

Waste Management Plan

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1 Summary

This management plan has been prepared as a condition of the land use permitting and water licensing processes for a confirmation drilling program in the Pine Point District. This plan identifies the different ways in which waste minimization activities will be used, types of waste that might be produced as part of the permitted activities, and methods of waste handling and disposal.

2 Introduction

Pine Point Mining Limited (PPML) will be conducting confirmation drilling in the Pine Point District (Figure 1). Confirmation of resources and mineral potential is critical to enhance the viability of the project economics. PPML's policy is to comply with all existing laws and regulations to help ensure protection of the environment. In accordance with the Mackenzie Valley Resource Management Act and subject to regulations, terms and conditions, a 5-year Land Use Permit (LUP) MV2017C0024 was granted by the Mackenzie Valley Land and Water Board (MVLWB) on July 20, 2017 for certain exploration activities in the Pine Point District with an expiry date of July 19, 2021. The activities associated with that Permit and its associated Plans are independent of this Plan. This Waste Management Plan will become effective upon issuance of a new Land Use Permit and Water License for the Confirmation Drilling Program.

All confirmation drilling will be carried out by contactors. PPML activities associated with the drill program will include supervision of the program and recovery and analysis of the drill core. All contractors will be required by contract to comply with this Waste Management Plan and with the conditions spelled out in the Land Use Permit and Water License.

Waste management activities typically undertaken in PPML's drilling programs (ordered most to least preferred) include:

Source reduction	Elimination or decreases of the volume/mass of waste generated by using alternative methods or processes
Reuse	Use of a product more than once for the same use or different purpose, either on site or off site
Recycle/Recovery	Process by which materials otherwise destined for treatment or disposal are collected, processed, and/or remanufactured into the same or different products either onsite or offsite
Treatment	A method which reduces the volume, mass and/or toxicity prior to disposal. Common methods of treatment are thermal, physical, chemical, and biological processes
Release to the Environment	As a last resort, waste disposal may be required when it is not technically or economically feasible to apply preceding waste management activities. Disposal is commonly associated with the final storage location for waste at approved disposal facilities.

Source: MVLWB 2011

This Waste Management Plan identifies the types of waste generated by confirmation drilling and describes how each will be managed – including the infrastructure required.

3 Identification of Waste Types

In confirmation drilling activities, the likely sources of waste materials are associated with the dozers, drills and camp. The types of waste expected to be generated through PPML’s confirmation drilling activities are listed in Table 1. PPML does not expect that the project will generate other types of waste.

Table 1. Waste Types Potentially Generated at Pine Point Drilling Sites

Waste	Quantity per Month 2018	Max Quantity 2018 -2020	Transport from Site
Hazardous or Potentially Hazardous			
Contaminated Soils	<100 kg	100 kg	Sealed 5 gallon buckets transported to contractors’ permitted site as produced
Used oil and filters, fuels, lubricants, greases and solvents	<270 L	270 L	To permitted contractor site in Hay River as produced
Non-Mineral			
Domestic Refuse (including food waste, paper, cardboard, and plastics)	1 garbage truck	1 garbage truck	Disposed of daily
Scrap Metal	<1 kg per day	<5 kg per day	Removed to recycle as produced
Tires	Max of 1	Max of 1	Taken to disposal as accumulated
Sewage	45 gallons per PortaPotty	405 gallons/month	Accumulated and disposed as referenced in Section 4.3
Mineral			
Drill cuttings	<12,000 kg	maximum of 400 kg per day	Handled daily as referred to in Section 4.4

4 Management of Each Waste Type

PPML prefers to work with contractors that have experience in the NWT. PPML will require its contractors to comply with permit conditions and follow its management plans. Furthermore, PPML understands that the inspectors have a helpful role in ensuring that all contractors adhere to the permit; PPML will cooperate with the Inspectors. The following procedures apply waste management measures to reduce wildlife attractants, reclamation costs and health hazards. Some of the best practices for managing waste are outlined below.

4.1 Management of Hazardous or Potentially Hazardous Waste

Hazardous waste material generated from these drilling operations will be temporarily stored at an Inspector-approved, secure location. In addition, the contractor will implement the following procedures:

- a) Store hazardous materials in clearly marked containers with lids (i.e., Drums).
- b) Remove hazard materials from the site every two weeks to an approved facility for receiving hazardous waste (i.e., Hay River).
- c) Complete an appropriate waste manifest form for transporting hazardous waste and submit this to the PPML project manager who will, in turn, immediately relay the information to the ENR Hazardous Waste Specialist.

To minimize the risk of chronic and accidental spills and their impacts to the environment with respect to the transportation, storage, use and disposal of petroleum products and hazardous substances, fuel storage areas at the drill pads will be lined with an impervious liner as a preventative measure against potential future soil and groundwater contamination from fuel spills. Additional measures that must be observed related to the safe handling and transfer of fuel are identified in the permit and water license. Further discussion of safe fuel handling procedures and spill mitigation measures are identified in the Spill Contingency Plan.

4.2 Management of Solid Waste

Solid waste will be transported off-site for disposal. The Town of Hay River has stated that the Town landfill will accept solid waste from this project at its landfill. The contractor will implement the following procedures for management of solid waste:

- a) Store non-combustible solid waste in secure containers.
- b) Progressively remove solid wastes from the site and dispose at an approved facility for receiving solid waste (i.e., Hay River or Fort Resolution); use empty trucks to back-haul solid waste.
- c) At closure, remove all wastes from the site and dispose at a designated waste facility.

4.3 Management of Liquid Waste

Portable Toilets will be available, in good condition, at each drill pad. These will be emptied as needed, but at least once per month. Sewage removed from the portable toilets will be disposed of at an approved facility for receiving and treating sewage waste. The Town of Hay River has stated that the Town will accept liquid waste from this project at its lagoon (see Attachment A). The portable toilets will be sited at least 30 metres from any waterbody unless otherwise instructed by an Inspector.

4.4 Management of Drill Cuttings

While the core drilling process is designed to minimize waste product that is associated with recovery of drill core, a small fraction of the rock drilled through will be washed to the surface as “cuttings”. Cuttings will be deposited and buried in a shallow excavation or natural depression located more than 30 metres from the ordinary high water mark of any water feature or other areas deemed suitable by the Land Inspector. Shallow excavations may be established at drill sites in order to meet the needs for cuttings disposal. These will be established with the full knowledge and approval of the Inspector. PPML will work with the Inspectors to identify appropriate sites for safe disposal of drill cuttings. In winter when drilling in wet areas, cuttings will be captured and stored in secure containers and subsequently moved to a cutting disposal site for burial. Care will be taken to ensure that cuttings disposal pits are appropriately sized, that all cuttings are fully buried, and that the site is appropriately restored.

There will not be any mine tailings in the drilling program. Therefore, tailings containment is of no concern to this project. The drilling program will not generate mine waste rock. Therefore, mine waste rock management is of no concern to this project.

5 Infrastructure Required for Waste Management

The following infrastructure is required to manage waste generated from this program:

1. Pump Truck - Truck with an appropriately sized tank for transporting and disposing of liquid waste temporarily stored in the holding tanks.
2. Excavated Pit – Area where cuttings can be stored during winter months and buried when weather permits.
3. Drill Cuttings/Muds Tanks – Used for temporary storage of cuttings/mud prior to burial.
4. Waste Disposal Facilities - registered and approved facilities that will receive waste materials generated through these operations (see Table 2).

Table 2. Approved Waste Receiving Facilities

Waste Type	Facility, Waste Generator Number and Location
Solid Waste	Town of Hay River, Hay River, NT
	Hamlet of Fort Resolution, Fort Resolution, NT
Liquid (sewage) waste	Town of Hay River, Hay River, NT
	Hamlet of Fort Resolution, Fort Resolution, NT
Hydrocarbon-contaminated soil	Town of Hay River (NTR023), Hay River, NT
	KBL Environmental Ltd. (NTR134), Yellowknife, NT
Used oil and waste fuel (Burners)	Bassett Petroleum (NTR100)
	Carter Industries (NTR107), 652395 Alberta Ltd. (L&P Disposals), High Level, AB
All other hazardous waste types including contaminated water	KBL Environmental Ltd. (NTR123), Yellowknife, NT

Note: The most current list is available from: NWT: Hazardous Waste Specialist, Environment Division, GNWY
 Alberta: <http://esrd.alberta.ca/waste/hazardous-waste-management/hazardous-waste-approvals.aspx>
 BC: <http://www.hazwastebc.com/>

6 Monitoring and Evaluation

PPML staff will oversee contractors' operations and will work with them to make sure they are following this plan. The GNWT inspector has an important role in evaluating and monitoring the drill program and ensuring that waste is being handled and disposed of safely and properly. PPML project management will maintain open lines of communication with the Inspector.

7 Contingencies

PPML will work with the Inspector to address any non-compliance issues that may arise with the drilling contractors. Should unforeseen circumstances or natural events arise, PPML and its contractors will: #1 attempt to find a solution that falls within the allowable activities clearly defined in the permit; #2 contact the Inspector to seek advice on an appropriate response; and #3 seek a permit modification (last resort).

8 Acronyms and Definitions

AANDC	Aboriginal Affairs and Northern Development Canada
ENR	Environment and Natural Resources (GNWT)
GNWT	Government of the Northwest Territories
LUP	Land Use Permit
NA	Not Anticipated

9 References

Government of the Northwest Territories. Environment and Natural Resources. 2003. Used Oil and Waste Fuel Management Regulations - Plain Language Guide. 13p: <http://www.enr.gov.nt.ca/sites/default/files/guidelines>

Government of the Northwest Territories. 1998. Guideline for the General Management of Hazardous Waste in the NWT. 23p: <http://www.enr.gov.nt.ca/sites/default/files/guidelines>

Mackenzie Valley Land and Water Board. 2011. Guidelines for Developing a Waste Management Plan. 24p: http://mvlwb.com/sites/default/files/documents/MVLWB-Guidelines-for-Developing-a-Waste-Management-Plan-Mar-31_11-JCWG.pdf

Mackenzie Valley Land and Water Board. 2011. Water and Effluent Quality Management Policy. 20p. A: http://mvlwb.com/sites/default/files/documents/MVLWB-Water-and-Effluent-Quality-Management-Policy-Mar-31_11-JCWG.pdf

Attachment A.



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February 15th, 2018

This letter will confirm that Pine Point Mining Limited can deposit wastes in the Hay River landfill and lagoon arising from its drilling operations. The waste products generated throughout the program are anticipated to be in small volumes.

Please contact me if you have any questions regarding this letter of confirmation.

Sincerely,

A handwritten signature in cursive script, appearing to read "Judy Goucher".

Judy Goucher
SAO

cc. Tim Smith, Pine Point Mining Limited