town employees and councillors
    b. Consultants
    c. Environmental Protection Service Inspector
    d. Gwich'in Land Water Board (GLWB) Officer
    e. Scheduled tour groups
    f. Other non-customers
2. All visitors will report to the Landfill Operator at the landfill scale office and will sign a visitor registry that includes the person's name, time of entry, and purpose of the visit.
3. All visitors will report to the Landfill Operator upon leaving the site and will initial and enter the time of departure on the visitor registry.
4. Prior to departure from the site, the Landfill Operator will check the visitor registry to make sure all visitors have signed out.

RESPONSIBILITIES:

1. The Landfill Operator will maintain the visitor registry.
2. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

TOWN OF INUVIK

	Policy No.
Facility: Mount Baldy Community Solid Waste Landfill	**Effective Date:**
Policy: Wash Up Policy	**Page:** 1 of 1

Purpose:

To establish appropriate hygiene for operations staff at the landfill.

POLICY:

Hands **MUST BE** thoroughly washed before handling or consuming **ANY FOOD OR BEVERAGE**. Food and beverage is to be consumed only in the area designated by the Landfill Operator, or **OFF-SITE**.

Hands must be thoroughly washed **BEFORE LEAVING** the landfill site for any reason, except in the case of an emergency when the site must be quickly evacuated.

Exterior clothing worn while working around any special wastes, such as asbestos, **MUST BE** removed prior to leaving the site.

RESPONSIBILITIES:

1. The Senior Administration Officer will be responsible for reviewing and updating this policy.

Approved By:	Date Approved:
Approved By:	Date Approved:

Appendix E

Forms

Forms

1. Accident / Near Miss Report
2. Spill Report Form
3. Daily Operations Log
4. Hazard Assessment Checklist
5. Hazardous Material Load Check Form
6. Monthly Site Operations Inspection
7. Visitor Log
8. Waste Screening Form
9. Scale Ticket

ACCIDENT/NEAR MISS REPORT
(Page 1 of 2)

Incident Date: _____ Time: _____

Location:
_____
_____

Name and Position of Person Making Report
_____

Name of individual(s) involved:
_____
_____

Driver's License No.(s) if required _____

Individual or Company _____ Phone No. _____

Did the Incident Result in Personal Injury? Yes _____ No _____

Injury report attached Yes _____ No _____
(i.e. Worker's Safety and Compensation Commission form or other applicable form)

Did the incident cause damage to Landfill or other property? Yes _____ No _____

Who investigated the Incident?

Supervisor _____ RCMP _____ Special Committee _____ HS&S _____

Contact Person(s) _____

Details of Equipment/Property Damage if Applicable

Damage was to: Vehicle Equipment Property

Description:

Unit No. Year Make Model

_____

_____

_____

Estimated Value of Vehicle/Equipment/Property _____

Estimated Damage to Vehicle/Equipment/Property _____

ACCIDENT/NEAR MISS REPORT
(Page 2 of 2)

Description of Incident (use attachment if necessary)

Incident Cause (use attachment if necessary)

Sketch of Incident Where Applicable (use attachment if necessary)

Recommendation to Prevent Re-occurrence (use attachment if necessary)

Comments (use attachment if necessary)

Name: _____ Signature: _____

Report Date _____

Distribution List:

SPILL REPORT FORM

Incident Date: _____ Time: _____

Location:
_____

_____

Name and Position of Person Making Report
_____

Name of individual(s) involved:
_____

_____

Driver's License No.(s) if required _____

Individual or Company _____ Phone No. _____

Nature of the Spill (use attachment if necessary)

Cause of the Spill (use attachment if necessary)

Sketch of Spill Where Applicable (use attachment if necessary)

Current Actions to Contain the Spill (use attachment if necessary)

Anticipated Time Frame to Correct the Problem (use attachment if necessary)

Comments (use attachment if necessary)

Name: _____ Signature: _____

Report Date _____

Distribution List:

DAILY OPERATIONS LOG

DATE: Day _____ Month _____ Year _____		
WEATHER: Precipitation _____ mm Temp. _____ °C Wind Speed: _____ km from _____		
DAILY WASTE RECORD:		
Received (in-bound)	_____ m^3	Estimated Volume Reduction by Compaction
Recycled (out-bound)	_____ m^3	_____ m^3
Other Materials (Type)	_____ m^3	
Other Materials (Type)	_____ m^3	
STAFF:		
Landfill Operator	Start: _____	Leave: _____
	Start: _____	Leave: _____
	Start: _____	Leave: _____
EQUIPMENT:		
Compactor	Hours: _____	Activity: _____
Compactor/Loader/Other	Hours: _____	Activity: _____
SITE MAINTENANCE: (i.e. litter, fences, roads, other)	Activities _____	Comments _____
SITE INSPECTIONS:	Observations	Action Taken or Required
Litter	_____	_____
Surface Water and Leachate	_____	_____
Cover	_____	_____
Final Cover	_____	_____
Compaction	_____	_____
MONITORING:		
SITE MAINTENANCE:	_____	
OTHER:	(Use back of form to note other activities.)	

HAZARD ASSESSMENT CHECKLIST
(Page 1 of 4)

Step 1: Fire Hazard Assessment Checklist		
Facility: _____		Date: _____, ____
Priority for Corrective Action	#1 high risk #2 moderate risk #3 low risk #4 no risk #5 not applicable	

Item	Identified Hazard	Status (Priority)	Safety Hazard and Location
Fire Safety			
1	Employee training		
2	Employee knowledge		
3	On-site communications		
4	Off-site communications		
5	Water supply		
6	Site security		
7	Fire safety plan		
8	Fire drills		
Storage of Materials			
1	Compressed Gases		
2	Aerosols		
3	Dangerous goods		
4	30 m clearance of stored materials. From brush or forest		
5	6 m clearance of stored materials. From uncontrolled grass or weeds		
6	Fire Dept. access		
7	Fencing/Security		
8	Access to water		
9	Lumber storage		
10	Wood chips, hogged materials.		
11	Used Tire Storage		
12	Compressed gases		
13	Fire breaks		

HAZARD ASSESSMENT CHECKLIST
(Page 2 of 4)

Step 2: Fire Safety Hazard Assessment Corrective Action				
Facility:			Date	
Assessment Team			Persons	Position
Item	**Priority**	**Recommended Action**	**Follow-up**	
			Action taken Date/Time	**By whom?**
Municipal Services Manager Signature:			Date:	

HAZARD ASSESSMENT CHECKLIST
(Page 3 of 4)

Step #3	**Health and Safety Hazard Assessment Checklist**		
Facility		Date/Time:	
Priority Status	#1 very hazardous, previous accident of high potential #2 hazardous with moderate risk #3 low risk #4 O.K. #5 not applicable (N/A)		
Item #	**Identified Hazards**	**Status/Priority**	**Safety Hazard and Location**
1	Housekeeping		
2	Material Storage		
3	Waste disposal		
4	Lighting		
5	Ventilation		
6	Extreme Temperature		
7	Radiation exposure		
8	Gas (toxic or non-life supporting)		
9	Flammables (Fire/Explosion)		
10	Dangerous Pressure		
11	Chemicals		
12	Hazardous Materials (WHMIS)		
13	High Risk Positioning		
14	Electrical Hazards		
15	Overhead Hazards		
16	Underground Hazards		
17	Confined Space Entry		
18	Excavations		
19	Restricted Access/Egress		
20	Ladders		
21	Work at Heights		

HAZARD ASSESSMENT CHECKLIST
(Page 4 of 4)

Step #3	**Health and Safety Hazard Assessment Checklist**		
Facility		Date/Time:	
Priority Status	#1 very hazardous, previous accident of high potential #2 hazardous with moderate risk #3 low risk #4 O.K. #5 not applicable (N/A)		
Item #	**Identified Hazards**	**Status/Priority**	**Safety Hazard and Location**
23	Work over water		
24	Major lifts (hoisting)		
25	Vehicles		
26	Mobile equipment		
27	High traffic		
28	Power tools		
29	Permits		
30	Communications		
31	First Aid		
32	Personal Protection Equipment		
33	Other items		
Municipal Services Manager Signature:			Date:

HAZARDOUS MATERIAL LOAD CHECK FORM

Location _____

Date _____

Time _____

Vehicle Description & I.D. _____

Vehicle Operator _____

Waste Source _____

The following noteworthy items were found during this inspection:

Material Description	Container (i.e. Drum)	Quantity (i.e. kg/litre)	Remove to (Location)	Removed by (Name)

Comments and follow-up:

_____

_____

_____

_____

Landfill Operators contacted: Time _____ Date _____

Name of person conducting inspection: _____

MONTHLY SITE OPERATIONS INSPECTION
(Page 1 of 3)

Date: _____ **Inspector:** _____

A: Acceptable, U: Unacceptable

No	Item	A	U	COMMENTS
1.0	**PERMITS AND APPROVALS**			
1.1	NWT Water Board Approvals			
1.2	Other			
2.0	**RECORDS**			
2.1	Survey and Site Plans			
2.2	Waste Volumes			
2.3	Daily Operating Logs			
2.4	Monitoring Reports			
3.0	**PERSONNEL TRAINING AND CERTIFICATION**			
3.1	Landfill Operator			
3.2	First Aid			
3.3	Work Place Safety (OH&S)			
3.4	WHMIS			
3.5	Other			
4.0	**DESIGN AND OPERATION AND MAINTENANCE PLAN**			
4.1	Site Development Plan current			
4.2	Operations Procedures & Policies Current			
4.3	Construction/As-built records			
5.0	**PERSONNEL, OPERATING EQUIPMENT AND FACILITIES**			
5.1	Landfill Operator			
5.2	Support Personnel			
5.3	Staff Facilities			
5.4	Equipment Facilities			
5.5	Communication equipment			

MONTHLY SITE OPERATIONS INSPECTION

No	Item	A	U	COMMENTS
6.0	**ENTRANCE AND ROADWAYS**			
6.1	Site Appearance			
6.2	Entrance Road			
6.3	On-site Access Roads			
6.4	Road Surfacing			
7.0	**SITE DEVELOPMENT**			
7.1	Cell Construction			
7.2	Cell Containment			
7.3	Cover Soil			
7.4	Aggregate/Soil Stockpiles			
8.0	**ACTIVE WORKING AREA**			
8.1	Vehicle Staging/Safety			
8.2	Working Area			
8.3	Waste Compaction Density			
8.4	Cover Frequency			
8.5	Surface Water Controls			
8.6	Litter Controls			
8.7	Other			
9.0	**INACTIVE SLOPES**			
9.1	Cover (300 mm of soil)			
9.2	Drainage and Grading			
9.3	Erosion Controls			
10.0	**COMPLETED AREAS**			
10.1	1000 mm soil layer			
11.0	**SURFACE WATER MANAGEMENT**			
11.1	Working area controls			

MONTHLY SITE OPERATIONS INSPECTION
Page 3 of 3

No	Item	A	U	COMMENTS
12.0	**ENVIRONMENTAL MONITORING AND CONTROLS**			
12.1	Annual GLWB Report on file			
12.2	Litter Management			
12.3	Animal Management			
12.4	Dust Management			
13.0	**RECYCLING FACILITIES**			
13.1	Tires			
13.2	Metals			
13.3	White Goods			
13.4	Batteries			
13.5	Paint			
13.6	Household Hazardous Waste			
13.7	Others			
14.0	**SAFETY**			
14.1	Employee Safety Practices/Issues			
14.2	Customer Safety Practices/Issues			
14.3	Equipment Backup Alarms			
14.4	Documentation			
15.0	**EMERGENCY RESPONSE**			
15.1	Medical Emergency Response			
15.2	Fire Response			
15.3	Environmental Response			

RANDOM LOAD VISUAL INSPECTION REPORT

Date: _____	**Time:** _____ AM / PM
Inspection Conducted by: _____	
Hauler: _____	**Vehicle Operator:** _____
Vehicle Description:_____	**Source of the Waste:** _____
General Description of the Waste: _____	

Composition	Estimated Percent of Total Volume	Actions or Follow-up Taken
Food Waste		
Cardboard		
Paper Products		
Plastics		
Textiles/Rubber/Leather		
Metals		
Ceramics/Bricks		
Dirt and rocks		
Ashes		
Yard wastes		
Wood wastes		
Glass		
Tires		
Drywall		
Oils or greases		
Glycol		
Paints/Solvents		
Pesticides		
Cleaning Products		
Ozone Depleting Substances		
Electrical Equipment		
Radio-Active Materials		
Other (NOTE TYPE)		

VISITOR LOG

Date	Name	Representing	Time In	Time Out	Signature	Reason for Visit

WASTE SCREENING FORM

GENERAL INFORMATION

Date and Time:
Transporter Name:
License Plate No.:
Source of Waste:
Transporters Waste Description: - -

WASTE INSPECTION OBSERVATION (Completed by Landfill Personnel)

Observation	Yes or No	If yes, explain
Hazardous Waste Labels or Placards		
PCB Transformers, Labels or Placards		
Unrinsed Pesticide Containers		
Bulk or Containerized Liquids		
Free Liquids Present (i.e. oil)		
Sludges, Pastes or Slurries		
Powders, Dust, Smoke or Vapours		
Petroleum Odours		
Lead-Acid Batteries		
Unusual Odours		
Cylinders		
Paint		
Freon Items (fridge, freezer)		
Metal		
Wood		
E-Waste		
Other Suspicious Items		
Waste Accepted		

If waste was rejected, explain why: _____

_____

What happened to rejected waste? _____

_____

_____ _____

Signature of Landfill Personnel **Date**

SCALE RECORDS

Facility: Mt. Baldy Landfill

YEAR: 2018

Note: In the comment area, provide account of tires, white goods and other relevant information.

Date (mm/dd/yyyy)	Time	Customer	Vehicle Weight in (tonnes)	Vehicle Weight out (tonnes)	Weight of waste (tonnes)	Type of Waste	Comments
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