

From: [Amanda Gauthier - MVLWB](#)
To: "Shannon Hayden - MVLWB"; permits@mvlwb.com
Cc: anne@mvlwb.com
Subject: FW: Hay River Water Licence MV2009L3-0005 Review
Date: Wednesday, October 07, 2009 2:52:15 PM
Attachments: [10-07-09 - ENR Letter to Board - Town of hay River - MV2009L3-0005 - MVLWB Request for Comments.docx](#)
[10-07-09 - EP Hazardous Waste Management Guideline - Town of Hay River - MV2009L3-0005 - Attachment to Coordinated Comments.docx](#)

From: Patrick Clancy [mailto:Patrick_Clancy@gov.nt.ca]
Sent: Wednesday, October 07, 2009 2:45 PM
To: anne@mvlwb.com; Amanda Gauthier - MVLWB
Subject: FW: Hay River Water Licence MV2009L3-0005 Review

Angela is out-of-office, so I will forward these comments to both of you.

Thanks,
Patrick Clancy
Environmental Regulatory Analyst
Environmental Assessment and Monitoring
Environment and Natural Resources
GNWT
Work: (867) 920-6591
Fax: (867) 873-4021

From: Patrick Clancy
Sent: Wednesday, October 07, 2009 2:42 PM
To: 'Angela Plautz'
Subject: Hay River Water Licence MV2009L3-0005 Review

Hi Angela,

Please find attached ENR's comments on the subject application with attachment.

Thank you,

Patrick Clancy
Environmental Regulatory Analyst
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Work: (867) 920-6591
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October 7, 2009

Angela Plautz
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT
X1A 2P6

Dear Ms. Plautz,

**Re: Town of Hay River
 Water Licence – MV2009L3-0005
 Request for Review and Comments**

The Department of Environment and Natural Resources (ENR) has reviewed the above noted project based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act* and the *Wildlife Act* and provides the following comments and recommendations for consideration by the Board.

General Concerns – Water Licence Scope

It is unclear to ENR if the scope of current Water Licence Application is for the use of the existing Solid Waste Disposal Facility or whether or not the new application is applying for a new location for a Solid Waste Disposal site. ENR notes that no information is provided with respect to the lifespan of the site; therefore, ENR assumes this information is unknown. Without a projected lifespan for the site, any plans, activities and associated timelines for a new site are unclear, and are not demonstrated as adequately planned and coordinated.

Subsequently, ENR provides the following information requests:

1. Is the intent of the current Water Licence renewal to maintain and operate the existing Solid Waste Disposal Site for the duration that the licence granted?
2. If the answer to question (1) is yes, then please provide information that demonstrates the proposed Water Licence Term is consistent with the projected lifespan of the current site.
3. If the answer to question (1) is no, then please demonstrate that potential new locations for a new Solid Waste Disposal Site have been proposed and identified for consideration.

Additional Studies

Desired End Result: To ensure adequate planning is in place to deal with current and future waste disposal requirements for the Town of Hay River.

Project Specific Concerns and Context:

It is the understanding of ENR that the lifespan and remaining capacity of the Solid Waste Disposal Facility is unknown. ENR is concerned that the solid waste disposal requirements of the Town could be compromised in the future should the site unexpectedly reach capacity. This in turn could lead to otherwise avoidable adverse environmental impacts.

Recommended Term or Condition:

- It is assumed that a projected lifespan study has not been completed; therefore, ENR recommends that the Proponent undertake studies to determine the remaining capacity and the projected lifespan of the Solid Waste Disposal Facility. Further to this, that these studies be submitted to the Board for review and approval by a Technical Advisory Committee.

Closure and Reclamation

Project Specific Concerns and Context:

Answers provided by the Proponent in questions contained in the Water Licence Questionnaire, refer to the Operations and Maintenance Manual (O&M Manual) for further information on a Closure and Reclamation Plan¹. However, the O&M Manual provided with the Water Licence Application contains no information regarding a Closure and Reclamation Plan.

ENR is concerned that if study shows that the Solid Waste Disposal Facility is relatively close to reaching capacity, a Closure and Reclamation Plan must be

¹ Page 18, Section 6.5, Municipal Water Use Questionnaire, Hay River WL Application MV2009L3-0005.

developed in a timely and approved manner, otherwise avoidable adverse environmental impacts may occur.

Recommendation:

- ENR recommends that the Proponent provide the previously discussed Closure and Reclamation Plan.

Waste Segregation

Desired End Result: To ensure proper organization and segregation of wastes at the site, and increased control of dumping.

Project Specific Concerns and Context:

ENR notes there is poor waste segregation at the dump and poor signage. In order to help rectify the situation ENR recommends proper signage and waste segregation.

Recommended Term or Conditions:

- The Licensee shall erect signage identifying the locations of the Ex-filtration lagoon and associated wetland areas, Municipal Solid Waste Trenches, Segregated Waste Areas (including Hazardous Waste and Contaminated Soil Remediation areas), and Recyclable Waste Areas. The signage will be located and maintained to the satisfaction of the Water Licence Inspector and the Board.
- The Licensee shall create and maintain waste segregation areas to the satisfaction of the Board and the Water Licence Inspector for:
 1. Municipal Solid Waste
 2. Household Hazardous Wastes
 3. Soil Remediation Facility
 4. Bulky waste (including ODS recovered appliances, tires) and scrap metal
 5. Construction/Wood Waste
 6. Recyclable material area
- The Licensee shall update signage at the gated entrance of the Solid Waste Facility to reflect hours of operation noted in section 3.1 of the *Operation and Maintenance Plan for the Town of Hay River* as the current signage does not reflect hours of operation quoted in this plan.

Fencing – Wildlife, Windblown Debris, and Unauthorized Access

Desired End Result: To extend the current fencing around the site to deter animal attraction and scavenging, prevent unauthorized personnel from entry and to help contain windblown debris.

Project Specific Concerns and Context:

- There are serious issues with bear attraction and habituation at the Solid Waste Disposal Facility, especially in the Hazardous Waste Storage Area
- An ENR site visit noted large quantities of unauthorized waste being deposited in the municipal/household solid waste area, mainly non-segregated construction and demolition waste. Hazardous materials were observed amongst the construction and demolition waste.
- An ENR site visit also noted issues with windblown debris

Recommended Term or Conditions:

- The Licensee shall erect and maintain, to the satisfaction of the Water Licence Inspector, permanent fencing surrounding the current Ex-filtration lagoon.
- The Licensee shall erect and maintain, to the satisfaction of the Water Licence Inspector, fencing around the perimeter of the Solid and Sewage Waste Disposal Facility that is capable of deterring wildlife and unauthorized personnel from entering this site.
- The Licensee shall erect and maintain, to the satisfaction of the Water Licence Inspector, appropriate fencing around the perimeter of the Hazardous Waste Storage Area that is capable of deterring wildlife and unauthorized personnel from entering this site.
- The Licensee shall erect and maintain, to the satisfaction of the Water Licence Inspector, fencing around the perimeter of the Soil Remediation Facility in order to delineate the boundaries of the lined area to ensure future contaminated soil deposits are contained within this area.
- The Licensee shall erect and maintain, to the satisfaction of the Water Licence Inspector, waste capturing fencing or devices, capable of being relocated as necessary, to prevent the spread of windblown waste to the areas surrounding the Solid, Liquid and Sewage Waste Disposal Facility.
- The Licensee shall maintain a gate at the entrance of the Solid and Sewage Waste Disposal Facility that is capable of being locked in order to regulate hours and prevent the entry of wildlife, and discourage unauthorized individuals from depositing unauthorized waste.
- The Licensee shall maintain an attendant during facility open hours to guide facility users to appropriate waste segregation areas, record waste deposits, and

prevent to deposition of unauthorized wastes. If this is not a feasible option, then establishing a key retrieval system, where facility users must retrieve a key to the gate and note what materials they will be tipping, would be a suitable alternative.

Timely Disposal of Municipal Solid Waste

Desired End Result: More frequent cover and ultimate disposal of accumulated municipal solid waste, via the trench disposal method, to reduce odours and prevent windblown debris

Project Specific Concerns and Context:

An ENR site visit in September 2009, noted extensive volumes of municipal (household) solid waste that had not been properly maintained, covered or disposed of in a timely manner.

Prolonged exposure of these wastes increases potential for windblown debris and animal scavenging as exposed waste produces odours that are attractive to wildlife. This increases the potential for wildlife habituation and human wildlife conflicts.

Recommended Term or Condition:

- The Licensee shall practice more frequent cover and maintenance of solid waste disposal trenches to prevent wildlife from being attracted to odours and decrease windblown waste.

Proper Recovery, Storage and Timely Shipment of Hazardous Wastes for Disposal

Desired End Result: Ensure proper sorting, labelling, storage and timely shipment of accepted household hazardous wastes at the Hay River Solid Waste Disposal Facility, and appropriate recovery of hazardous substances from appliances prior to placement in the waste stream.

Project Specific Concerns and Context:

An ENR site visit in September 2009 noted improper segregation and storage of various hazardous wastes, spills and evidence of animal scavenging within the Hazardous Waste Area.

Section 3.7 (*Hazardous Waste*) of the *Operation and Maintenance Plan for the Town of Hay River* does not specify shipping schedules or volume thresholds for waste quantities that would warrant shipping. This should be determined to ensure timely shipment of hazardous wastes.

In addition, during the September 2009 site visit, ENR noted a stockpile of appliances in the waste stream (refrigerators containing Ozone Depleting Substances (ODS)) that had not had ODS recovered from them. Many of the appliances were damaged, whereby hazardous substances contained within have the potential to be released to the receiving environment.

Recommended Term or Conditions:

ENR recommends that the Proponent develop a site specific Hazardous Waste Management Plan that identifies hazardous materials that will be accepted at the Solid Waste Disposal Facility, and the procedures for their management. Attached is a draft document, *Developing a Community Hazardous Waste Management Plan*, which ENR recommends for use by the Proponent as a guidance document to aid in developing the plan.

The Hazardous Waste Management Plan should also include or address the following:

- The Licensee shall install and maintain appropriate storage, fencing and (gated) access to the Hazardous Waste storage area.
 - Storage of Hazardous Wastes should provide protection from the elements (shelter) and prevent animal scavenging.
 - ENR recommends lining the Hazardous Waste Storage Area with an impermeable liner to act as barrier for any potential future leaks or spills that may occur.
- The Licensee shall keep and maintain inventory and records of accepted hazardous wastes, and ensure proper sorting, segregation and labelling of accepted wastes, and
- The Licensee shall provide hazardous waste quantity volume thresholds for determination of waste shipment to off-site disposal facilities, or provide a shipping schedule to ensure accumulated waste is shipped in a timely manner.

In addition, the Licensee shall ensure that accepted appliances that contain ODS, have the ODS recovered by the appropriate authority or contractor (e.g. Refrigerators with ODS) prior to deposition in the waste stream.

Comments and recommendations were provided by ENR technical experts in the Environment Division, Forest Management Division, Wildlife Division and the South Slave Region, and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM). Should you have any questions or concerns please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst, at (867) 920-6591 or patrick_clancy@gov.nt.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Clancy', written in a cursive style.

Patrick Clancy
Environmental Assessment Analyst
Environmental Assessment and Monitoring
Environmental and Natural Resources

Att: Developing a Community Hazardous Waste Management Plan

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Developing a Community Based Hazardous Materials Management Plan

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Developing a Community Based Hazardous Materials Management Plan

Introduction

Hazardous materials in Municipal Solid Waste Disposal Facilities (MSWDF) present a management problem. It is good practice to remove all quantities of hazardous waste from regular garbage. The goal of a hazardous waste management plan is to ensure that hazardous materials are managed in a manner that protects human health and the environment.

Some of the potential problems associated with hazardous, or unacceptable waste are as follows,

- Liability due to the release of contaminants,
- Liability to remediate contamination at solid waste site,
- Worker injury,
- Adverse reactions against facility from neighbors and general public.
- Charges under the *Environmental Protection Act*,

The objective of this document is to consolidate the Department of Environment and Natural Resources (ENR) regulatory requirements for hazardous waste in a decision making format that facilitates the development of community based hazardous waste management plans.

Regulatory Authority

The Environment Division (ED) of ENR is responsible for initiatives which control the discharge of contaminants and their impact on the natural environment. ENR is responsible for ensuring that environmentally acceptable management procedures, emission levels and disposal methods are maintained. By practise, ENR programs are applied primarily to Commissioner's Land, and lands administered by municipal governments or GNWT undertakings.

Section 2.2 of the *Environmental Protection Act* (EPA) gives the Minister of ENR of the Government of the Northwest Territories (GNWT) the authority to develop, coordinate and administer guidelines. ENR registers generators, carriers and receivers of hazardous waste and tracks the movement of hazardous waste to final disposal according to the Guideline for the General Management of Hazardous Waste¹. Guidelines for different wastes have been developed by ENR and are available at the following website.

(http://www.enr.gov.nt.ca/live/pages/wpPages/Waste_Management_Program_publications.aspx).

- [Guideline for Agriculture Waste](#)
- [Guideline for Ambient Air Quality Standards for Sulphur Dioxide and Total Suspended Particulate](#)
- [Guideline for Biomedical Waste in the NWT](#)

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- [Guideline for Dust Suppression](#)
- [Guideline for the General Management of Hazardous Waste](#)
- [Guideline for Industrial Waste Discharges](#)
- [Guideline for Site Remediation](#)
- [Guideline on Ozone Depleting Substances and Halocarbon Alternatives](#)
- [Guideline on Waste Antifreeze](#)
- [Guideline on Waste Asbestos](#)
- [Guideline on Waste Batteries](#)
- [Guideline on Waste Lead and Paint](#)
- [Guideline on Waste Paint](#)
- [Guideline on Waste Solvents](#)

The Used Oil and Waste Fuel Management Regulations allow used oil and waste fuel to be consigned to businesses with registered waste oil furnace the NWT. The regulations and plain language guide can be found at the following website.

http://www.justice.gov.nt.ca/PDF/REGS/ENVIRON_PROTEC/Used_Oil_and_Waste_Fuel_Mgmt.pdf
http://www.enr.gov.nt.ca/_live/documents/documentManagerUpload/Used_Oil_Guide.pdf

These guidelines do not replace the regulatory requirements of the communities water license or any other federal regulatory requirement.

Recordkeeping and Reporting

Municipal Governments are registered as hazardous waste receivers for the wastes they plan to accept, and generators for the hazardous waste they transport out of their Community disposal facilities.

Hazardous waste generators are required to track the movement of their waste on federally produced movement documents (waste manifest). The purpose of obtaining, and forwarding these documents is to ensure that waste is properly managed from generator to receiver. The information and documentation is also useful in determining and potentially avoiding liability if hazardous characteristics of waste are misrepresented.

Besides being a minimum regulatory requirement, maintaining the required recordkeeping and documentation is a prudent management practice. A sample movement document and user guide can be found in Appendix I.

Hazardous Waste Categories

Clearly stating the hazardous materials a MSWDF will, and will not accept provides direction for residents, businesses, industries, and government agencies.

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The decision to accept and not accept designated hazardous materials is best made by the municipal government. The municipal government knows the disposal needs of their community and the ability of their facilities to receive selected wastes and/or the ability of generators to transport hazardous materials outside the community.

Hazardous waste generated within a community is divided into two broad sectors;

- **Household Hazardous Waste (HHW) from residents,**
- **Institutional Commercial Industrial (ICI) hazardous waste.**

HHW

Residents generate hazardous waste from activities like vehicle maintenance, painting, cleaning, lawn and garden care. This type of waste is called household hazardous waste (HHW) and residents need a community based disposal option for the various types of waste generated. Disposal options can take the form of Retailer take back programs, HHW collection events, HHW pick-up request forms, or HHW drop off areas. Household hazardous waste is a very diverse waste stream and requires close attention to existing Acts and Regulations to handle them accordingly. There are public safety and law enforcement considerations when unexpected chemicals and products are brought to HHW collection events. Please reference the community based HHW guide for options related to managing HHW.

ICI Hazardous Waste

ENR registers Industrial, commercial, and Institutional (ICI) generators of hazardous waste and they are required to ensure their hazardous waste reaches registered receiving facilities, either in the NWT or other provinces. The Guideline for the General Management of Hazardous Waste outlines the roles and responsibilities of generators, carriers, and receivers of hazardous waste in the NWT. Design and control considerations and requirements for municipal waste management facilities are of a different scale and nature than those required for industrial waste management facilities

Outsourced Industrial Waste and Third Party Waste Disposal in Municipal Facilities

Municipal/community facilities are not designed, operated, licenced, and financed to accommodate the complex treatment, storage, and disposal requirements for waste streams originating from Industrial wastes sourced from outside the communities. These outsourced industrial wastes will often require complex and specialized treatment and disposal options that may require transportation to facilities that are specially designed, managed and licenced for industrial waste treatment and disposal. The disposal of these industrial wastes in the community facilities transfers the economic and environmental costs and liabilities, and increased risks related to the presence of unknown contaminants to the communities and the GNWT. Community based contractors hired by outside industrial waste generators to haul and dispose of waste from operations located in areas under federal jurisdiction to nearby communities, can significantly impact the nature and volume of wastes coming into municipal disposal facilities.

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The primary purpose of municipal/community facilities is to accommodate the treatment, storage, and disposal requirements for waste streams originating from the community. These facilities are intended to be designed, operated, licenced, and financed for that purpose to protect the community and the environment from adverse environmental impacts that may result from community generated wastes. Existing Water Licences are scoped and issued for that purpose.

Hazardous Materials

The following materials are generated by both the ICI and residential sector. They are hazardous waste commonly encountered at disposal facilities.

- **Asbestos**
- **Batteries (Lead Acid)**
- **Glycols (Antifreeze, Heating Fluid)**
- **Heating Oil Tanks**
- **Household Hazardous Waste**
- **Hydrocarbon Contaminated Soil / Snow / Water**
- **Mercury Containing Materials**
- **Oil Debris**
- **Old Fuel**
- **Ozone Depleting Substances**
- **Paint**
- **Propane Tanks**
- **Residue fuel tanks/drums**
- **Used Oil**
- **Vehicles Containing Batteries, Fluids, Mercury Switches**

Asbestos

ENR recommends communities establish an Asbestos Disposal Protocol for asbestos generated by residents and the ICI sector within the community. Properly packaged Asbestos simply needs to be buried in a designated location, and disposal does not involve complex treatment methods. Further details can be referenced in ENR's Asbestos guidelineⁱⁱ.

Batteries (Lead Acid)

Batteries may be a liability in some NWT communities and have value in others depending on their access to scrap metal dealers outside the NWT. The primary method of managing batteries is storage (see Appendix II) until sufficient quantities make disposal feasible. Movement documents are required when receiving ICI batteries and when sufficient quantities warrant the movement of batteries from the community to registered receivers. Further details can be referenced in ENR's Battery guidelineⁱⁱⁱ.

Construction and Demolition Waste

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Construction and demolition waste is generated by both the residential and the ICI sector. There may be a variety of hazardous materials inside a building require removed prior to disposal. Screening methods need to be used to ensure that the hazardous materials are removed prior to disposal. The generators or building owners are responsible for the removal of materials listed in Appendix III prior to disposal.

Glycols (Antifreeze, Propylene Glycol)

Waste antifreeze (Ethylene Glycol) is generated by residents and the ICI sector from vehicle maintenance. Propylene glycol is more common to the ICI sector where it is used for heating larger buildings. Glycols can be recycled locally where facilities exist. The primary method of managing glycols is storage until sufficient quantities warrant disposal. Further details can be referenced in ENR's Antifreeze guideline^{iv}.

Heating Oil Tanks

Heating oil tanks are generated by residents and the ICI sector. Prior to disposal as scrap metal the tanks need to have the hydrocarbon residue cleaned out. They are best managed in a similar manner to empty fuel drums and tanks.

Household Hazardous Waste (HHW)

Household hazardous waste (HHW) is generated from residential activities like vehicle maintenance, household maintenance, and lawn and garden care. HHW collection has taken place in communities throughout the NWT in the last 20 years at different times. Regular collection events or plans have not been established for each community in the NWT. ENR's goal is to establish regular HHW events for each community in the NWT.

Household hazardous wastes are discarded materials (liquids, solid, and aerosols) which may harm human health and the environment. They require special treatment due to their hazardous characteristics such as being corrosive, flammable, reactive or toxic. Household hazardous waste is a very diverse waste stream such as the materials listed in Appendix IV.

Hydrocarbon Contaminated Soil / Snow / Water

Hydrocarbon contaminated (H.C.) soil/snow/water (materials) that result from spills or contaminated sites are managed as a hazardous waste in the NWT. This requires that H.C. materials be transported from registered generators via carriers to receivers according to the Guideline for the General Management of Hazardous Waste.^v

A soil remediation facility must be registered as a receiver with ENR as a waste management facility other than storage. The general guideline provides generic information on registering any treatment facility. Containment or storage is not a long term solution and hydrocarbon contaminated soils need to be treated and tested by

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an accredited third party to meet acceptable remediation criteria. ENR's main objectives are to ensure that the;

- contaminated materials are being tracked on federally produced movement documents prior to transport to the receiving facility.
- receiving facility is designed, and operated to prevent the release of contaminants.
- contaminated materials have been remediated prior to movement off the facility.

Specific guidance with respect to siting, plans, and operating a H.C. material treatment facility can be obtained by referencing the documents listed in Appendix V.

Mercury Containing Equipment

The GNWT is a signatory to *Canada-Wide Standards for Mercury Emissions* that mercury releases into the environment are slated for virtual elimination. Thermostat's, thermometers, and fluorescent lamps all contain mercury. Fluorescent bulbs are generated by residents and the ICI sector. ENR can provide assistance with training and equipment for the capture of the mercury vapour from fluorescent bulbs. Other types of mercury containing lamps (MCL's) like street lamps, high intensity discharge lamps from the ICI sector require specialized disposal methods. They require specialised disposal methods and should be screened out of community disposal facilities.

Oil Debris

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. They are generated by both the residential and the ICI sector. The proper segregation and storage of these materials can prevent the release of contaminants within the disposal facility.

Old Fuel

Residents generate old fuel from the use of gas powered equipment and require a local disposal option. The disposal of old fuel from residents can be facilitated by bulking it into UN approved steel drums at HHW collection events or on a daily basis. The decision to accept old 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 ICI sector.

Ozone Depleting Substances (ODS's)

ODS's are chemicals mainly used in air conditioning, refrigeration and fire extinguishing equipment. Alternatives to ODS's also make significant contributions to global warming and, therefore require management and control. Community disposal facilities do not typically discriminate between residential or ICI waste containing ODS's and apply a flat disposal fee for the costs associated with the recovery of ODS's. Technician's servicing equipment containing ODS's and halocarbon

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alternatives must be appropriately trained and follow acceptable servicing procedures as required by ENR's ODS guideline^{vi}.

Paint

Regardless of the type of paint, using it for the intended purpose is the preferred management method. The best disposal option for waste alkyd and speciality paint is to bulk it in UN approved 205 litre steel or plastic drums, in a condition suitable for shipping. Less than 5 litres of alkyd paint can be allowed to dry fully and taken to the landfill. Fully dried out quantities of latex paints may be disposed of at a landfill or placed in the garbage for collection. Paint can be air dried by spreading it out on a board, plastic sheet or other flat surface until all the liquid has evaporated. Consideration will be given to proposals for alternate management methods that provide a level of environmental protection equivalent to complying with the Waste Paint and Waste Lead and Lead Paint guidelines^{vii}^{viii}. Paint from the ICI sector can consist of chemicals not commonly encountered in the residential waste stream and require specialized treatment and disposal methods. Management of specialty coatings is determined by the hazard characteristics of each product as identified in the Material Safety Data Sheets (MSDS). Screening methods are required to keep ICI paint out of disposal facilities that require specialized treatment methods or accumulate in excessive quantities.

Propane Tanks

Propane tanks and aerosol cans are regulated as a dangerous good and are a potential explosion hazard at all times and are dangerous to disposal facility operators as well as the public. They are generated by residents and the ICI sector. Where facilities exist, propane tanks can be returned to the retailer or supplier for safe storage and transport. In many cases trained staff can safely evacuate the propane gas, and rendering the tanks safe for scrap metal. Large propane tanks and other compressed gas canisters from the ICI sector need to be screened out or they can become a liability for the community if allowed to enter disposal facilities.

Residue Fuel Tanks / Drums

Fuel storage tanks and drums are most frequently generated by the ICI sector. The water that is allowed to accumulate in empty drums that are stored over time is contaminated and needs to be treated prior to disposal. Empty drums should always be stored on their sides to prevent water from accumulating. Screening methods are required to prevent the collection of contaminated liquids inside residue drums. Prior to disposal as scrap metal the tanks/drums need to be cleaned according to ENR's drum disposal protocol that can be referenced in Appendix VI.

Used Oil

Used oil is generated by residents and the ICI sector and can be utilized as a feedstock for the purpose of heat recovery in the NWT according to the Used Oil and Waste Fuel Management Regulations^{ix}. Used Oil can be collected from residents

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and bulked in clearly labelled good quality tanks or drums. Screening methods are required to ensure the feedstock does not become contaminated with excessive amounts of glycol, solvents, or excessive volumes from the ICI sector. Used Oil must be tested prior to burning in a registered used oil furnace to ensure the feedstock meets the criteria set out in Schedule A of the regulations.

Vehicles

Old discarded vehicles contain antifreeze, batteries, fuel, mercury switches and other lubricating fluids that are hazardous waste and need to be removed. Ideally all the scrap metal including vehicles are removed from the disposal facility once sufficient quantities accumulate. Scrap metal dealers often accept vehicles and manage the hazardous materials at a cost. If scrap metal is not being removed from the community the hazardous materials from the vehicle need to be removed prior to disposal.

Storage, Packaging, Labelling

The storage of hazardous waste is not an acceptable long term waste management solution.

General Requirements for Storage Facilities

Hazardous waste must be stored in a safe and secure manner. In general, hazardous waste should be stored according to the following:

- Drainage into and from the site is controlled to prevent spills or leaks from leaving the site and to prevent run off from entering the site.
- Incompatible wastes are segregated by chemical compatibility to ensure safety of the public, workers and facility.
- In a secure area with controlled access. Only persons authorized to enter and trained in waste handling procedures should have access to the storage site.
- Regular inspections are performed and recorded. Containers are placed so that each container can be inspected for signs of leaks or deterioration. Leaking or deteriorated containers should be removed and their contents transferred to a sound container.
- Containers are of good quality suitable for the waste being stored
- Containers are labelled according to WHMIS and TDGR
- Maintain a record of the type and amount of waste in storage.
- Storage sites have emergency response equipment appropriate for the hazardous waste stored on site.
- Where the site is to be used for long term storage and the amount of waste in storage exceeds the quantity requirements set out in Schedule I, the site should be registered in accordance with Section 3.4 of the Guideline for the General Management of Hazardous Waste.

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- Storage sites are expected to meet all local bylaw and zoning requirements. It is recommended that the local Fire Chief be advised of the storage facility and its content for emergency planning and response purposes.

Off-Site Disposal

The responsibility for proper waste management rests with the generator and should be considered part of the cost of doing business.

Once the community has accumulated sufficient quantities of a hazardous waste to warrant off-site disposal the materials must be transported to appropriately registered receivers of hazardous waste. At this point the MSWDF becomes the generator and is required to track the consignment on federally produced movement documents (waste manifest).

When selecting a disposal company to handle hazardous waste consider the following criteria,

- They have a current registration number with the province or territory of destination,
- The materials are tracked on movement documents before the materials leave the site, and
- They are properly trained to handle dangerous goods according to Transportation of Dangerous Goods Regulations (TDGR).

The Environment Division will consider alternative management options that exist, including recycling.

Waste Segregation Training

The ability to recognize hazardous waste from non hazardous waste will facilitate the consolidation of hazardous wastes for transport to appropriately registered hazardous waste receiving facilities.

The comingling of hazardous wastes without proper segregation can lead to disastrous situations endangering human health and life. Suitable training for staff for all activities associated with the community disposal facilities will enhance worker and public safety.

ENR can provide assistance with segregation and characterization of materials through correspondence on a continual basis. ENR is also willing to assist at HHW collection events where larger volumes of HHW need to be segregated and packaged on site.

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Hazardous Waste Management Plan

A plan that clearly states the hazardous materials a MSWDF will, and will not accept from residents and/or the ICI sector provides direction for residents, businesses, industries, and government agencies.

In some communities a well established plan has already been used within a community for designated materials. A consistent format for developing a plan between communities can facilitate regional strategies for managing hazardous waste.

ENR requests that the O&M plan or a separate plan demonstrating how each of the following materials (listed on Page 5) are being managed within the MSWDF.

- **Asbestos**
- **Batteries (Lead Acid)**
- **Mercury containing equipment**
- **Glycols (Antifreeze, heating fluid)**
- **Heating Oil Tanks**
- **Household hazardous waste**
- **Hydrocarbon Contaminated Soil / Snow / Water**
- **Mercury containing lamps (MCL's)**
- **Oily Debris**
- **Old Fuel**
- **Ozone Depleting Substances**
- **Paint**
- **Propane Tanks**
- **Residue fuel tanks / drums**
- **Used Oil**
- **Vehicles containing batteries, fluids, mercury switches**

The community should define both acceptable and unacceptable wastes and it should be reviewed annually or more often as needed. Appendix VII contains a chart that summarizes waste management considerations for each of the materials listed above.

The following are steps the community should take in developing the hazardous waste management plan. It is recommended the community develop the plan using community based knowledge.

Asbestos

- I. *Will the MSWDF accept waste Asbestos from the residential sector?*
Y [] / N []
- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste asbestos?*
- III. *Will the MSWDF accept waste Asbestos from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

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- Location of burial within the facility
- Method of disposal
- Expected quantities
- Plan for record keeping, mapping, and reporting
- Contact for record keeping & reporting
- Tipping fee's associated with the management of waste asbestos from the residential and/or ICI sector.

Batteries (Lead Acid)

- I. Will the MSWDF accept waste batteries from the residential sector?
Y [] / N []
- II. If No, what other facilities exist within the community to facilitate the proper handling of waste batteries?
- III. Will the MSWDF accept waste batteries from the ICI sector?
Y [] / N []

If Yes to either I, or III the following information is required.

- Maximum amount of batteries to be stored at any one time.
- Methods used to
 - Store batteries
 - Secure access
 - Maintain a record of the amount of batteries in storage
 - Maintain regular inspections and record of inspections
- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting
- Tipping fee's associated with the management of batteries
- Plan for ultimate disposal

Construction and Demolition Waste

- I. Will the MSWDF accept construction and demolition waste from the residential and the ICI sector? Y [] / N []
- II. If No, what other facilities exist within the community to facilitate the proper handling of ICI construction and demolition waste?

If Yes the following information is required.

- Screening methods used to ensure hazardous materials are removed prior to disposal.
- Methods used to manage unacceptable waste inside the disposal facility.

Glycols (Antifreeze, heating fluid)

- I. Will the MSWDF accept waste glycols from the residential sector?
Y [] / N []

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- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste glycols?*
- III. *Will the MSWDF accept waste glycols from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

- Maximum amount of glycols to be stored at any one time.
- Methods used to
 - Store glycols
 - Secure access
 - Maintain a record of the volume of glycols in storage
 - Maintain regular inspections and record of inspections
- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting
- Tipping fee's associated with the management of glycols
- Plan for ultimate disposal

Heating Oil Tanks

- I. *Will the MSWDF accept waste heating oil tanks from the residential sector?*
Y [] / N []
- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste heating oil tanks?*
- III. *Will the MSWDF accept waste heating oil tanks from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

- Criteria for accepting heating oil tanks (e.g. cut in half, drained, steam cleaned, etc.)
- Methods used to clean tanks prior to disposal if disposal facility accepts uncleaned heating oil tanks.
- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting
- Tipping fee's associated with the management of waste heating oil tanks
- Plan for ultimate disposal

Household hazardous waste

ENR will assist communities with the development and promotion of adequate opportunities for residents to safely dispose of their hazardous waste. The promotion of hazardous waste reduction through public education is an integral part of hazardous waste collection activities.

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The form of hazardous waste collection can vary between communities with different populations and geographic locations. Below are three general forms, or combination of forms of collection that can be used to collect HHW from residents.

A. Daily Collection of HHW

Daily collection of HHW provides the best level of environmental protection because it provides residents the opportunity to dispose of the materials when it is convenient for them, especially if they are moving locations. It is strongly recommended that communities offer this service to the disabled people in the community. A HHW collection depot that is visible on a daily basis also reinforces the message that not all materials are safe for disposal in the open face of a landfill.

Daily collection requires trained staff to screen, segregate, label, and store the wide variety of HHW that residents generate. It also requires means of containment (pallets, drums, pails, bags, tanks, etc.) to be present on site at all times to properly store HHW until quantities warrant disposal.

B. HHW Collection events

HHW collection events can happen on a yearly, monthly, or weekly basis at the discretion of the community. In the past collection events have taken place in community parking lots or fire halls periodically throughout different regions in the NWT. These events can bring in larger quantities at one time but do not capture the HHW from residents that are moving or are away during the events.

C. HHW disposal request forms

HHW disposal request forms can be used by residents to give advance notice to the community and ENR that they have HHW needing disposal. By submitting a form to the community it allows disposal staff to research the product and prepare adequate space as well as means of containment to accept the waste. This method may be used in smaller communities where HHW quantities are low. It can also be used in larger communities as a supplement to collection events to assist people who are moving or for other reasons are not able to attend HHW collection events. (See Appendix VIII for a sample form)

The decision to not collect HHW may result in contamination of land and waters within your community. To assist your community with HHW collection, ENR requires the community to decide what form or combination of HHW collection forms is most suitable. Please consult the HHW program guide for more details.

- I. What form, or combination of forms of HHW collection will the community participate in?*

Hydrocarbon Contaminated (H.C.) Soil / Snow / Water

- I. Has the community developed a H.C. soil/snow/water treatment pad within it's disposal facility.*

Y [] / N []

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If no, are there alternate receiving facilities for H.C. soils in the community?

If yes, the following information is required,

- The supporting documentation that outlines the engineering details of the treatment pad.
- Criteria for accepting H.C. soil / snow / water(e.g. laboratory analysis, movement documents, etc.)
- Methods used to prevent drainage from entering or leaving the site
- Contact for record keeping & reporting
- Disposal fee's associated with the management of H.C. soil / snow / water.

Mercury containing equipment

- I. Will the MSWDF accept waste mercury containing equipment or fluorescent MCL's from the residential sector?*
Y [] / N []
- II. If No, what other facilities exist within the community to facilitate the proper handling of waste MCL's?*
- III. Will the MSWDF accept mercury containing equipment or waste fluorescent MCL's from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

- Methods used to
 - Store mercury containing equipment
 - Store fluorescent bulbs in dry conditions
 - Secure access
 - Maintain a record of the amount of bulbs in storage
 - Maintain regular inspections and record of inspections
- Methods used to prevent breakage of mercury containing equipment
- Contact for record keeping & reporting
- Tipping fee's associated with the management of mercury containing equipment.

ENR can provide assistance for the disposal of fluorescent MCL's utilizing a drum top bulb crusher. The crushed glass is still hazardous waste and needs to be transported to receivers for recycling.

Oily debris

- I. Does the community segregate oily debris from general garbage?*
Y [] / N []

If No, is there an alternate disposal site in the community for oily debris?

If Yes the following information is required,

- Methods used to store oily debris,

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- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for Record Keeping & Reporting,
- Tipping Fee's associated with the management of oily debris, and
- Plan for ultimate disposal.

Ozone Depleting Substances

- I. *Will the MSWDF accept waste ozone depleting substances (ODS's) from the residential sector?* Y [] / N []
- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste ODS's?*
- III. *Will the MSWDF accept waste ODS's from the ICI sector?* Y [] / N []

If Yes to either I, or III the following information is required.

- Methods used to segregate and store ODS's
- Methods used to prevent spills and leaks
- Contact for record keeping & reporting
- Tipping fee's associated with the management of ODS's
- Plan for ultimate disposal

Paint

- I. *Will the MSWDF accept waste paint from the residential sector?* Y [] / N []
- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste paint?*
- III. *Will the MSWDF accept waste paint from the ICI sector?* Y [] / N []

If Yes to either I, or III the following information is required.

- Methods used to screen out or, segregate specialty paints
- Methods used to store paint, and prevent
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting
- Tipping fee's associated with the management of paint
- Plan for ultimate disposal

Propane Tanks

- I. *Will the MSWDF accept waste propane tanks from the residential sector?* Y [] / N []

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- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste propane tanks?*
- III. *Will the MSWDF accept waste propane tanks from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

- Methods used to segregate and store propane tanks
- Contact for record keeping & reporting
- Tipping fee's associated with the management of waste propane tanks
- Plan for ultimate disposal

Residue fuel tanks / drums

- I. *Will the MSWDF accept waste residue fuel tanks / drums from the residential sector?*
Y [] / N []
- II. *If No, what other facilities exist within the community to facilitate the proper handling of waste residue fuel tanks / drums?*
- III. *Will the MSWDF accept waste residue fuel tanks / drums from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

- Criteria for accepting waste residue fuel tanks / drums (e.g. punctured, drained, steam cleaned, etc.)
- Methods used to clean tanks prior to disposal if disposal facility accepts residue fuel tanks / drums
- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting
- Tipping Fee's associated with the management of waste residue fuel tanks / drums.
- Plan for ultimate disposal

Used Oil

- I. *Will the MSWDF accept used oil from the residential sector?*
Y [] / N []
- II. *If No, what other facilities exist within the community to facilitate the proper handling of used oil?*
- III. *Will the MSWDF accept used oil from the ICI sector?*
Y [] / N []

If Yes to either I, or III the following information is required.

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- Methods used to store used oil
- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting
- Tipping fee's associated with the management of used oil
- Plan for ultimate disposal

Vehicles containing batteries, fluids, mercury switches

I. *Will the MSWDF accept vehicles from the residential sector?*

Y [] / N []

II. *If No, what other disposal facilities exist within the community to facilitate the proper handling of vehicles?*

III. *Will the MSWDF accept vehicles from the ICI sector?*

Y [] / N []

If Yes to either I, or III the following information is required.

- Methods used to remove hazardous materials from vehicles,
- Methods used to prevent;
 - Spills and leaks
 - Drainage from entering or leaving the site
- Contact for record keeping & reporting,
- Tipping fee's associated with the management of vehicles
- Plan for ultimate disposal of the vehicles and,
- Plan for the ultimate disposal of hazardous materials inside vehicles.

Waste Screening

An ounce of prevention is worth a pound of cure. Inappropriate management and disposal of wastes can lead to effluent and leachate that contaminates surface and groundwater. Monitoring and surveillance of municipal disposal facilities should include both proactive (prevention) and reactive (cure) components: being proactive includes screening and having controls over what is allowed in a disposal facility; reactive measures include managing unacceptable wastes, monitoring effluent and leachate contamination. Proper monitoring and surveillance can proactively prevent inappropriate management and disposal of wastes that cause contamination.

Nearly all waste screening and monitoring initiatives are void if the disposal facility does not have gate control or staff present during operating hours.

When does a hazardous material become a hazardous waste?

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Hazardous waste guidelines apply to hazardous materials that will be discarded, or are likely to be discarded.^x

Example I

Virgin fuel is a contaminant and a hazardous material. When the fuel is contaminated with moisture or stale dated it is managed as a hazardous waste even though it can be utilized as a feedstock in a used oil furnace. Businesses operating used oil furnaces are registered as receivers in the NWT.

Example II

Lead based paint may be high in lead and not meet industrial waste discharge criteria. Materials that do not meet the industrial waste discharge criteria as an effluent or as a leachable waste are also hazardous waste. When a waste is released in a disposal facility it has the potential to leach out toxic levels of chemical compounds. To predict if a substance has a potential toxicity problem, a lab test called the Toxicity Characteristic Leaching Procedure (TCLP) is utilized to make a determination.

Waste Screening for Facility–specific unacceptable wastes

A plan to screen out wastes can be made once a waste acceptance protocol has been established.

The fundamentals of successful waste screening are as follows^{xi},

- Know your generators and haulers (carriers)
- Preventative measures
- Develop standard procedures for waste screening at your disposal facility
- Train disposal site staff in those procedures
- Practice random load checking
- Educate generators and carriers
- Require movement documents for hazardous waste acceptance

A general outline of waste screening procedures can be referenced in Appendix IX. They can be applied in all disposal facilities in the NWT to some extent. The details of the waste screening procedure are best developed by the individual community.

Management of Unacceptable Wastes

Planning for Unacceptable wastes

When unacceptable waste enters the disposal facility, a plan that is available to facility staff can be referenced to deal with the situation.

Unknown and unacceptable hazardous materials need to be pulled aside and stored properly to await proper disposal or further testing. Further inspection may uncover the original generator. The drawback of returning the material directly to the hauler is that the proper disposal of waste is not ensured, and the material may return undetected, as well it might violate Department of Transportation regulations. It is

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good practice to work with the carrier or hauler to identify the generator. If the carrier refuses to co-operate, they may be held responsible for the cost of disposal.

The carrier is likely able to identify the potential source of the waste. The carrier may not be responsible unless it can be shown that they knowingly transported regulated waste. ENR believes the carrier should give maximum assistance in locating and identifying the generator.

The generator may have violated territorial or federal law by sending hazardous materials to a facility not permitted to accept this waste. The generator, if identified, will be responsible for providing the management and disposal of the waste (including all associated costs).

The responsibilities of the MSWDF, in the event of the disposal of unacceptable waste are as follows:

- Notify appropriate regulatory agency
- Secure the waste to prevent contamination
- Secure the waste against disturbance
- Keep and maintain the necessary records

The responsibility for disposing of the waste may fall to the MSW facility if the generator cannot be located.

Temporary Storage of Unacceptable Wastes

Unacceptable wastes that have been separated need to be stored in a safe, temporary storage location.

The temporary storage area should:

- Be located in a secure location,
- Have separate areas for different types of waste,
- Have proper ventilation, and
- Have safety and emergency response equipment readily available.

Recordkeeping Procedures

Suggested items for Record Keeping:

- Date and time of waste inspection
- Hauler name and company
- Type of waste detected
- Waste generator(s) if able to identify
- Actions taken to manage materials
- Facility employee in charge of waste screening

A sample inspection form can be referenced in Appendix X.

- 1. What methods will the community use to screen out unacceptable wastes?*

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- II. *How will the disposal facility manage unacceptable wastes inside the facility?*
- III. *How will the disposal facility temporarily store unacceptable wastes?*

Appendix I	Movement Documents
Appendix II	Lead-Acid Battery Storage Plan
Appendix III	Construction/Demolition Hazardous Materials Check List
Appendix IV	Common Household Hazardous Wastes
Appendix V	Hydrocarbon Contaminated Material Treatment Facilities
Appendix VI	Drum Disposal Protocol
Appendix VII	Hazardous Material Management Considerations
Appendix VIII	HHW Disposal Request Form
Appendix IX	Waste Screening Procedures
Appendix X	Sample Waste Load Inspection Report

ⁱ http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/General_management.pdf

ⁱⁱ <http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/asbestos.pdf>

ⁱⁱⁱ <http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/batteryguideline.pdf>

^{iv} <http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/antifreezeguideline.pdf>

^v http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/General_management.pdf

^{vi} <http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/ozonedepleting.pdf>

^{vii} <http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/paintguideline.pdf>

^{viii} http://www.enr.gov.nt.ca/live/documents/documentManagerUpload/Guideline_Waste_Lead_and_Paint.pdf

^{ix} http://www.justice.gov.nt.ca/PDF/REGS/ENVIRON_PROTEC/Used_Oil_and_Waste_Fuel_Mgmt.pdf

^x <http://www.unh.edu/ehs/pdf/HWMP.pdf>

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^{xi} SWANA Solid Waste Association of North America, WASTE SCREENING AT MSW MANAGEMENT FACILITIES, Training 2009